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# Using TikTok to Educate, Influence, or Inspire? A Content Analysis of Health-Related EduTok Videos

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This study explores how people engage with educational and motivational content on TikTok. We conducted a mixed-methods content analysis of N=400 health videos from the prosocial EduTok campaign. Two theories guided our analysis of content: the motivational theory of role modeling and the health belief model. Our results revealed that audiences most frequently engaged with educational videos related to diet, exercise, and sexual health. Role model appeals were prominently featured and highly engaged with. However, these videos often framed health promotion through an ideal lens, without including information needed for behavior change attainability. The prevalence of constructs from the health belief model in videos varied. Videos emphasizing prevention, cues to action, and behavior antecedents including perceived benefits and severity attracted more views and engagement than videos that did not include these concepts. We further observed a trend in which content creators used severity in a sensational manner to elicit shock and outrage, which in turn boosted content virality. When included, videos featuring efficacy appeals garnered higher engagement. However, these appeals were less common and had limited reach. Overall, our findings provide implications for using role modeling and theory-driven appeals in social media eHealth communication.

This research evaluates theory-driven educational health content on TikTok, a rapidly growing social media platform that encourages users to create and share short videos (Zulli & Zulli, 2020). TikTok has an estimated two billion active users worldwide and 900 million monthly active users (SEMrush, 2022), which includes top user bases from the United States. Indonesia, Brazil, Russia, and Mexico (Ceci, 2023). A survey from the PEW Research Center indicates that TikTok is especially popular among teenagers with a reported 67% of participants aged 13-17 using the platform, including 81% of Black and 71% of Hispanic youth in the U.S (Vogels, Gelles-Watnick, & Massarat, 2022). Social media platforms serve as significant resources for seeking and sharing health information (Zhao & Zhang, 2017). Sharing educational health content on social media offers numerous benefits, such as the ability to reach diverse populations with interactive, entertaining, timely, low-cost, and targeted messages (Lowe, Powell, Griffiths, Thorogood, & Locock, 2009; Noar, Harrington, Noar, & Harrington, 2012). However, evidence-based public health information on TikTok remains limited (Baumel, Spatharakis, Karitsiotis, & Sellas, 2021). When credible information is present on TikTok, it is integrated with personal stories that may include unverified health claims, incomplete facts, or even manipulative disinformation (Montag, Yang, & Elhai, 2021). There is a critical need for research on effective strategies for health professionals to promote educational content on video-based social media, particularly given that platforms like TikTok have the potential to reach diverse audiences in unique and engaging ways.

Extensive evidence suggests that behavior change theories can guide health promotion strategies on social media (e.g., Coman, Bazaa, Guidry, & Miller, 2023; Guidry et al., 2022; Thackeray, Neiger, Smith, & Van Wagenen, 2012; Zhao & Zhang, 2017). However, to our knowledge, these theories have not been applied in relation to social media engagement with health education content on TikTok. In this study, we analyze educational content using the motivational theory of role modeling and the health belief model (Becker, 1974; Morgenroth, Ryan, & Peters, 2015). First, the motivational theory of role modeling reveals potential pathways through which role models can motivate others (Morgenroth, Ryan, & Peters, 2015), which are important to understand given the prevalence of influencers and personal health stories on TikTok (Zenone, Ow, & Barbic, 2021). Second, the health belief model outlines the message characteristics necessary for effectively promoting behavior change, including benefits, barriers, self-efficacy, susceptibility, severity, and cues to action (Becker, 1974; Janz & Becker, 1984). These factors are thought to influence an individual's readiness to engage in healthrelated actions (Guidry et al., 2019). Examining how content creators convey their beliefs and the level of audience engagement with these concepts can inform electronic health strategies (Nutley et al., 2021).

In this research, we integrate two established theoretical frameworks to examine how TikTok content creators are currently using the platform for health promotion. By identifying

trends in the data, we aim to provide valuable insights into how healthcare professionals can leverage theory-based approaches to effectively reach and engage their target audiences. In the subsequent literature review, we explore the benefits and barriers of using social media for health promotion and how these concepts extend to the platform TikTok.

#### Literature Review

#### eHealth Promotion and TikTok

Communication campaigns that use social media for message dissemination can positively affect individuals' health-related knowledge, behaviors, and beliefs (Hermann & Govender, 2022; Jeminiwa et al., 2019; Noar & Willoughby, 2012; Norman & Yip, 2012; O'Donnell & Willoughby, 2017). There is strong evidence that electronic health (eHealth) technologies increase campaign engagement and accessibility (Lowe, Powell, Griffiths, Thorogood, & Locock, 2009; Noar, Harrington, Noar, & Harrington, 2012). Eng defines eHealth as "the use of emerging information and communication technology, especially the Internet, to improve or enable health and health care" (2002, p. 297). eHealth practices promote a variety of health behaviors, but as new technologies and message platforms are created, they must be analyzed to ensure high-quality message reception (Eng. 2002). Public health organizations worldwide have affiliated social media pages, which they use to educate and inform the public about a variety of health topics (Guidry et al., 2022; Thackeray, Neiger, Smith, & Van Wagenen, 2012).

Video-based social media sites such as TikTok are emerging platforms for eHealth (Basch, Mohlman, Fera, & Tang, 2021; Baumel, Spatharakis, Baumel, & Sellas, 2022; Eghtesadi & Florea, 2020; Fraticelli et al., 2021; Li & Liu, 2020). The platform is particularly popular among teenagers, who may be receptive to receiving health information through it (Blandi et al., 2022). A recent survey suggested that 14% of Gen Z respondents use TikTok as their primary search engine (Huang, 2022). This preference may be explained by evidence that young people prefer to learn about health from short, engaging videos rather than text (Chan & Allman-Farinelli, 2022). A uses and gratifications study of TikTok suggested that people often use the app for both entertainment and educational purposes, including accessing information and learning (Bossen & Kottasz, 2020). The benefits of presenting health information in an engaging and educational manner on TikTok could involve enhanced accessibility to information, making learning enjoyable and easy to comprehend, and cultivating a sense of community among users with shared health interests (Oakley-Girvan & Docherty, 2022).

As a new platform, research on eHealth and TikTok is newly emerging. Recent research spans topics including COVID-19 (Basch, Meleo-Erwin, Fera, Jaime, & Basch, 2021; Baumel, Spatharakis, Baumel, & Sellas, 2022; Ostrovsky & Chen, 2020), eating disorder recovery (Herrick, Hallward, & Duncan, 2021), medicine (Comp, Dyer, Gottlieb, & DeIorio, 2021), oral health (Fraticelli et al., 2021), mental health (McCashin & Murphy, 2022), sexual health (Stein, Yao, &

Aitamurto, 2022), wellness (Sweeney-Romero, 2022), among others. This platform-specific research is important based on the scale of TikTok's global influence. However, this literature also speaks to the utility of social media and video platforms in general for health promotion.

TikTok's rise to popularity coincided with the COVID-19 pandemic, leading to frequent discussions about public health on the platform. Users shared their pandemic-related concerns using the hashtag #coronavirus (Comp, Dyer, Gottlieb, & Delorio, 2021). However, during the early stages of the pandemic, COVID-19 information was rarely disseminated by official public health sources (Ostrovsky & Chen, 2020), a trend that extended to other platforms like Twitter (Kim & Valente, 2020). Researchers worldwide have identified the viral spread of misinformation and disinformation as a major barrier to using social media for eHealth (Basch, Meleo-Erwin, Fera, Jaime, & Basch, 2021). This makes it essential for health professionals to be active on popular social media platforms to provide audiences with credible information.

#### EduTok and Content Creators

Considering the potential for learning on the platform, TikTok created #EduTok, which is a hashtag challenge that encourages users to create educational and motivational content (TikTok for Good, 2020). A hashtag challenge is a formal or informal viral content creation initiative that can be used to promote public good (Kennedy, 2020; Vizcaíno-Verdú & Abidin, 2022; Zulli & Zulli, 2020). The ALS Ice Bucket Challenge is a seminal example of a health-related hashtag challenge that drew viral attention to a public health cause (Kilgo, Lough, & Riedl, 2020). Since its inception, EduTok has resonated globally, with approximately 8.8 million videos created and a total of 48.1 billion views (TikTok, 2022). As part of the EduTok campaign, TikTok partnered with 5,000 content creators and healthcare professionals to share materials centered on "education, motivation, health and wellness" (TikTok, 2019). This initiative established official partnerships with healthcare professionals to disseminate public health content, encompassing entertaining medical comedy, public health appeals, and videos specifically designed to counter COVID-19 misinformation (Rao, 2022).

A range of healthcare professionals, including physicians, nurses, therapists, and registered dietitians, often referred to as "medfluencers" (medical influencers), share formal health information or advice on TikTok (Mayat, Edwards, & Guckian, 2022). However, distinguishing between formal and informal health information can be challenging. In general, Sudhinaraset, Ingram, Lofthouse, Montagu, and Derrick (2013) define formal health sources as individuals with specific training, registration, regulation, professional affiliation, and who accept payment for medical services. Informal health sources may meet some, but not all, of these criteria and could include individuals with specialized knowledge or experience in fitness, nutrition, healthcare, or wellness. Celebrities, influencers, and laypeople may also share EduTok health content, especially if it relates to personal health stories or cause advocacy.

Health influencers may share different content than formal health providers. For example, researchers have identified a prominent theme on TikTok called #ThatGirl, where women promote an idealized version of health associated with wealth, thinness, youth, and beauty (Bavikatty, 2022). This includes practices such as waking up early, consuming nutritious and visually appealing meals, prioritizing mental health, and exercising. Sweeney-Romero (2022) argues that these portrayals are harmful and problematic, stating, "#ThatGirl videos on TikTok ascribe to white supremacist views of beauty and productivity by idealizing the 'look' of wellness as that of a woman who is laboring at all times—for her job and for her body" (p. 1). Hence, eHealth content on TikTok is a broad spectrum of ideas and concepts that need further examination.

In the following section, we outline the theoretical foundations we plan to use for analyzing this content. It is important to note that we did not assume content creators used theory to inform their promotion strategies. Rather, our goal was to explore the underlying health beliefs and motivational strategies that content creators use to engage audiences. This approach provides researchers and practitioners with a deeper understanding of the eHealth landscape and future opportunities and challenges.

# Evaluating Theory in eHealth Promotion

In this study, we evaluate eHealth promotion on EduTok using the motivational theory of role modeling (Morgenroth, Ryan, & Peters, 2015) and the health belief model (Becker, 1974; Janz & Becker, 1984). These two theoretical foundations are wellestablished as tools that can effectively inform the promotion of healthy behaviors or the cessation of unhealthy behaviors. The motivational theory of role modeling establishes ways in which role models inspire role aspirants to set goals. Grounded in social cognitive theory (Bandura, 2001) and expectancy motivation literature (Howard, 1989), this theory proposes that role models (1) inspire others, (2) reveal the possible, and (3) model behavior (Morgenroth, Ryan, & Peters, 2015). EduTok is an educational effort that inspires content creators to share their knowledge with others. Hence, it is important to explore persuasion techniques used within eHealth promotion through this hashtag challenge. In addition to role model appeals, we are also interested in analyzing health belief constructs that can inform behavior change. The health belief model (Becker, 1974; Janz & Becker, 1984) is a primary theory within health communication that addresses the importance of six behavioral antecedents: perceived barriers and benefits, severity and susceptibility, self-efficacy, and cues to action. First, it is essential for health communicators to clearly identify the barriers and benefits related to performing a behavior. Research suggests that both must be identified, but the benefits must outweigh the harms (Glanz, 1997). Next, health communicators must explain how susceptible an individual is to risks and how severe those risks are in relation to health outcomes, such as for acquiring an illness. Finally, individuals must feel efficacious that they can successfully take action, and they must be presented with motivation and resources to do so.

In this research, our outcomes of interest are content frequency, reach, and interactions (e.g., likes and comments). These three outcomes provide insights into the topics and theoretical constructs emphasized by content creators, the extent of audience exposure to this content and the related constructs, and the degree of audience engagement on social media (Benavides, Benítez-Andrades, Marqués-Sánchez, & Arias, 2021). Furthermore, these outcomes will shed light on content and constructs that may be overlooked or require more attention and those that are overperforming and can be promoted further on the platform. As such, we propose the following three research questions to assess eHealth EduTok content:

What health educational topics are prominent in EduTok videos, and how do audiences engage with these topics?

To what extent are (a) role modeling and (b) health belief model constructs present in EduTok videos, and how do audiences engage with this content?

What themes are prominent in health promotion EduTok videos?

# **Method and Materials**

Our research team conducted a mixed-method content analysis of 400 TikTok videos. To obtain our sample, we used the commercial website scraper Octoparse. This web-based tool collected metadata from the search result pages for 884 posts that mentioned both "EduTok" and "health." Then, we used a random digit generator to select our sample for content analysis. Post metadata included a link to the original post, the number of post views, likes, comments, and shares, and user information including follower count and video captions (see Figure 1). We collected data in April of 2022.

# **Content Coding**

Theoretical positions from the motivational theory of role modeling, the health belief model, and former literature (Chang, Wells, Slack, Rampazzo, & Gatherwright, 2022) informed the codebook (see Table 1). Our team developed the code and tested it on 50 non-sample videos. Then, two researchers independently coded 50 videos (12.5% of the sample) to establish intercoder reliability. Coding discrepancies were discussed, and changes were made to the codebook as needed. The KALPHA macro for SPSS was used to generate Krippendorff's alpha reliability estimates (Hayes & Krippendorff, 2007). In addition to our quantitative coding, we conducted a qualitative thematic analysis of content following recommendations from Braun and Clarke (2006). This process involved watching each video twice and generating thick descriptions of theoretically relevant characteristics. Notes were kept and organized in NVivo and discussed with our research team to synthesize data into themes

<sup>&</sup>lt;sup>1</sup>This research was conducted before TikTok released their API for researchers in February 2023.

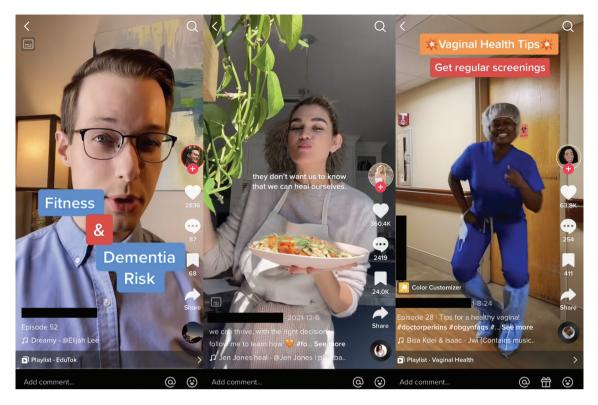


Figure 1. A screenshot from TikTok displaying three #EduTok health-themed posts

and subthemes. Considering the novelty of eHealth content on TikTok, these notes were used to evaluate and supplement our quantitative data. The thick descriptions included quotes and screenshots when relevant.

# Analytical Strategy

The presence or absence of theoretical constructs were our dichotomous independent variables. Views and interactions (also broadly referenced in social media research as reach and engagement) were our dependent variables. Social media data are non-normally distributed and subject to extreme outliers (Guidry et al., 2018), so we used nonparametric Mann-Whitney U tests to see how views and interaction scores differed based on our dichotomous predictors. For our main analyses, we combined all health topics that had fewer than 10 mentions into a subcategory called "other topics," including cardiovascular health, Covid-19, violence prevention, injury, cancer, substance abuse, among others (see Table 2). In addition to these statistical analyses, our team took a thematic analysis approach (Braun & Clarke, 2016) to analyze the thick descriptions that we noted when coding. We segmented text in our descriptions and reduced data based on emergent themes.

# Sample Characteristics

Summary statistics for videos in our sample include views (Mdn = 13400; M = 1,388,398; SD = 5,239,792), interactions (e.g., the sum of likes, comments, and shares) (Mdn = 1,291, M

= 254,340, SD = 2,442,501), likes (Mdn = 1201. M = 248,593, SD = 2,434,087), comments (Mdn = 29, M = 13,16, SD = 61,83), shares (Mdn = 35, M = 4,430, SD = 24384), and number of followers (Mdn = 82000, M = 354,354, SD = 664,990).

### Results

The first research question asked about the most prominent topics featured in EduTok posts and how audiences engage with this content. The most prominent topics mentioned in videos included mental health, diet, exercise, sexual health, and other topics (see Table 3a). Results from a series of Mann-Whitney U tests showed that videos that discussed diet, exercise, and sexual health had statistically significant higher reach than videos in which these topics were absent. Furthermore, videos that mentioned mental health or other topics gained statistically significantly less reach than posts that did not mention mental health or other topics. Regarding interactions, we found similar results, as posts that featured exercise, diet, or sexual health educational content earned higher engagement than posts that did not feature these topics. Posts that featured other health topics earned less engagement. Whereas there was no significant difference in median interactions between posts that featured mental health content and those that did not (see Table 3b).

The second research question asked about theoretical constructs present in posts and engagement with this content. Role modeling appeals were frequently used in EduTok content, with a series of Mann-Whitney U tests showing that the presence of

Table 1. Codebook categories, definitions, examples, and Cronbach's alpha values

Category	Definition	Example Content	α
Motivational Theory	of Role Modeling		
Aims to inspire	Messages that elicit motivation, encouragement, or positivity, featuring uplifting advice or elements of empowerment (Rojek & Baker, 2020).	Video footage: A male spiritual leader in Kenya talking with a female in a talk-show format.  Commentary "You know this state of mental health, depression, anxiety, and pain, is sent to reorder you, it is sent to change you. to develop you, to take you to the next stage. You cannot get to the next stage unless you have been through the most difficult and toughest time in your life When I see someone that is suffering, I say believe me, love this process."	0.835
Models behavior	An individual demonstrates or performs a specific action or pattern of actions, serving as an example for viewers to emulate or learn from (Bandura, 1977).	Video footage: Shows a woman waking up at 6:30am, exercising, making a fruit smoothy, moisturizing, and writing in a journal.  Text: "You're becoming the best version of yourself. #motivation #healthylifestylechange #thatgirl"	0.897
Reveals the possible (HBM benefits)	Highlights the potential positive outcomes or advantages associated with adopting a specific health behavior (Orji, Vassileva, & Mandryk, 2012)	Commentary: "Alright TikTok, three free ways to boost up your immune system. Number one is laughter. Strangely laughter helps boost up your Killer T cells, it helps your T Helper cells, it helps your Natural Killer T Cells, helps boost up your DHA a big antiaging hormone"	0.743
Shares personal story	Presents a personal narrative or experience related to health, typically narrated in the first person, with the intention to provide insight or education to viewers based on the individual's unique journey or perspective (Maynes, Pierce, & Laslett, 2012).	Commentary: "If you love food, this is for you. I lost 155 lbs., and I am going to help you out. Losing weight does not mean starving yourself."	0.791
Shares expert opinion	Presents the viewpoints, advice, or recommendations of an individual with signaled (i.e., username, credentials) expertise or professional qualifications in a particular health-related field. Coders should not make a judgment on the credibility of the advice that is shared, but rather how it is framed.	Video footage: A nurse talking from a pharmacy while wearing a white coat and holding up medicine.  Commentary: "Let's just say that you have the virus that we should never name come through your house what do you need in your medicine cabinet? You need Primatene mist. It's an over the counter inhaler. As long as your blood pressure and heart are ok, go get this."	0.749
Health Belief Model Prevention	Emphasizes the importance of taking proactive measures or engaging in health-promoting behaviors to reduce the risk of illness or health issues (Janz & Becker, 1984).	Commentary: "The best way to increase your cardiorespiratory fitness is to gradually increase your daily physical activity. You could get started by adding just ten to fifteen minutes per day this could be a brisk walk, jogging, dancing start small and work your way up from there"	0.792
Barriers	Describes the internal or external constraints that hinder health behavior. This construct can reference barriers to screening, treatment, or prevention.	Commentary: "The medical industry makes trillions per year off of you being sick."	0.713

(Continued)

Table 1. (Continued)

Category	Definition	Example Content	α
Severity	Videos express the severity of symptoms or negative outcomes related to a specific disease or behavior. It can include severity of symptoms, screening, treatment, or prevention.	Commentary: "Electroconvulsive therapy ECT is still the best treatment we have for depression, even better than medication, but it is an aggressive treatment. It uses electrical pulses to simulate the brain and produce seizure activity A downside to ECT because of the anesthesia and the way that your brain is stimulated, you tend to have memory loss for the time just before and after the procedure."	
Susceptibility	References how likely an individual is to be vulnerable or at risk for an illness or disease.	Commentary: "We are exposed to heavy metals in our day to day lives and these heavy metals cause symptoms such as memory issues, brain fog, and countless other symptoms. Do you drink tap water? Do you use pans in your day-to-day life?"	0.705
Self-efficacy	Provides information to enhance audiences' capabilities to organize or execute the course of action required to perform a behavior. This can include verbal persuasion referencing the ease or facilitators of behavior (Bandura, 1977).	Caption: 3 techniques for shutting down uncomfortable conversations.  Commentary: Develop statements that de-escalate the situation before you get too angry. I need to take a break. Maybe we can agree to disagree on this. The purpose of these statements is to stop a conflict that you've already participated in."	0.891
Cues to action	The video explicitly asks the viewer to take part in a behavior or action.		0.92
Discusses screening	Video provides instructions for how to obtain screening or detect an illness or disease.	Commentary: "Getting a cervical screening is essential to detecting cancer."	0.731
Encourages self-diagnosis	Video share instructions for how to detect an illness or disease.		0.744
Medical credentials present	Medical credentials are shared in the user's bio, the video caption, or the video itself. Coders should not make a judgment on the credibility of the credentials (e.g., if someone vaguely says they are a health coach, they are signaling this credential to an audience, and we are coding this framing).	A user having Dr. in their username and wearing a white coat when filming.	0.841
Research cited	Research is presented to bolster health claims.  Coders should not make a judgment on the credibility of research. Rather we are coding the framing of research.	Commentary: "According to one observational study from 2020, 83% of people who use wearable health technology said it helped increase their motivation."	1.00
Framed as debunking misinformation		Video footage: Woman is testing the acidity of water and Pedialyte using a pH test kit.  Commentary: "Are doctors keeping us sick? Why are they recommending that we drink this stuff when we are sick? It has a lot of electrolytes in it so it should be good for us but what I found out was that it is actually super acidic, and more acidity leads to disease, sickness, and inflammation. Experiment time!"	0.806

<sup>\*</sup>Health topics were coded using categorical labels for mental health, diet, sexual health, exercise, cardiovascular health, covid-19, violence prevention, injury, cancer, substance abuse, none, and other [text] ( $\alpha$  = 0.791) (Guidry et al., 2020).

role model constructs resulted in significantly higher reach and engagement compared to content without these constructs (see Table 3c). Videos that aimed to inspire, those that revealed the possible, and those that included behavioral modeling content were more engaging than posts that did not include these concepts (see Table 3d). Furthermore, videos that featured a personal testimonial earned greater reach and engagement than those that did not. However, posts that included claims of an expert opinion earned significant reach but did not earn increased engagement.

In addition to evaluating role modeling, the second research question asked about the presence of and engagement with health belief model constructs. Videos received higher reach when discussing prevention, severity, and cues to action than when these constructs were absent. Whereas no differences were found in reach for videos that discussed barriers, selfefficacy, or susceptibility. These findings are similar to social media engagement findings, with videos featuring prevention, severity, and cues to action receiving higher interaction. In addition, when videos featured self-efficacy content, they earned higher interactions than videos that did not reference this construct. Furthermore, we found that posts framed as debunking misinformation gained greater interactions than those that did not discuss misinformation. Additionally, videos that encouraged self-diagnosis, while present less frequently. earned greater reach and interactions. The data visualization in Table 4 provides an overview of reach and interaction significance ranked by content frequency (see Table 4).

In addressing the final research question, our analysis identified several key themes and subthemes within the data (see Table 5). The first theme pertained to the use of idealized frames for promoting health, often portraying the #ThatGirl TikTok trend. These videos demonstrated steps that viewers can take to achieve an idealized version of health. A notable subtheme was the aesthetic focus of the videos, which associated #ThatGirl with beauty and health by utilizing role model constructs like inspiring others, showcasing positive outcomes, and modeling healthy behavior. Additionally, the videos advocated a holistic approach to personal health, often accompanied by a strong distrust of medical professionals. For example, three of the videos include a voiceover claiming that medical professionals hide the fact that people can heal themselves, and that prescribed medications only offer temporary relief. Other videos suggested that doctors intentionally keep people sick to make a profit. Another subtheme involved the limited diversity in these videos, as most predominantly featured young, wealthy, white women with minimal representation of other demographics.

The second theme in our sample involved sharing anecdotal health advice. Individuals shared their personal health experiences to demonstrate their informal expertise, doing so in an open and honest way while speaking directly to the camera. For example, within our sample of diet-related posts, we frequently observed tips for "healing your gut." As such, when discussing thyroid issues, autoimmune diseases, weight loss, or similar concerns, individuals cited how dietary changes led to improved health. One poster's caption stated, "Healing my gut

CHANGED my life physically & mentally! Follow for gut healing tips." These stories were often linked to health coaching services or to bolster marketing natural health products. For instance, a creator in our sample said, "I learned to heal myself through natural medicine & want to help you guys do the same."

The third theme, which was closely related to the second, involved individuals highlighting online calls to action. In conventional health promotion and prevention research, incorporating essential key messages with a call to action is vital. We noticed that videos containing valuable health insights often concluded with virtual rather than tangible calls to action. For instance, a video creator appealed to their viewers with this statement: "Follow me for tips on how to prevent heart disease." This online call to action did not provide specific information on accessing reliable resources for cardiovascular disease prevention. Furthermore, the video lacked heart-healthy recommendations as its primary objective was to encourage virtual engagement. As a result, the overarching goal seemed to focus on expanding the follower base or promoting products rather than fostering behavioral adaptation or transformation.

The final emerging theme we observed in connection with the health belief model constructs pertained to the use of "research" as a credibility cue. In this study, we found instances where the concept of research was mentioned without any associated credible information or sources. For example, profiles frequently referred to "daily evidence-based health tips," but the actual evidence supporting these tips was missing. While many claims in these videos were harmless, such as "the science behind the morning routine," some posts contained exaggerated or unfounded fear appeals, like a post advising viewers against drinking water or eating at restaurants to avoid heavy metal poisoning. This theme is connected to our findings that posts emphasizing severity garnered higher interactions, often leveraging shock value and outrage as audience engagement strategies. Videos sharing individuals' medical qualifications often provided additional credibility cues. We noticed a trend of people speaking in front of peer-reviewed articles. However, our quantitative data revealed that citing research did not significantly impact post views or interactions. Health, wellness, and lifestyle coaches were also frequently featured in our sample. Yet, within our dataset, we observed that these credentials were often vague or again linked to product promotion. Overall, the themes and subthemes that we identified provide nuance into our data and supplement interpretation of the quantitative findings.

## Discussion

This research presents a comprehensive analysis of the portrayal of health-related topics and concepts in TikTok videos. Our findings show that content creators frequently used role model appeals when promoting eHealth content on the platform, while the use of formal strategies from the health belief model was less common. There is an opportunity for health professionals to leverage the theory-driven insights from this

**Table 2.** Content frequencies (N = 400)

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Category	Frequency	Percent
Health Topic		
Mental health	82	20.40%
Diet	68	17.00%
Sexual health	54	13.50%
Exercise	43	10.80%
Other Topics (frequency under $n = 10$ )		
Cardiovascular health	7	1.80%
Covid-19	7	1.80%
Violence prevention	3	.80%
Injury	3	.80%
Cancer	2	.50%
Substance abuse	2	.50%
Cerebral palsy	2	.50%
Dementia	1	.30%
Dental health	1	.30%
Toxic heavy metals	1	.30%
Arthritis	1	.30%
None	47	11.80%
Motivational Theory of Role Modeling		
Aims to inspire	148	37.00%
Models behavior	124	31.00%
Reveals the possible (HBM benefits)	120	3.00%
Shares personal story	147	36.80%
Claims expert opinion	209	52.30%
Health Belief Model		
Prevention	192	48.00%
Barriers	82	20.50%
Severity	89	22.30%
Susceptibility	85	21.30%
Self-efficacy	47	11.80%
Cues to action	181	45.40%
Discusses screening	51	12.80%
Encourages self-diagnosis	29	7.20%
Medical credentials present	133	33.30%
Research cited	24	6.00%
Framed as debunking misinformation	56	14.00%

study to enhance eHealth content creation and promotion on video-based social media platforms. To accomplish this, posts should integrate high engagement role model appeals with evidence-based information to reinforce health behavior beliefs. Moreover, health professionals need to devise new strategies to address underrepresented topics, giving priority to areas of concern that garner less reach or engagement.

Taken together, our findings revealed a lack of variety of health topics discussed in educational videos. Most of the videos that earned attention and interactions featured diet, exercise, or sexual health topics. This is understandable, given that a significant proportion of teens and young adults use TikTok (Vogels, Gelles-Watnick, & Massarat, 2022), and these young audiences may be more interested in these topics than others such as cardiovascular disease. Considering that few other topics emerged as prominent in our sample, there is an opportunity for public health organizations to address this

information disparity, especially regarding risks that youth face such as substance abuse, bullying prevention, or driver safety. Additionally, we found that videos frequently addressed mental health, but these videos earned low reach and average engagement. Future research could explore strategies to improve the effectiveness of such content. In addition, health professionals and experts who focus on nutrition, exercise, and sexual health should consider our findings that TikTok audiences may be especially receptive to this content.

Regarding our theoretical findings, our data suggest that role model appeals were prominent on TikTok, and these appeals were highly engaged with. A significant number of videos in our sample featured inspirational appeals, positive outcomes, and steps for modeling behavior (Morgenroth, Ryan, & Peters, 2015). Our findings suggest the importance of these theoretical constructs, however our data also support former research (Bavikatty, 2022; Sweeney-Romero, 2022) that suggests health

Table 3. Mann Whitney U results for topics and theoretical constructs

	Median Reach Topic Present	Median Reach Topic Absent	Mann-Whitney U	p-valu
		•		
Diet	505350.00	4962.00	23849.00	0.00*
Exercise	272150.00	7951.00	16674.00	0.00*
Sexual health	57500.00	11500.00	11453.00	0.01*
Mental health	6230.00	23450.00	12930.00	0.02*
Other	3537.50	38250.00	10382.00	0.00*
B) Median Interaction Scores				_
	Median Interactions	Median Interactions	Mann-Whitney U	p-value
	Topic Present	Topic Absent		
Diet	58627.00	425.00	23668.00	0.00*
Exercise	34702.00	699.50	16543.00	0.00*
sexual health	3430.00	965.00	11371.50	0.02*
Mental health	523.50	1970.00	13614.00	0.08
Other	264.50	3220.00	10740.00	0.00*
C) Median Reach for the Pres	sence or Absence of Theoreti	cal Constructs		
	Median Reach	Median Reach	Mann-Whitney $U$	p-value
	Topic Present	Topic Absent		
Motivational Theory of Role Me	odeling			
Aims to inspire	115700.00	7732.00	22374.00	0.00*
Models behavior	179500.00	6656.50	22308.50	0.00*
Reveals possible benefits	112600.00	8209.00	20089.50	0.00*
Shares personal story	74300.00	10200.00	20821.00	0.04*
Claims expert opinion	32600.00	6666.00	22735.50	0.01*
Health Belief Model				
Prevention	39200.00	8209.00	22975.00	0.00*
Barriers	7662.50	17000.00	12573.00	0.61
Severity	72200.00	10600.00	16848.50	0.00*
Susceptibility	22100.00	13150.00	14071.50	0.47
Self-efficacy	4227.00	880.00	9681.50	0.63
Cues to action	54800.00	5130.00	24267.50	0.00*
Discusses screening	35300.00	11150.00	9974.00	0.16
Encourages self-diagnosis	353600.00	11400.00	6755.00	0.02*
Medical credentials present	32600.00	9719.00	19545.50	0.08
Research cited	12019.00	13200.00	4018.00	0.36
Debunking misinformation	73400.00	10200.00	11797.50	0.07
D) Median Interaction Scores			11/9/.30	0.07
D) Median Interaction Scores	Median Interactions	Median Interactions	Mann-Whitney U	p-value
	Topic Present	Topic Absent	Mann-w nuney O	p-vaiue
Motivational Theory of Role Mo		Topic Aoseni		
Aims to inspire	14234.00	562.00	22882.00	0.00*
Models behavior	17611.00	527.00	22041.50	0.00*
Reveals the possible	11109.00	651.50	22882.00	0.00*
hares personal story	5910.50	824.00	21100.50	0.00*
				0.03
Claims expert opinion	2404.00	517.00	22109.50	0.06
Health Belief Model	2407.00	522.50	22046.50	0.01*
revention	2497.00	523.50	22946.50	0.01*
Barriers	562.00	1625.00	12696.50	0.71
leverity	3632.00	792.00	16688.50	0.00*
usceptibility	2005.00	1095.00	13831.00	0.63
Self-efficacy	4731.00	936.00	9934.50	0.02*
Cues to action	4322.00	406.00	24665.50	0.00*
Discusses screening	3384.00	1013.50	9718.50	0.29
Encourages self-diagnosis	22045.00	1013.50	6559.00	0.05*
Medical credentials present	2005.00	876.50	18860.00	0.28
Research cited	1122.50	1294.00	4146.00	0.51
Debunking	5049.50	767.00	11516.50	0.02*

<sup>\*</sup>p < .05, with the direction of significance bolded

**Table 4.** High, average, and low topic reach and interactions sorted by frequency % (N = 400)

igh Re	ach Topics	High Intera	action Topics
2.30%	Claims expert opinion	48.00%	Prevention
48.00%	Prevention	45.40%	Cues to action
45.40%	Cues to action	37.00%	Aims to inspire
37.00%	Aims to inspire	36.80%	Shares personal story
36.80%	Shares personal story	31.00%	Models behavior
31.00%	Models behavior	30.00%	Reveals the possible
30.00%	Reveals the possible	28.00%	Video topic: Diet
28.00%	Video topic: Diet	22.30%	Severity
22.30%	Severity	20.50%	Video topic: Exercise
20.50%	Video topic: Exercise	14.00%	Debunking misinformation
13.80%	Video topic: Sexual health	13.80%	Video topic: Sexual health
7.20%	Encourages self-diagnosis	11.80%	Self-efficacy
		7.20%	Encourages self-diagnosis
	Reach Topics		teraction Topics
	Medical credentials present	52.30%	Claims expert opinion
21.30%		33.30%	Medical credentials present
	Barriers	26.00%	Video topic: Mental health
14.00%	S	21.30%	Susceptibility
12.80%	٥	20.50%	Barriers
11.80%	Self-efficacy	12.80%	Discusses screening
6.00%	Research cited	6.00%	Research cited
Low Re	ach Topics	Low Intera	ction Topics
26.50%	Video topic: Other	26.50%	Video topic: Other
26.00%	, .		
26.00%	Video topic: Mental health  Moderate frequency, high impact Low frequency, high impact Moderate frequency, average impact		
	Low frequency, average impact		

**Table 5.** Summary of qualitative themes and subthemes

Theme: Idealizing the #ThatGirl lifestyle
Subtheme: Aesthetic-drive content
Subtheme: Emphasis on holistic wellness
Subtheme: Limited diversity in representation
Theme: Sharing anecdotal health advice
Subtheme: Confessional personal experiences
Subtheme: Implicit product promotion
Theme: Emphasizing digital calls to action
Subtheme: Encouraging virtual engagement

Subtheme: Focusing on awareness over behavior change **Theme**: Leveraging "research" as a credibility cue

Subtheme: Misrepresenting research findings

Subtheme: Exploiting fear or outrage for engagement

professionals should consider potential negative health outcomes associated with glamourized motivational wellness content, such as #ThatGirl videos. Consistent with our findings on role models, content creators in our sample frequently positioned themselves as lay experts to promote products and

encourage others to like, share, and follow their content for diet and exercise advice. Consequently, future research should examine how the utilization of beauty influencers to promote health impacts audience perceptions, particularly young women's overall understanding of health and wellness.

Considering these findings, future researchers should further evaluate the effectiveness of role model appeals on TikTok using Morgenroth et al.'s (2015) motivational theory of role modeling. The use of this strategy can also be explored in different health and strategic communication contexts. This theory proposes key mechanisms for the positive reception of role model appeals, including behavior desirability, attainability, and level of success. Audiences, especially young women, may view role models who promote #ThatGirl to be desirable. This is an assessment that we can make based on engagement with this content in our sample. However, these idealized portrayals may also be seen as unattainable. Research suggests that exposure to unattainable role models can have a self-deflating effect on role aspirants (Hoyt, 2013). As such, future research is needed to evaluate how audiences meaningfully evaluate and engage with this content.

Our analysis of health belief model constructs suggests that audiences engaged with content related to efficacy, but such videos had limited reach. This finding is notable, given that self-efficacy is a well-established predictor of behavior adoption, maintenance, or cessation (Bandura, 2001; Janz & Becker, 1984). There is an opportunity for health professionals who have large audiences to include efficacy-related content in their videos, which may positively impact content engagement, while also providing individuals with information necessary to enhance perceptions of behavior attainability. Furthermore, the health belief model also emphasizes the importance of consistent information on benefits and barriers in health messages to equip individuals with the necessary tools to address health challenges. Although benefits were widely mentioned and received high interactions, barriers were mostly absent from the posts. This observation offers valuable insights for health professionals on the need for more comprehensive information.

Our quantitative and qualitative findings offer insights into the health belief construct of severity. We observed that content related to illness and disease severity was frequently mentioned, promoted, and engaged with. The tone of such content often employed outrage to boost post virality. Given that self-efficacy-related content did not exhibit a statistically significant high reach, this suggests that individuals may be exposed to negatively framed information, without being equipped with the confidence or tools to address these issues. Future research should continue to investigate how emotions such as outrage, shock, and disgust are utilized to disseminate health content in a viral context, as well as potential solutions to address this concern.

In addition, we identified high reach and engagement of content that promoted self-diagnosis. These findings support former research on how people use TikTok to share diagnostic information about functional tics (Hull & Parnes, 2021). Data in our sample did not reference functional tics, rather self-diagnosis information was present for a myriad of issues including digestive problems, depression and anxiety, and sexual and reproductive health issues. These issues are especially concerning considering our findings that self-efficacy appeals and concrete cues to action were sparse. Taken together, this study provides actionable insights into how health professionals can address these concerns and engage with TikTok users in a credible and informative manner.

#### Limitations

One limitation is that our search for this study was limited to the English language terms "EduTok" and "health." Our research team included scholars from the United States, Bangladesh, and China. We were unable to code videos in languages that were beyond our translation capabilities. It would be insightful to explore how health topics and content features are present in different languages. Furthermore, numerous countries have imposed full or partial bans on TikTok usage (Chan, 2023). If federal or state agencies, such as public health departments, encounter restrictions in posting on the platform in the future, it will be crucial to consider the implications for

health information credibility and alternative avenues for disseminating accurate health content.

#### Conclusion

In this study, we took an innovative approach to eHealth promotion by evaluating theory-driven constructs present in TikTok videos. Specifically, we show how the motivational theory of role modeling (Morgenroth, Ryan, & Peters, 2015) and the health belief model (Janz & Becker, 1984) can be integrative tools for uncovering best practices for reaching and engaging social media audiences. In sum, content creators are using TikTok to inspire others, model behavior, and reveal the possible. Yet this content often lacks necessary evidencebased claims and efficacy content to adequately promote behavior change. The EduTok videos in our sample received high reach and interactions, especially when content featured diet, exercise, and sexual health topics. However, many salient health topics were ignored or misrepresented. Young people are increasingly turning to social media platforms such as TikTok to seek and share health information (Herrick. Hallward, & Duncan, 2021). Our results critically confirm the need for health professionals to engage with audiences using short form videos on social media. The results from this study provide a starting point for how to create engaging, inspiring, educational, and theory-driven content.

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