

Scrolling for Health

An exploratory content analysis of healthy food messages on social media

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Samenvatting

Scrollen voor gezondheid: een verkennende inhoudsanalyse van berichten over gezonde voeding op sociale media

Deze studie onderzoekt hoe gezondheidspromotors duurzame, gezonde voeding communiceren op sociale media. Een analyse van 545 TikTok-video's toont aan dat diëtisten vaker en met meer betrokkenheid posten dan gezondheidsorganisaties. Verschillende strategieën worden gebruikt, zoals sociale normen en emotionele en rationele *appeals*. Praktische implicaties en aanbevelingen voor toekomstig onderzoek worden besproken.

Abstract

The aim of this study is to investigate how health promoters communicate healthy food messages on social media. An exploratory content analysis of 545 healthy food videos, gathered from twenty social media (TikTok) health accounts (ten health organizations and initiatives and ten registered dietitians), was performed. The analysis demonstrated that the social media content of registered dietitians was higher in volume and engagement, compared to the content of health organizations and initiatives. Health

promoters used a variety of communication strategies in their healthy food promotion videos, including social norms, call-to-action, as well as rational and emotional appeals. Our findings underscore the need for health promoters, particularly health organizations and initiatives, to enhance their presence on emerging social media platforms and to strategically integrate entertaining, normative, and emotionally resonant content – such as humor, warmth, and fear appeals – to maximize engagement and promote healthier eating behaviors.

Keywords: social media, health communication, health organizations, dietitians, food communication

Introduction

Effective communication and promotion of fruits, vegetables, and other primarily healthy food (i.e., belonging to the five main nutritious food groups: fruits, vegetables, grains, protein foods, and dairy and alternatives; hereinafter referred to as ‘core food’) is crucial in empowering individuals to make healthier food choices. An important channel for such form of health communication is social media which provides a free platform of potentially wide reach (Rajshiri & Malloy, 2023). However, evidence demonstrates that social media includes little core food content and is instead saturated with messages promoting food that is low in nutrients and dense in energy, hereinafter referred to as ‘non-core food’ (Holmberg et al., 2016). For example, a diary study by Qutteina et al. (2019) found that adolescents are mostly exposed to (non-core) food messages by peers, influencers, and brands with hardly any exposure to core food messages by health organizations and initiatives. This is not surprising considering that marketers have taken note of the eruption of social media use in the last decade and quickly responded by increasing their spending on social media (non-core) food marketing, often replacing funds allocated to traditional media marketing (Interactive Advertising Bureau, 2021). Such massive marketing spending contributes to highly mediated obesogenic environments that are saturated with non-core food (marketed) messages promoting the consumption of fried food, sugared drinks, and other foods that contribute to an unhealthy lifestyle and excess eating (Holmberg et al., 2016; Qutteina et al., 2019).

The high prevalence of non-core food coupled with the low presence of core food on social media, which is also mirrored in the overall high figures of

consumption of non-core food and low figures of consumption of fruits, vegetables, and other core food (Global Food Research Program, 2022), highlights the need for health promoters to take an active role in core food promotion on social media. It is important that this role is guided by scientific evidence regarding the most efficient communication strategies to employ. To achieve this, we first need to have a better understanding of the status of health communication (particularly of core food) on social media. As such, the aim of this exploratory content analysis study is to investigate how health professionals promote core food messages on social media. This insight is an important first step in building our understanding of how to improve and maximize the promotion of core food on social media.

Health promoters' presence on social media is relatively limited

Certified health professionals, organizations and initiatives – hereinafter referred to as health promoters – who are recognized as credible and authoritative sources in the health domain due to their institutional backing, evidence-based practices, and accountability mechanisms, have taken note of the popularity of social media and its value in reaching individuals and adopted social media as a platform to communicate health and food messages (Rajshiri & Malloy, 2023). The scarce literature assessing how health promoters communicate core food messages on social media, particularly on relatively young platforms such as TikTok (Meriç & Çakıcı, 2024), suggests that their social media use is superficial compared to that of food brands (Capurro et al., 2014; Kite et al., 2016; Klassen et al., 2018). Health promoters have a relatively small presence on social media, particularly on relatively young social media platforms. For example, Klassen et al. (2018) found health organizations are less present on Instagram, which was at the time considered relatively young, as compared to the presence of food and lifestyle brands. Furthermore, health promoters, particularly organizations and initiatives, appear to post social media content that is less engaging (Kite et al., 2016) and may not fully leverage the interactive features of social media platforms (Capurro et al., 2014). Such limited social media utilization is also reflected in social media users' low exposure to core food posts by health organizations and professionals (Qutteina et al., 2019). While this may partly relate to the identity-driven appeal of commercial brands, particularly among adolescents, it also highlights the comparatively low visibility and engagement strategies of health professionals on these platforms.

The health promoters' advantage in food messaging

Despite their limited use of social media, health promoters are at an advantage when communicating a food message on these platforms. They are perceived as a credible source of information (Borah & Xiao, 2018; Jenkins et al., 2020) which, according to the Persuasion/Communication model, will facilitate in increasing the persuasiveness of the messages they communicate (McGuire, 1989). The source of the message, as an element in persuasion, relates to a common strategy used in communication to persuade a recipient in the message. For instance, food marketers commonly refer to endorsers, such as celebrities and social media influencers, to market their food products. Source attributes, such as credibility, attractiveness, and familiarity, play a role in how well the message is received and to what extent the recipient will be persuaded by this message (Schimmelpfennig & Hunt, 2020). In addition to the credibility source attribute that health promoters manifest, some health professionals, such as dietitians, also take the role of a social media influencer. In general, social media influencers are community leaders who manifest as peers and brand marketers at the same time (Balaban & Mustatea, 2019). Consumers often develop parasocial relationships with social media influencers, viewing them as peers (Yuan & Lou, 2020). In contrast to the one-way communication typically found between health organizations and their audiences, influencers foster a two-way interaction, regularly engaging with their followers on social media platforms. (Colliander & Dahlén, 2011; Yuan & Lou, 2020). This combination of attributes could exacerbate the impact of dietitian influencers on these consumers as compared to health organizations (Balaban & Mustatea, 2019; McGuire, 1989). However, the message source is not the only determinant of the persuasiveness of the message, and it is certainly not the only strategy used in non-core food marketing on social media.

The importance of message characteristics

In addition to the message source, the Communication/Persuasion Model identifies several input factors crucial for determining a message's persuasiveness. These include the communication channel (e.g., television, social media), the characteristics of the receiver (e.g., adolescent, adult, child), the context of communication (e.g., noise), and the specific traits of the message (McGuire, 1989). Among these message traits, social norms, call-to-action as well as rational and emotional appeals play significant roles. Call-to-action, where the user is encouraged to engage with the content by commenting, liking, etc., is common on social media, particularly among brands (Kite et al., 2016). Similarly, appeals are commonly employed in communication

strategies. While health professionals often utilize rational or fear appeals in health communication (Probst & Peng, 2019; Zhang et al., 2017), these strategies alone may not suffice. Research by Rietveld and colleagues (2020) indicates that emotional appeals, with varying levels of valence and arousal, are much more effective in driving user engagement on social media than rational appeals alone.

A prominent communication strategy in the persuasion process, particularly on social media, is the use of social norms, whether as a deliberate communication strategy or as an intuitive, gut-feeling approach to influence. Social norms are dynamic phenomena that both shape and are shaped by human behavior (Rimal & Lapinski, 2015). Social media platforms frequently depict social norm-based messages surrounding food choices (Qutteina et al., 2019), which are significant in persuading users to change their perceived norms, attitudes, and behaviors (Beaudoin, 2014). These norms can influence both injunctive norms, shaping perceptions of which foods are acceptable or desirable, and descriptive norms, affecting beliefs about the popularity of certain food items. For instance, the portrayal of non-core foods in excessive quantities reflects and reinforces social norms in the social media food landscape. These messages often contextualize such foods by associating them with social situations such as eating out with friends, celebrations, spending time with family, etc. (Holmberg et al., 2016; Qutteina et al., 2019). This interplay between social norms and food communication can effectively persuade individuals to modify their eating behaviors in alignment with perceived group expectations.

Given the diversity of communication strategies available for health promoters to utilize in their social media communication, the first research question of this exploratory study is: *What communication strategies do health promoters use in their social media core food messages?* The communication strategies investigated include social norms, emotional appeals (warmth, humor, fear, and music), and rational appeals. Given that research shows that people engage with food media for various reasons, including gaining knowledge and seeking enjoyment (Cuykx et al., 2023; Teunissen et al., 2024), therefore, this study will also examine the themes of the food messages, with a particular focus on education, entertainment, and recipe dissemination.

To have a better understanding of the effectiveness of the communication strategies employed by health promoters, the second research question the study will address is: *Which of these communication strategies are associated*

with higher user engagement on social media? Engagement metrics, such as likes, saves, shares and comments, are an indicator of a user's response to a social media message. While user engagement will not directly measure whether recipients have adopted healthier eating habits, higher engagement can serve as indication of higher message reach, suggesting that more users have been exposed to or noticed the message (Kite et al., 2016; Trunfio & Rossi, 2021). Additionally, engagement metrics can act as normative cues; for instance, a post receiving more likes may be perceived as the norm or socially desirable behavior (Sun et al., 2025).

In this research, we differentiate between two distinct types of health promoters; 1. health organizations and initiatives as one group, and 2. dietitians, who play a dual role as influencers and health professionals, as another separate group. This study will focus on the TikTok platform: a social network site that emerged in the past few years and skyrocketed in popularity, particularly among vulnerable populations such as adolescents (Statista, 2024).

Methods

To investigate how health promoters communicate social media core food messages, this study employed a retrospective exploratory content analysis. Using a mixed-methods exploratory design, public core food posts shared by health promoters on TikTok were collected and analyzed. The study protocol was reviewed and approved by the institutional review board of the authors' affiliated institution.

Selection of the health promoters' accounts

This study employed purposive sampling to identify and select twenty TikTok accounts of health promoters who actively engage in communicating healthy food messages on the platform. In this study, health promoters included sources with nutrition-specific expertise, including individual registered dietitians, as well as health organizations and initiatives actively engaged in nutrition promotion. This definition excluded social media influencers without formal nutrition credentials. The accounts were identified using the platform's built-in search function and by selecting the top accounts in the search. Given the small presence of health organizations and initiatives on TikTok, supplementary searches via the Google search engine were conducted to identify relevant organizations and campaigns.

These entities were subsequently assessed for their presence and activity on the TikTok platform. The overall search resulted in ten accounts owned by health organizations (i.e., the World Cancer Research Fund, the World Food Program, the Food and Agriculture Organization of the United Nations, the American Heart Association, and Veganuary) or initiatives (i.e., ProVeg, BiteBack, Meat Free Monday, Live Lighter, and Try for 5), and another ten accounts owned by individual registered dietitians (including 8 females and 2 males from Australia, Canada, the United Kingdom and the United States of America). The credentials of the included registered dietitians were verified using publicly available certificates issued by the professional regulatory body of each dietitian's country.

Data collection

In April 2023, all videos ($n=950$) posted during a four-month period (January–April 2023) were screened and only those that met the inclusion and exclusion criteria were included for analysis ($n=545$). The inclusion criteria included TikTok videos promoting core food consumption to the general public rather than specific subgroups (e.g., individuals with a particular disease). Core food messages were identified based on the World Health Organization's (2023) nutrient profiling guide. Non-English videos specific to weight management, sports nutrition, and health disorders (e.g., eating disorders, diabetes, hormonal imbalance, etc.) were excluded from this study.

Codebook development

An initial codebook was developed based on a review of the literature and piloted with a subsample of twenty TikTok videos. Following the development of this preliminary version, four trained coders independently watched and coded the sample videos. The coding process was iterative, whereby codes were continuously refined and developed through the ongoing revisitation of the video posts. This process continued until a finalized version of the codebook was established (see Table 1).

The videos were coded for user engagement where the number of likes, comments, saves, and shares were recorded. The video messages were also coded for the communication strategy used including message theme (i.e., education, entertainment, and recipes) and persuasion process (i.e., rational appeal, emotional appeal, and social norms, call-for-action), see Table 1. The categories coded under emotional appeal included categories commonly investigated in the health communication literature including humor, fear, warmth and music appeals (Bernritter et al., 2022; Elliott et al., 2025, and Kite et al., 2016).

Rational appeals were not subdivided into specific subcategories, as many of these, such as those identified by Dolan et al. (2019), are closely aligned with commercial social media content and less relevant to the noncommercial health communication focus in the present study. Additionally, videos featuring spoken words were coded as inclusive of 'oral communication'. Comparisons were then made between the coders to detect any variations in coding. Any discrepancies were resolved among the research team.

Table 1. Overview of the codes used in the exploratory content analysis study

Theme	
Educational	Provide nutrition and health information to improve nutrition and food literacy (particularly skills and awareness), excluding recipe content.
Entertainment	Amuse, engage, or provide enjoyment such as dancing, role play, sketches, and clips of everyday life and lifestyle.
Recipe	Provide instructions on how to prepare a meal or snack.
Communication and persuasion strategies	
Norms	A video portraying norms of conduct, habits or experiences that convey what is considered the 'normal' intake of core food. This includes videos portraying food trends, approvals, preference and behaviors (intake, choice, and purchase) such as 'what I eat in a day' as well as posts depicting food as part of celebrations, social gatherings, fun activities, time with friends and family.
Warmth appeal	Evoking positive emotions such as empathy, affection, or nostalgia, features caring, supportive, and approachable tones; and incorporating warm, inviting non-verbal cues, such as smiling faces.
Humor appeal	Incorporating humor such as jokes, puns, or witty language, or depicting funny or exaggerated situations.
Fear appeal	Attempting to drive fear to influence behavior.
Music appeal	Depicting music in the video.
Informational appeal	Providing information on core food, nutrition and other key information to promote healthier eating habits.
Call-to-action	Prompting further engagement on social media by encouraging users to follow, sign up, check links, comment, etc.

Analysis

Codes were organized into a matrix and examined for frequencies and recurring patterns and themes. Thematic content analysis was used to identify patterns between the different themes. Statistical analysis was used to determine category descriptives and Wilcoxon Rank Sum tests and chi-square tests were utilized to compare user engagement across videos of different health promoters and communication strategies. Separate negative binomial regression models were developed to examine differences in engagement

across health promoter types, themes, and communication strategies, while controlling for the number of followers per social media account.

Findings

Of the 545 TikTok videos included in the sample, the majority were by influencer dietitians ($n = 381$) and only 164 videos were by health organizations and initiatives, $\chi^2(1, N = 545) = 86.40, p < .001$.

User engagement with the videos posted by health promoters

The videos of dietitians (particularly female dietitians) garnered significantly higher engagement as compared to those of health organizations and initiatives (see Table 2). Dietitians had significantly higher likes ($W = 3510, p < .001$), comments ($W = 6469, p < .001$), saves ($W = 3314.5, p < .001$), and shares ($W = 9612.5, p < .001$) as compared to health initiatives and organizations. Controlling for the number of followers in a negative binomial regression did not change the results (see Table 3).

Table 2. The engagement metrics of core food videos by health promoters

Health professionals	Likes Median ; Mean	Comments Median ; Mean	Saves Median ; Mean	Shares Median ; Mean
Total Sample	779.00 ; 7,542.00	9.00 ; 70.53	41.00 ; 857.30	8.00 ; 267.20
Registered dietitians (Total)	2,483.00 ; 10,707.81	23.00 ; 99.53	121.00 ; 1,223.18	21.00 ; 380.30
Female	2,690.00 ; 10,942.00	24.00 ; 101.60	130.00 ; 1,254.00	22.00 ; 390.30
Male	90.00 ; 2,017.80	4.00 ; 21.50	5.00 ; 74.10	1.00 ; 7.70
Health organizations & initiatives	38.50 ; 186.65	1.00 ; 3.15	2.00 ; 7.45	1.00 ; 4.32

Oral communication was utilized in most of the videos ($n = 400$); however, it was more present in the dietitians' videos (85%, $n = 323$) as compared to the health organizations and initiatives (47%, $n = 77$), $\chi^2(1, N = 545) = 92.14, p < .001$. The videos can be categorized under three main themes: education (50%, $n = 273$), entertainment (43%, $n = 237$), and recipes (28%, $n = 150$). The content of health organizations and initiatives was mostly focused on education (65%, $n = 107$), including videos conveying knowledge to help users identify core food options. They had a smaller focus on entertainment

(34%, $n = 56$) or recipes (18%, $n = 30$). On the other hand, dietitians more evenly focused on entertainment (48%, $n = 181$) and educational (44%, $n = 166$) content, and slightly less on recipes (31%, $n = 120$). Their entertainment-themed videos included dancing, sketches, and lifestyle content, such as daily eating habits and shopping experiences as dietitians. These themes were often intertwined with educational videos that provided guidance on achieving a healthy diet and making informed food choices.

Negative binomial regression analysis revealed significant differences in user engagement across the various themes, whereby entertainment themed videos had the strongest engagement with significantly higher likelihood of receiving likes (coefficient = 1.10, $p < .001$), and comments (coefficient = 0.67, $p < .001$) as compared to education and recipe themes (see Table 3). However, video posts of recipes were significantly more likely to be saved (coefficient = 1.46, $p < .001$) or shared (coefficient = 1.87, $p < .001$), as compared to education or entertainment themed videos.

Persuasive communication strategies utilized in the social media messages of health promoters

Health promoter's portrayal of normative messages on social media

Regarding the persuasive communication strategies, the majority of analyzed videos ($n = 415$) depicted norms surrounding food, with these norms significantly more prominently featured in content from dietitians (83%, $n = 318$) than from health organizations (59%, $n = 97$), $\chi^2(1, N = 545) = 37.59, p < .001$ (see Table 4). Health promoters posted messages depicting norms in various forms, with the largest focus on depicting eating habits and behaviors (71%, $n = 296$). For instance, depictions of one's own eating behaviors comprised 52% ($n = 197$) of social media content shared by dietitians, while health organizations contributed more modestly, representing around 31% ($n = 51$) of similar content. Expressing approvals of food, such as liking, loving, or favoring particular foods, also emerged as a key theme, comprising 23% ($n = 96$) of the total content, with dietitians depicting this more frequently (27%, $n = 86$) compared to health organizations (10%, $n = 10$). Less commonly depicted norms included trends (4%, $n = 18$) and social interactions around food, such as time spent with friends and family (5%, $n = 19$).

Despite being less frequently used by health organizations, norm-based messaging significantly predicted higher engagement for this group as shown in moderated negative binomial regression models (see Appendix).

Table 3. Negative binomial regression estimates showing engagement differences across health promoters, message themes, and communication persuasion strategies, based on three separate models (healthy promoter type, message theme, and communication persuasion strategy) for each engagement indicator, while controlling for number of followers

Models	Likes			Comments			Saves			Shares		
	β	CI	Ref	β	CI	Ref	β	CI	Ref	β	CI	Ref
Health promoter type												
Health Organizations & initiatives	Ref	[3.37, 3.94]	Ref	[3.04, 3.64]	[4.03, 4.66]	Ref	[3.42, 4.23]					
Registered Dietitians	3.66***		3.35***			4.35***			3.83***			
Theme												
Entertainment	1.10***	[0.73, 1.48]	0.67***	[0.29, 1.05]	[0.46, 1.29]	0.87***	[1.06, 2.01]		1.54***			
Education	0.46*	[0.05, 0.87]	-0.34	[-0.75, 0.07]	[0.03, 0.94]	0.49*	[0.69, 1.72]		1.21***			
Recipe	0.49*	[0.02, 0.95]	-0.56*	[-1.03, -0.08]	[0.94, 1.98]	1.46***	[1.28, 2.46]		1.87***			
Communication persuasion strategy												
Norms	0.74***	[0.39, 1.09]	0.70***	[0.35, 1.04]	[0.38, 1.17]	0.77***	[-0.05, 0.86]		0.40			
Humor appeal	1.35***	[1.02, 1.68]	1.07***	[0.75, 1.40]	[0.58, 1.33]	0.96***	[0.79, 1.65]		1.22***			
Warmth appeal	1.02***	[0.69, 1.34]	0.34*	[0.02, 0.66]	[1.02, 1.76]	1.39***	[1.05, 1.90]		1.48***			
Music appeal	-0.59***	[-0.88, -0.30]	-0.81***	[-1.10, -0.53]	[-1.01, -0.36]	-0.69***	[-0.96, -0.20]		-0.58**			
Fear appeal	1.19***	[0.55, 1.83]	1.38***	[0.75, 2.00]	[0.34, 1.78]	1.06**	[0.48, 2.14]		1.31**			
Call-to-action	0.26	[-0.03, 0.55]	0.28	[-0.01, 0.56]	[-0.33, 0.32]	-0.01	[-0.22, 0.53]		0.16			
Informational appeal	-0.92***	[-1.37, -0.46]	-1.30***	[-1.74, -0.85]	[-0.73, 0.29]	-0.22	[-1.29, -0.11]		-0.70*			

* $p < .05$, ** $p < .01$; *** $p < .001$

Different utilization of emotional and rational appeals among health promoters

Among emotional appeals, the use of warmth appeal was the most prevalent as found in 68% of the videos. This was particularly evident among dietitians (76%, $n = 288$) whose messages frequently featured a conversational and warm tone. These videos often depicted the dietitian engaging directly with the audience through verbal (e.g., discussing family) and/or nonverbal cues (e.g., smiling and maintaining friendly eye contact). Such videos seemed to have a significantly higher likelihood of engagement as compared to videos that did not employ this appeal (see Table 3). When including the type of health promoter as a moderator in the model, the likelihood of saves and shares is significantly higher when warmth appeal is paired with a post by a registered dietitian as compared to health organizations and initiatives (coefficient = 1.548, and coefficient = 1.788, $p < .001$) (see Appendix for more details).

Table 4. The frequency and percentage of communication persuasion strategies depicted in the health promoters' TikTok videos, with chi-square comparisons across the types of health promoters

Communication persuasion strategy	Health organizations & initiatives % ($n = 164$)	Registered dietitians % ($n = 381$)	χ^2
Norms	59% (97)	83% (318)	37.59***
Humor appeal	16% (26)	31% (118)	12.71***
Warmth appeal	49% (81)	76% (288)	34.81***
Music appeal	84% (138)	34% (128)	115.24***
Fear appeal	9% (14)	4% (14)	4.61*
Call-to-action	37% (60)	36% (137)	0.01
Informational appeal	90% (148)	88% (336)	0.30

* $p < .05$; *** $p < .001$

The use of music appeal was most common among health organizations and initiatives (84%, $n = 138$) where their food messages heavily relied on music, often without incorporating oral communication or featuring individuals engaging in conversational dialogue, as was common in dietitians' videos. The inclusion of music appeal was less common among dietitians as it was only depicted in 34% ($n = 128$) of their videos (see Table 4).

The use of humor appeal was evident among health promoters as 26% of the video posts ($n = 144$) depicted humorous content, while only 5% ($n = 28$) of the

messages depicted fear appeal. Both appeals had a significantly higher likelihood of engagement, particularly in terms of likes and comments, where they had the highest coefficients in the models compared to other communication strategies (see Table 3). To explore the moderating role of type of health promoters in the relationship between persuasion communication strategies and engagement, we examined interaction effects between strategy type and promoter type. The type of health promoter significantly moderated the relationship between both humor and fear appeals and engagement outcomes. Specifically, humorous posts by dietitians were associated with significantly higher predicted engagement – likes (coefficient = 1.253, $p < .001$), comments (coefficient = 1.299, $p = .001$), saves (coefficient = 1.780, $p < .001$), and shares (coefficient = 2.265, $p < .001$) – compared to humorous posts by health organizations and initiatives; see Appendix). Similarly, the use of fear appeal by dietitians demonstrated a significantly higher likelihood of comments (1.565, $p = .007$), saves (1.825, $p = .004$), and shares (1.761, $p = .024$) compared to health organizations and initiatives (see Appendix).

The majority of the videos posted by health promoters (85%, $n = 464$) combined the use of emotional appeal with informational appeal where the video focused on providing information on core foods and healthy diets. Nonetheless, the use of informational appeal seemed to have a significantly lower likelihood of engagement. Similarly, calls to action (36%, $n = 197$) – where videos included messages encouraging users to engage with the social media account or content (e.g., ‘follow for more’ or posing open-ended questions to prompt responses in the comments) – were not significantly associated with engagement. However, the health promoter type was found to moderate this relationship, such that the use of calls to action paired with posts by dietitians had a significantly higher likelihood of likes (0.994, $p < .001$), comments (0.641, $p = .027$), saves (0.898, $p = .004$), and shares (1.098, $p = .004$).

Discussion

This study aimed to investigate how health promoters promote core food messages on social media. We found that the communication of core food messages varies between different health promoters. Our findings contribute to existing research and underscore that the use of social media by health organizations and initiatives is at its infancy, which is in contrast to the highly advanced use of social media by influencers and the food industry

(Klassen et al., 2018). The distinction in the number of social media health organizations' vs. dietitians' posts included in this study reflects the large absence of health organizations and initiatives from the social media scene, particularly a relevantly young social media scene, which is heavily popular among youngsters, such as TikTok. Furthermore, although the study only included ten organizations and initiatives, the difficulty encountered in finding even this small sample of active TikTok accounts by health organizations and initiatives – and the low number of posts available on these accounts – highlights the scarcity of health organizations' presence on this social platform. This finding aligns with evidence from previous research that finds health organizations use very little of the communication potential available to them on social media (Capurro et al., 2014; Klassen et al., 2018; Kite et al., 2016). Nonetheless, the health organizations and initiatives selected for this sample could be viewed as more advanced in their social media use as compared to the average health organization and initiative. This is evident in their use of a relatively new and highly popular social media platform, particularly among younger demographics. As such, this could explain their incorporation of social norms and some emotional appeals at comparable levels to those of the dietitians who also act as social media influencers. As for influencer dietitians, their messages encompassed a variety of communication strategies, including the incorporation of entertaining content, emotional appeals, and social norms, which are similar to the social media communication strategies used by other social media influencers (Barta et al., 2023; Pfender et al., 2023).

The study highlights three primary themes of the social media video posts created by health promoters: education, entertainment, and recipes. The prominence of educational content highlights the critical emphasis placed on disseminating health information, particularly among health organizations and initiatives that predominantly utilize this type of messaging. However, the engagement metrics present a compelling narrative regarding the effectiveness of these content types. Educational content is associated with markedly lower levels of engagement compared to entertainment and recipe-based content. These findings suggest that while education is a priority for health organizations, it may not resonate as strongly with audiences. This is also evident in previous research that demonstrates that users seek social media food content for both entertainment and educational purposes (Pember et al., 2018) with some scholars placing particular emphasis on entertainment content (De Backer & Hudders, 2016). On the other hand, dietitians appeared to recognize these user preferences, as they

frequently framed their messages, including educational content, within entertainment-focused themes.

The majority of core food video posts, particularly those by influencer dietitians, predominantly utilized social norm-based messaging. Although this strategy was not associated with a comparable level of engagement as other communication strategies in this study, it remains a promising finding, as the manipulation of norms in messaging has been shown in prior studies to influence normative perceptions (Rhodes et al., 2020). This is also evident in research where exposure to social media food messages was linked to perceived food norms (Qutteina et al., 2021), supporting the idea that normative messaging shapes norm perceptions. According to the theory of normative social behavior, altering these normative perceptions is a key step toward facilitating behavior change (Rimal & Real, 2005). Numerous studies support this theory; for example, Qutteina et al. (2021) found that perceived food norms mediated the relationship between message exposure and food intake. Consequently, the finding that health promoters, particularly dietitians, rely on norms by modeling the consumption of healthy foods is noteworthy. Previous research indicates that this modeling of norms positively influences healthy food choices (Gleaves et al., 2024; Hawkins et al., 2020). Furthermore, this study's observation that social norm messages are associated with higher engagement is significant, as increased engagement can lead to greater exposure to these core food norm messages, thereby amplifying their potential impact.

The majority of videos in this study contained at least one type of emotional appeal. This finding is encouraging, as it indicates that health professionals are increasingly utilizing emotional appeals, moving away from their traditional reliance on rational appeal messages. In this study, we found that the use of warmth, humor, and fear appeals had the highest likelihoods of driving engagement. This is in accordance with research that finds emotional appeals to generally elicit positive responses from recipients and tend to achieve higher engagement levels compared to rational appeals (Akpınar & Berger, 2017; Hornik et al., 2017; Rietveld et al., 2020; Stieglitz & Dang-Xuan, 2013). Moreover, the majority of posts in this study combined both emotional and rational appeals. This is particularly significant, as prior research suggests that the integration of emotional and rational elements can enhance message effectiveness beyond engagement (Akpınar & Berger, 2017).

Limitations and Strengths

This study has several limitations. First, findings may not be generalizable across social media platforms, and additional research is needed to identify the communication strategies used by health promoters on other social media platforms and explore possible commonalities across platforms. Second, this study only investigated messages posted in English, excluding posts in other languages, and potentially limiting the diversity and cultural relevance of the insights gained. However, English posts remain widely accessed and used messages in global communication. Third, the sample size of 545 videos may not fully capture the diversity of health-related content online, potentially missing emerging trends and underrepresented communication strategies; however, a manageable sample size such as this also enables researchers to manually code the sample, allowing for a deeper understanding of nuanced themes and insights. Finally, a content analysis provides insight into the characteristics of messages but does not measure their effects. Although engagement metrics, such as likes and shares, may indicate user interest, they offer no insight into how users interpret or apply the messages, nor do they reveal the influence of these messages on users' attitudes, norms, and behaviors.

Conclusion

Recent evidence demonstrates social media as an important platform in the development of one's relationship with food, particularly among vulnerable groups such as adolescents (Gascoyne et al., 2021; Qutteina et al., 2019). This platform presents an opportunity for health promoters, including dietitians and food promoting organizations and initiatives, to advertise core food messages to a broad and diverse population. Despite the absence of direct media costs on these platforms, the production and management of social media posts require time and benefit from insights in strategic communication. This research provides insights on how health promoters communicate core food messages. Based on this insight, we call for health promoters to increase their presence and activity on social media, including on relatively young and popular platforms. Health promoters could also garner higher user engagement by integrating more entertaining content in their social media messages. As the landscape of social media continues to evolve, it will be essential for health communicators to strike a balance between educational objectives and the entertainment value of their messages to maximize audience engagement and promote healthier behaviors effectively. Further research could explore the specific elements within entertainment

and recipe content that drive engagement, providing deeper insights into optimizing health communication strategies. Furthermore, incorporating humor, warmth, and fear appeals as compared to solely relying on music may help health organizations and initiatives in providing more engaging social media content. Although user engagement is a good indicator of how well social media messages are performing, further causal evidence is needed to better assess these messages. Accordingly, we call for future research, especially experimental studies, to investigate the efficiency of the different core food communication strategies uncovered in this research in changing eating attitudes and behaviors among different population segments, including among vulnerable populations.

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Appendix

Supplementary Table

Moderated negative binomial regression models examining the interaction between the type of health promoter and persuasive communication strategies coded in the social media video posts, in predicting the likelihood of user engagement.

	Likes			Comments			Saves			Shares		
	β	SE	P value	β	SE	P value	β	SE	P value	β	SE	P value
(Intercept)	4.571	0.509	<0.001	1.587	0.549	0.004	1.380	0.611	0.024	2.446	0.729	<0.001
Warmth	0.803	0.240	<0.001	-0.066	0.264	0.804	-0.472	0.285	0.097	-0.456	0.351	0.194
Type RD	3.481	0.602	<0.001	3.052	0.637	<0.001	3.620	0.709	<0.001	1.678	0.852	0.049
Music	-0.566	0.302	0.061	-0.197	0.324	0.5420	-0.175	0.351	0.618	-0.343	0.429	0.423
Humor	-0.347	0.330	0.293	-0.540	0.373	0.147	-1.203	0.407	0.003	-1.380	0.508	0.007
Fear	0.565	0.397	0.155	-0.011	0.431	0.980	-0.581	0.465	0.212	-0.123	0.567	0.828
Norm	0.916	0.235	<0.001	0.622	0.260	0.017	0.881	0.279	0.002	0.974	0.345	0.005
Call-to-action	-0.864	0.224	<0.001	-0.495	0.247	0.045	-1.014	0.266	<0.001	-0.900	0.327	0.006
Informational appeal	0.082	0.381	0.829	-0.482	0.411	0.241	0.799	0.472	0.090	-0.874	0.547	0.110
Follower	0.000	0.000	<0.001	0.000	0.000	<0.001	0.000	0.000	<0.001	0.000	0.000	<0.001
Warmth x type RD	-0.182	0.298	0.542	0.064	0.318	0.840	1.548	0.346	<0.001	1.788	0.426	<0.001
Music x type RD	0.508	0.338	0.133	-0.136	0.359	0.704	0.064	0.390	0.870	0.294	0.477	0.538
Humor x type RD	1.253	0.367	<0.001	1.299	0.405	0.001	1.780	0.445	<0.001	2.265	0.553	<0.001
Fear x type RD	0.810	0.559	0.1467	1.565	0.584	0.007	1.825	0.639	0.004	1.761	0.783	0.024
Norm x type RD	-0.463	0.311	0.136	-0.180	0.331	0.585	-0.418	0.360	0.246	-1.020	0.444	0.022
Call-to-action x type RD	0.994	0.269	<0.001	0.641	0.289	0.027	0.898	0.314	0.004	1.098	0.386	0.004
Informational appeal X type RD	-0.777	0.443	0.080	-0.813	0.469	0.083	-0.994	0.536	0.063	0.300	0.629	0.634

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