An Analysis of Heat-Related Illness Content on TikTok

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Introduction

Global mean temperatures have risen at a rate of 0.2 degrees Celsius for the past decade and are expected to rise at an even greater rate over the next decades.[1] As temperatures rise, episodes of extreme heat waves are anticipated to become more frequent and intense.[2] Direct heat illness, representing a range of presentations from mild heat rash to severe heat stroke, are caused by high temperatures through cellular and systemic mechanisms. As a result, optimal public education on the prevention of heat illness is paramount.

TikTok, a video-based social media platform, has become an increasingly popular platform for health education.[3] Due to its rising popularity and now over 800 million active users,[4] TikTok has provided a unique avenue for health professionals and other organizations to educate the public on important health topics as the videos are viewed frequently and can impact health behaviors. Thus, it is important to characterize the health content on TikTok. This study aims to characterize the content of and viewer engagement, quality, and viewer experience on heat related illness videos on TikTok.

Materials and Methods

For this cross-sectional study, "heat related illness" and "heat stroke" were searched using TikTok's search algorithm from May-June, 2023. For each term, the top 30 videos that met inclusion criteria (content related to heat illness, in English) were included. Viewer engagement was calculated as the number of comments plus likes /views. Two independent reviewers assessed video quality and viewer experience. Quality was assessed using the Global Quality Scoring System (GQS) which was adapted from the validated DISCERN scale.[5] This scoring system uses a scale of one to five (1= poor quality, not at all useful for patients, 3= moderate quality, somewhat useful for patients, 5= excellent quality, very useful for patients). Viewer experience was assessed using the Armstrong Viewer Assessment (AVA) which has high inter-rate and intra-rater reliability for evaluating the experience of receiving online health information (0= very poor experience, 1 = poor experience, 2 = fair experience, 3 = good experience 4= very good experience).[6] Two-sample T-test was used for comparing viewer engagement, quality, and viewer experience scores between healthcare professionals and non-healthcare professionals. The threshold of significance was set at $p<0.05$.

For the descriptive analysis, anecdotal videos were defined as videos recounting a personal story; educational videos were those focused on improving knowledge; home remedy videos shared unconventional or natural treatments for heat illness; advertisements promoted a product or service, and point of view (POV)/humorous videos were combined into the last category. POV videos were defined as those that are meant to be watched with the viewer imagining themselves in a specific situation.

Finally, because we were interested in the content of the educational videos specifically, we conducted a content analysis by coding the primary theme of these videos. Any disagreement between the two independent raters on the primary theme was resolved through discussion.

Results

The top 60 videos had a total of 21,221,139 views, 1,410,278 likes, and 17,146 comments. Health care professionals included physicians, nurses, and pharmacists. A summary of characteristics of the 60 videos are provided in Table 1.

Viewer engagement did not differ significantly between videos created by healthcare professional's vs non-healthcare professionals (.05 ± .01 vs .09 ± .01, p= 0.88). However, healthcare professionals made videos of significantly higher quality compared to non-healthcare professionals (GQS: 4.11 ± .18 vs 2.35 ± .16, p= 0.000). Health care professionals also created videos of higher rated viewer experience compared to non-health care professionals (AVA: 2.94 ± 0.23 vs. 2.13 ± 0.13, p < .001). The difference in video quality and viewer experience between videos uploaded by healthcare professionals and non-healthcare professionals was notable given that the p values were well below 0.05. A summary is provided in Table 2.

In our secondary content analysis of the educational videos related to heat illness, the most common topic was heat illness signs/symptoms (54%), followed by prevention of heat illness (33%) and treatment (13%). A summary is provided in Table 3.

Discussion

Study results suggest that those seeking guidance related to heat illness issues on TikTok are exposed to low quality material. While clinicians provide information that may be useful to patients, as described in Table 1, most videos on this topic on TikTok are provided by non-healthcare professionals (85%). This creates an even greater need for healthcare professionals to ensure the videos they upload are of high quality and value. Both groups (healthcare professionals and non-healthcare professionals) had users who created videos of average to below average quality (GQS of 3 and below). One weakness we noted was that all users, including healthcare professionals, could cite sources to provide videos of higher quality. Videos that were succinct, provided pictures/text in addition to audio, or were easy to understand were generally rated as more enjoyable for the viewer.

Conclusion

Given that a large percentage of the global population uses social media, platforms like TikTok provide a unique opportunity for medical professionals to accurately educate patients on health information. More efforts should be made for healthcare professionals to create accurate content on these platforms. Citing sources and providing pictures or text are some ways that users can improve video quality and experience.

Acknowledgements

Disclosure of Interest

References

1. Petkova EP, Morita H, Kinney PL. Health impacts of heat in a changing climate: how can emerging science inform urban adaptation planning?. *Curr Epidemiol Rep*. 2014;1(2):67-74. doi:10.1007/s40471-014-0009-1

2. Kovats RS, Hajat S. Heat stress and public health: a critical review. *Annu Rev Public Health*. 2008;29:41-55. doi:10.1146/annurev.publhealth.29.020907.090843

3. Comp G, Dyer S, Gottlieb M. Is TikTok The Next Social Media Frontier for Medicine?. *AEM Educ Train*. 2020;5(3):10.1002/aet2.10532. doi:10.1002/aet2.10532

4. Ceci L. Number of TikTok Users Worldwide from 2020 to 2025. Published September 5, 2022. Accessed May 15, 2023. Available at https://www.statista.com/statistics/1327116/number-of-global-tiktok-users/

5. Bernard A, Langille M, Hughes S, Rose C, Leddin D, Veldhuyzen van Zanten S. A systematic review of patient inflammatory bowel disease information resources on the World Wide Web. *Am J Gastroenterol*. 2007;102(9):2070-2077. doi:10.1111/j.1572-0241.2007.01325.x

6. Chen AY, Azizi B, Borba AJ, Armstrong AW. Rosacea videos on social media: A comparison of accuracy, quality, and viewer engagement. *Dermatol Online J*. 2021;27(2):13030/qt55c0g9wz. Published 2021 Feb 15.

Table 1: Characteristics of Heat Related Illness Content on TikTok

	No of Videos (%)	Mean no. of likes	Mean no of comments	Mean no. of views	Mean viewer engagement ratio	Mean GQS (quality)	Mean AVA
Content Creator							
Individual-Non-Health Care Professional	38 (63.3)	32,541	357	505,306	.09 ± .01	1.97 ± .14	1.92 ± .14
Individual Health Care Professional	9 (15.0)	6,794	50	83,734	.05 ± .01	4.11 ± .18	2.94 ± .23
Private Company	13 (21.7)	8,657	237	97,374	.08 ± .05	3.46 ± .27	2.7 ± .20
Gender							
Male	17 (36)	44,611	499	336,882	.07 ± .02	2.67 ± .29	2.2 ± .23
Female	30 (64)	14,928	126	141,146	.09 ± .01	2.41 ± .22	2.1 ± .17
Video Type							
Anecdotal	25 (41.7)	28,502	319	658,601	.08 ± .01	1.76 ± .17	1.76 ± .15
Education	24 (40)	3,200	35	45,152	.05 ± .01	3.75 ± .14	2.8 ± .15
Home Remedy	5 (8.3)	4,455	61	81,385	.08 ± .02	2.6 ± .24	2.1 ± .29
Advertisement	2 (3.3)	13,806	67	20,763	.35 ± .32	2.5 ± 1	2 ± 0
POV/ Humorous	4 (6.7)	142,756	1973	806,000	.18 ± .06	1.25 ± .14	2.3 ± .82

Table 2: Video Characteristics Separated by Health-Care Professional vs Non-Health Care Professional

	Health Care Professional	Non-Health Care Professional	p-value
Mean Viewer Engagement ratio ± SD	.05 ± .01	.09 ± .01	0.88
Mean GQS ± SD	4.11 ± .18	2.35 ± .16	0.000*
Mean AVA ± SD	2.94 ± .23	2.13 ± .13	0.006*

Table 3: Frequency of Primary Themes for Educational Heat Illness Content on TikTok

Primary Theme	n (%)
Heat Illness Signs/ Symptoms	13 (54)
Prevention of Heat Illness	8 (33)
Treatment of Heat Illness	3 (13)