


RESEARCH IN BRIEF

Biologics to breast milk: A cross-sectional study of popular eczema treatment content on TikTok

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Abstract

We conducted a cross-sectional study to compare viewer engagement, content quality and viewer experience of eczema related medical content on TikTok between health care professionals and non-health care professionals. Compared to non-health care professionals, health care professionals created videos of higher quality and superior viewing experience. Viewer engagement did not differ significantly between videos made by health care professionals and non-health care professionals. Overall, content creators should focus on producing comprehensive, evidence-based videos.

KEYWORDS

atopic dermatitis, eczema, physician, social engagement, social media

Eczema affects 9.8% of the pediatric population in the United States.¹ This population commonly seeks health information on social media platforms, including TikTok.¹ TikTok has garnered one billion monthly users as of January 2022; 32.5% of its users are between the ages of 10 and 19 in the United States.² Health care professionals, lay persons, and private companies create treatment-centric content about common dermatologic conditions,³ including eczema. Because these videos are widely viewed and can influence health-seeking behavior, it is important to characterize eczema content on TikTok. In this study, we aimed to compare the viewer engagement, quality, and viewer experience of eczema treatment videos created by health care professionals and non-health care professionals.

We conducted a cross-sectional study by searching *eczema* and *eczema treatment* using TikTok's search algorithm. For each term, the top 60 videos uploaded between February 13, 2020 and January 21, 2022 that met inclusion criteria (content related to eczema, in English, and included text or audio), were included. Viewer engagement was evaluated using a ratio ((number of comments + likes)/views) Two independent raters, a physician and a medical student,

assessed quality and viewer experience. Quality was assessed by DISCERN, a validated 16-item instrument analyzing health information using a scale of one to five (1 = poor quality with extensive shortcomings, 3 = fair quality with potentially important but not serious shortcomings, 5 = high quality with minimal shortcomings).⁴ Viewer experience was defined as the overall experience of receiving health information through online media, and viewer experience was assessed using the Armstrong Viewer Assessment (AVA).^{5,6} The AVA is an instrument with high inter-rater and intra-rater reliability used to evaluate the overall experience of consumer receiving online health information (0 = very poor experience, 1 = poor experience, 2 = fair experience, 3 = good experience, 4 = very good experience).^{5,6} Two-tailed *t* tests with significance level of 0.05 were applied.

The top 120 videos had a total of 10,108,389 views, 10,460,648 likes, and 125,458 comments. An overview of video characteristics is shown in Table 1. Health care professionals included dermatologists, pediatricians, pharmacists, and nurses. Viewer engagement did not significantly differ between videos created by health care

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TABLE 1 Characteristics of popular eczema content on TikTok

	No. of videos (%)	Mean no. of likes	Mean no. of comments	Mean no. of views	Mean viewer engagement ratio	Mean DISCERN (quality)	Mean AVA (viewer experience)
Content creator							
Individual—non-health care professional	79 (65.8)	82,939	1156	830,748	0.08 ± 0.01	1.65 ± 0.06	2.41 ± 0.10
Individual—health care professional	19 (15.8)	35,311	662	710,663	0.05 ± 0.01	2.40 ± 0.10	3.18 ± 0.16
Private company	22 (18.3)	147,159	979	1,089,850	0.06 ± 0.01	1.50 ± 0.06	2.45 ± 0.20
Health care professional subtype							
Dermatologist	12 (63.2)	51,361	916	1,048,608	0.05 ± 0.01	2.44 ± 0.11	3.50 ± 0.16
Pediatrician	4 (21.1)	3050	109	62,225	0.05 ± 0.06	2.82 ± 0.13	3.13 ± 0.31
Pharmacist	2 (10.5)	19,359	533	227,350	0.07 ± 0.03	1.84 ± 0.44	2.25 ± .025
Nurse	1 (5.3)	3669	77	215,700	0.02 ± 0.00	2.25 ± 0.00	2.00 ± 0.00
Gender							
Female	95 (79.2)	81,902	1062	810,109	0.07 ± 0.01	1.66 ± 0.05	2.45 ± 0.09
Male	25 (20.8)	107,194	980	104,5921	0.07 ± 0.01	2.04 ± 0.13	2.86 ± 0.18
Video type							
Anecdotal	43 (35.8)	111,849	1695	1,054,194	1.00 ± 0.02	1.47 ± 0.05	2.29 ± 0.12
Education	30 (25.0)	30,808	584	508,331	0.06 ± 0.01	2.30 ± 0.12	2.92 ± 0.17
Home remedy	20 (16.7)	102,193	694	1,054,205	0.04 ± 0.01	1.66 ± 0.10	2.55 ± 0.20
Advertisement	27 (22.5)	99,370	783	794,222	0.06 ± 0.01	1.60 ± 0.06	2.51 ± 0.17

Abbreviation: AVA, Armstrong Viewer Assessment.

TABLE 2 Video characteristics stratified by health care vs. non-health care professional and physician vs. nonphysician health care professional content creators

	Health care professional (n = 19)	Non-health care professional (n = 101)	p value
Mean viewer engagement ratio ± SD	0.05 ± 0.01	0.073 ± 0.01	0.34
Mean DISCERN (quality) ± SD	2.40 ± 0.10	1.62 ± 0.05	<0.0001
Mean AVA (viewer experience) ± SD	3.18 ± 0.16	2.42 ± 0.09	<0.001
	Physician (n = 16)	Nonphysician health care professional (n = 3)	p value
Mean viewer engagement ratio ± SD	0.05 ± 0.01	0.05 ± 0.02	0.95
Mean DISCERN ± SD	2.46 ± 0.10	1.98 ± 0.29	0.07
Mean AVA (viewer experience) ± SD	3.38 ± 0.15	2.17 ± 0.17	0.003

Abbreviations: AVA, Armstrong Viewer Assessment; SD, standard deviation.

professionals and those created by non-health care professionals (0.050 ± 0.01 vs. 0.073 ± 0.01, $p = .34$).

Health care professionals created videos of higher quality compared to non-health care professionals (DISCERN: 2.40 ± 0.10 vs. 1.62 ± 0.05, $p < .001$) (Table 2). Nevertheless, both groups created content with extensive shortcomings, indicated by DISCERN ratings of 1–2. Deficiencies common to all content creators included failure to discuss risks of treatment and cite sources.

Health care professionals also created videos of superior viewer experience compared to non-health care professionals (AVA: 3.18 ± 0.16 vs. 2.42 ± 0.09, $p < .001$) (Table 2). A sensitivity analysis revealed that content created by physicians had a greater viewer

experience compared to nonphysician health care professionals (AVA: 3.38 ± 0.15 vs. 2.17 ± 0.17, $p = .003$).

This study suggests that those seeking guidance related to eczema on TikTok are exposed to low-quality information. While clinicians discuss highly relevant topics on TikTok, including topical steroids and biologics, more time should be allocated for other important aspects of treatment that may be relevant to patients, like side effects. Furthermore, several treatments presented by non-health care professionals may be ineffective or harmful, such as application of breast milk and restrictive diets. These findings are particularly pertinent to adolescents, who are affected by eczema and make up the largest cohort of TikTok users.

Given its extensive network of users, TikTok has the potential to serve as a powerful tool for the dissemination of accurate dermatologic medical content. However, efforts need to be focused on creating evidence-based educational content and providing reliable sources.

CONFLICT OF INTEREST

April W. Armstrong has served as a research investigator and/or scientific advisor to AbbVie, Almirall, Arcutis, ASLAN, Beiersdorf, BI, BMS, EPI, Incyte, Leo, UCB, Janssen, Lilly, Nimbus, Novartis, Ortho Dermatologics, Sun, Dermavant, Dermira, Sanofi, Regeneron, Pfizer, and Modmed. Sabrina Khan, Danielle Yee, Samiya Khan, Manan Mehta, Nicole Maynard, and Rasika Reddy have no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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