Correspondence to: Iris Ahronowitz, MD, 1441 Eastlake Ave, Ezralow Tower, Ste 5301, Los Angeles, CA 90033

E-mail: iris.ahronowitz@med.usc.edu

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Engaging but inaccurate: A cross-sectional analysis of acne videos on social media from non−health care sources

To the Editor: Acne affects an estimated 85% of adolescents and young adults aged 12 to 24 years in the United States.[1] This population is highly adept at accessing online acne information through social media platforms, with YouTube being the most frequently used of these platforms.[2] Despite its popularity, the validity of health care information on YouTube has not been studied extensively in dermatology. We aimed to determine the accuracy, quality, viewer engagement, and viewer experience of acne videos on social media.

We conducted a cross-sectional study by collecting videos using the search terms *acne* and *acne treatment* on YouTube. For each term, we examined results from the first 3 pages (60 videos per term). Videos were categorized by source into 5 groups and into 2 large categories: (1) health care source, and (2) non−health care source (Table I). Three independent raters used 4 instruments to evaluate each video. Accuracy was assessed using the validated Accuracy in Digital Health Instrument[3] and the Dy et al. Accuracy Scale[4] (Fig 1). Quality was assessed using the Global Quality Scale.[5] Viewer engagement was assessed by an engagement ratio, defined as (numbers of likes + dislikes + comments)/total views. Overall viewer experience was assessed with the validated Armstrong Viewer Assessment[3] (Fig 1). Two-tailed *t* tests were used to determine significant differences between videos from health care and non−health care sources.

A total of 120 videos were screened for inclusion. After applying inclusion and exclusion criteria, 69 videos were available for assessment of outcomes: 6 were non-English, and 45 were irrelevant to the topic (procedures showing comedone extraction or expression of cyst contents). Compared with health care sources, non−health care sources had higher mean numbers of views (609 493 vs 450 765), were less accurate (Accuracy in Digital Health Instrument: 2.40 ± 0.14 vs 2.97 ± 0.28, $P = .041$), of lower quality (Global Quality Scale: 2.73 ± 0.11 vs 3.39 ± 0.27, $P = .020$), and provided an inferior viewer experience (Armstrong Viewer Assessment: 2.13 ± 0.14 vs 2.74 ± 0.19, $P = .007$) (Fig 1). Specifically, videos from the lay media and lay individuals were of the lowest accuracy, quality, and viewer experience, whereas videos from universities/professional organizations were most accurate and had the highest quality and viewer experience. Additionally, non−health care sources were more engaging than health care sources (viewer engagement ratio: 0.030 ± 0.004 vs 0.015 ± 0.003, $P = .002$).

Our findings suggest that viewers seeking video-based educational content on acne are exposed to significantly inaccurate and low-quality information. For example, some recommended methods of acne treatment on YouTube included highly restrictive diets or the addition of high-dose supplements, which currently lack scientific basis. These findings are particularly important to adolescents because acne is highly prevalent in this population, and this group is most likely to view information on YouTube.[2] Unless we actively address the problem of widely available inaccurate information, clinicians will spend much time dispelling inaccuracies that patients learn from these platforms, and patients will waste time experimenting with ineffective therapies that may be associated with harm. Educational efforts are needed to create accurate, engaging, and accessible content for the public on acne and other dermatologic diseases.

Andrea J. Borba, MS,[a] Paulina M. Young, BS,[b] Charlotte Read, MBBS, BSc,[c,d] and April W. Armstrong, MD, MPH[d]

From the Geisinger Commonwealth School of Medicine, Scranton, Pennsylvania[a]; University of Southern California Keck School of Medicine, Los Angeles, California[b]; Imperial College London, London, United Kingdom[c]; and Department of Dermatology, University of Southern

Table I. Acne video characteristics based on healthcare versus non–health care sources and source group

Video characteristics	Health care sources vs non–health care sources			Source group					
	Health care sources* (n = 18)	Non–health care sources† (n = 51)	*P* value	University/ professional organizations (n = 1)	Industry (n = 2)	Lay media (n = 20)	Individuals: Health care professionals (n = 15)	Individuals: Non–health care professionals (n = 31)	*P* value
Mean number of views	450 764.70	609 493.30	.32	24 937.00	106 099.00	829 770.05	525 108.67	467 379.32	.89
Mean video length, min	5.76	7.17	.17	3.13	7.12	4.85	5.76	8.67	.10
Mean upload duration, d	1056.83	788.55	.13	985.00	30.50	747.80	1198.47	814.84	.24
Mean number of likes	5914	10 396.22	.22	126.00	451.50	9311.30	7028.20	11 096.16	.97
Mean number of dislikes	241.33	260.80	.46	29.00	9.50	339.35	286.40	210.13	.88
Mean number of comments	351.06	617.43	.17	12.00	51.50	546.90	413.60	662.94	.92

*University/professional organizations, industry, individuals (health care professionals).
†Individuals (not health care professionals), lay media.

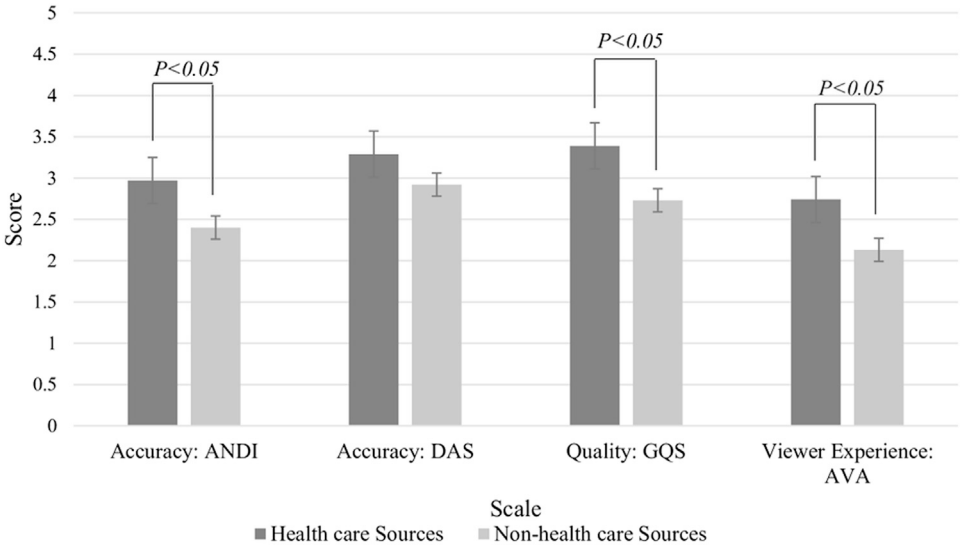

Fig 1. Acne video accuracy, quality and viewer experience mean scores based on healthcare vs. non-healthcare sources. *Accuracy in Digital Health Instrument scale: 0, not accurate at all; 1, minimally accurate; 2, fairly accurate; 3, mostly accurate; 4, completely accurate. †Dy et al. Accuracy Scale: 1, 25% or less of information is accurate; 2, 26% to 50% of information is accurate; 3, 51% to 75% of information is accurate; 4, 76% to 100% of information is accurate. ‡Global Quality Scale: 1, poor quality, poor flow of the video, most information missing, not at all useful for patients—I would highly discourage a patient with this disease from watching this video. 2, generally poor quality and poor flow, some information listed but many important topics missing, of very limited use to patients—I would discourage a patient with this disease from watching this video. 3, moderate quality, suboptimal flow, some important information is adequately discussed but other information is poorly discussed, somewhat useful for patients—I would neither encourage nor discourage a patient with this disease from watching this video. 4, good quality and generally good flow, most of the relevant information is listed but some topics not covered, useful for patients—I would encourage a patient with this disease to watch this video. 5, excellent quality and flow, very useful for patients—I would highly encourage a patient with this disease to watch this video. §Armstrong Viewer Assessment: 0, very poor; 1, poor; 2, fair; 3, good; 4, very good.

California Keck School of Medicine, Los Angeles, California.[d]

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Correspondence to: Andrea J. Borba, MS, University of Southern California, 1975 Zonal Ave, KAM 510, MC 9034, Los Angeles, CA 90089

E-mail: andieborba@gmail.com

Reprint requests: April W. Armstrong, MD, MPH, University of Southern California, 1975 Zonal Ave KAM 510, MC 9034, Los Angeles, CA 90089

E-mail: armstrongpublication@gmail.com

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Characterizing procedural complications using a structured dermatology triage approach in an academic center

Procedural complications have a detrimental impact on the quality of care delivered by dermatologists.[1-3] Though observational studies have identified relatively low rates of true complications arising from outpatient dermatologic procedures—most commonly bleeding or surgical site infections—the extent of clinical resources dedicated to their management in a standard dermatology practice has not been well characterized. We sought to characterize procedural complication frequency as identified through a novel, structured, dermatology-specific triage algorithm to better understand resource use in an academic dermatology practice.

Over a 6-month period from February 2017 through July 2017, nursing triage staff at the Brigham and Women's Hospital Department of Dermatology tracked all possible complications in postprocedural patients using standardized tracking logs (Fig 1). All nurse-initiated calls, patient-initiated calls, patient portal messages, and postprocedural visits for complications were tracked. All patients undergoing excisions received routine day 1 postprocedure calls. Patients with suspected complications were provided phone-based education for suspected minor complications (eg, adhesive allergy, minor pain) or scheduled for in-person evaluation of suspected major complications (eg, wound infection) within 1 day.

Eight thousand five hundred thirty-seven procedures were performed during the study period (Table I). Four hundred eighty-eight telephone calls were completed, identifying 44 patients with 56 postprocedural complications or concerns. Most patient concerns were expressed between days 5 and 10 postprocedurally; only 2 patients were identified on routine postprocedure day 1 calls with potential complications. The most frequent patient concerns included procedure site infection, excessive pain, and allergic contact dermatitis. Thirty-one patients were scheduled for in-person dermatologist evaluation based on nursing triage suspicion, 20 of whom received systemic antibiotics for suspected infection (overall infection rate, 20/8084 [0.25%]). One patient required inpatient hospitalization for a postprocedural complication during the 6-month period, requiring intravenous antibiotics for a postprocedural lower extremity cellulitis.

Current literature suggests that approximately 2% of patients undergoing routine dermatology outpatient procedures experience complications, slightly higher than our single academic medical dermatology practice-limited observation. If nonexcision patients with complications sought care elsewhere (despite postprocedural care instructions to contact us with any concerns), our findings may underestimate true procedural complication incidence.

Our observations provide several insights for efficient resource use of a nursing triage algorithm in a dermatology practice.[4] First, excisions were most likely to result in postprocedural complications, potentially justifying routine postprocedural calls to patients postexcision. However, the timing of postprocedural calls needed to be reconsidered because