

REVIEW ARTICLE

Pattern hair loss and health care professionals: How well are we connecting with our audience?

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Abstract

Background: Pattern hair loss, the most common form of hair loss, affects millions in the United States. Americans are increasingly seeking health information from social media. It would appear that healthcare professionals contribute relatively minimally to pattern hair loss content, thereby posing serious concerns for credibility and quality of information available to the general public.

Objectives: This study evaluates popular pattern hair loss-related content on Instagram, TikTok, and YouTube, aiming to understand effective engagement strategies for healthcare professionals on social media.

Methods: The top 60 short-form videos were extracted from Instagram, TikTok, and YouTube, using the search term “pattern hair loss” and inclusion of USA-based accounts only. Videos were categorized by creator type (healthcare vs. non-healthcare professional), content type (informational, interactional, and transactional), and analyzed for user engagement and quality, using engagement ratios and DISCERN scores, respectively.

Conclusions: Healthcare professionals, especially dermatologists, play a crucial role in delivering credible information on social media, supported by higher DISCERN scores. Multi-platform presence, frequent activity, and strategic content creation contributes to increased reach and engagement. Duration of short-form videos does not impact engagement. The “Duet” or “Remix” options on TikTok, Instagram, and YouTube serve as a valuable tool for healthcare professionals to counter misinformation. Our study underscores the importance of optimizing educational impact provided by health care professionals at a time when the public increasingly relies on social media for medical information.

KEYWORDS

hair loss, Instagram, social media, TikTok, YouTube

1 | INTRODUCTION

Pattern hair loss also known as androgenic alopecia, is a type of non-scarring alopecia, and the most common form of hair loss, affecting more than 50 million men and 30 million women in the United States.¹ This condition is characterized by the miniaturization of hair follicles, resulting in an overall reduction in hair thickness and density over time.¹ It typically affects the temporal, frontal, and vertex scalp in men, and the frontal and parietal scalp in women. Pattern hair loss can have a profound effect on self-esteem, with signs of increased stress and decreased overall quality of life.^{2,3} Early intervention and treatment are crucial to slow progression and preserve existing hair, which includes both pharmacologic and nonpharmacologic options.

According to recent data, 1 in 10 Americans use social media to access and retrieve health information,⁴ and despite this, only a minority of hair loss-related content on social media is produced by board-certified dermatologists.⁵ Consequently, ensuring that users receive high-quality, fact-based information is crucial for enhancing accessibility of information and social support.

Social media platforms provide an opportunity for healthcare professionals to improve access and retention of health information for their audience; video-based educational content has been shown to effectively improve patient knowledge of hair loss disorders and respective treatments.⁶ Although the use of social media by healthcare professionals has increased tremendously over the past few years, there remains a gap in understanding how to harness social media for effective medical communication.⁷

In this study, we sought to evaluate sources and content of pattern hair loss-related videos across three widely used social media platforms: Instagram, TikTok, and YouTube. Additionally, we aimed to specifically assess differential characteristics of engaging and accurate information presented by healthcare providers, across platforms and compared to other creator categories, using the engagement ratios and DISCERN scores, respectively.

2 | METHODS

We performed an initial search using the term "hair loss", "pattern hair loss", and "androgenic alopecia", and subsequently categorized content creators into five categories: healthcare professional (physician, nurse), nonmedical professional (trichologist, academic), patient/influencer, haircare business, and wig business. After an initial screening of the top videos across platforms, the search term that yielded the most posts

authored by healthcare professional was chosen. Subsequently, using the search term "pattern hair loss", we conducted our video selection process focusing on short style videos across all platforms. To do this, we selected the "reels" option for Instagram and "shorts" option for YouTube, and no further selection for TikTok. The selection process prioritized the top 60 videos to ensure a manageable yet comprehensive sample size capable of encapsulating the diverse content variability. This approach aimed to strike a balance, providing enough videos to yield statistically significant observations while maintaining practicality in analysis. We only included USA-based accounts, and excluded non-USA accounts, non-English videos, duplicate videos, and videos deemed nonrelevant. Videos where the creator either hid number of likes or disabled comments were excluded, as this did not allow us to measure engagement rate.

Identified videos were assessed for user engagement and quality using the engagement ratio and DISCERN scores respectively.^{8,9} The engagement ratios were calculated by the summation of the number of likes and comments for the video, which were then divided by the number of views. We also categorized content type into three categories: informational, interactional, and transactional, as described previously.¹⁰ One-way ANOVAs were used for statistical analysis with significance accepted at $p < 0.05$. Correlation between numerical variables were examined using Spearman's rank correlation.

3 | RESULTS

3.1 | Creator analysis

Top posts generated from pattern hair loss-relevant hashtags: #hairloss #patternhairloss #androgenicalopecia were categorized according to creator type: healthcare professional, nonmedical professional, patient/influencer, haircare business, wig business. Userbase and features of each platform are summarized in Table 1. Our results indicate that healthcare professionals created the majority of #patternhairloss posts on Instagram (56%) and YouTube (32%), but not TikTok (12%). For YouTube only, the majority of #hairloss posts were created by healthcare professionals (40%) (Figure 1). Surprisingly, medical professionals did not form the majority of #androgenicalopecia posts on any of the platforms, with predominantly wig businesses on Instagram (48%), patient/influencers on TikTok (72%), and nonmedical professionals on YouTube (44%).

YouTube is the platform with the most posts created by healthcare professionals: 40% #hairloss, 32% #patternhairloss, and 24% #androgenicalopecia. TikTok is the platform with the least posts

Parameters	Instagram	TikTok	YouTube
Monthly active users in the USA, ¹⁴ millions	143.4	113.3	246
User demographics Gender, ¹⁴ %	44.4 male 55.6 female	43.0 male 57.0 female	48.6 male 51.4 female
Penetration rate among US teens, ¹¹ %	62	67	95
Average time spent, minutes ¹²	29	33	41.9
Ad reach, ¹⁴ %	46.1	36.4	79

TABLE 1 Userbase descriptives for Instagram, TikTok, and YouTube.¹¹⁻¹³

FIGURE 1 Percentages of posts generated from three hashtags: #hairloss #patternhairloss #androgenalopecia sorted according to creator type: healthcare professional, nonmedical professional, patient/influencer, haircare business, wig business across social media platforms: (A) Instagram, (B) TikTok, and (C) YouTube. A majority of posts by healthcare professional belong to #patternhairloss, and a minority to #androgenalopecia.

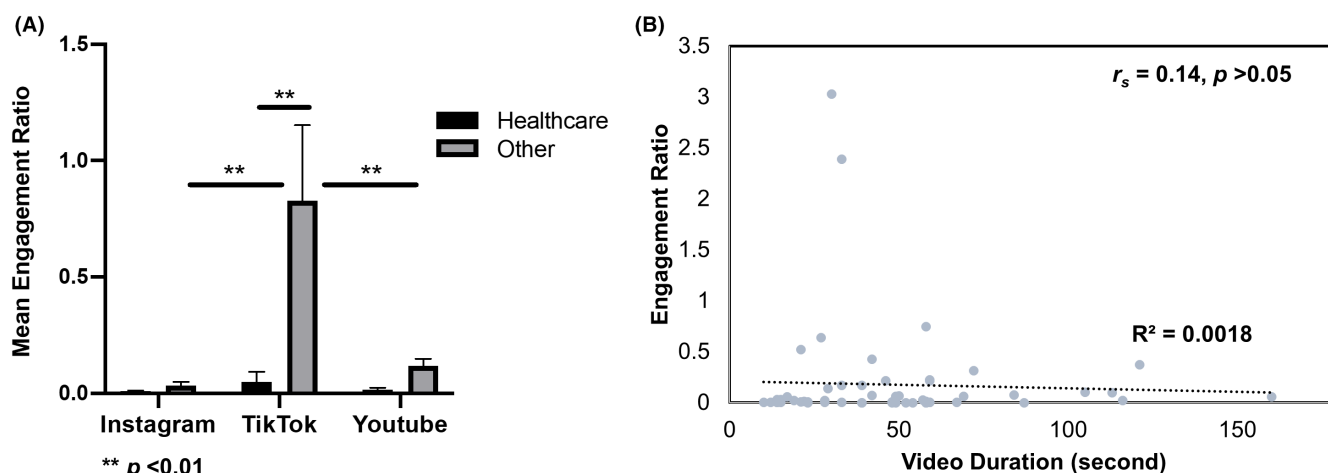
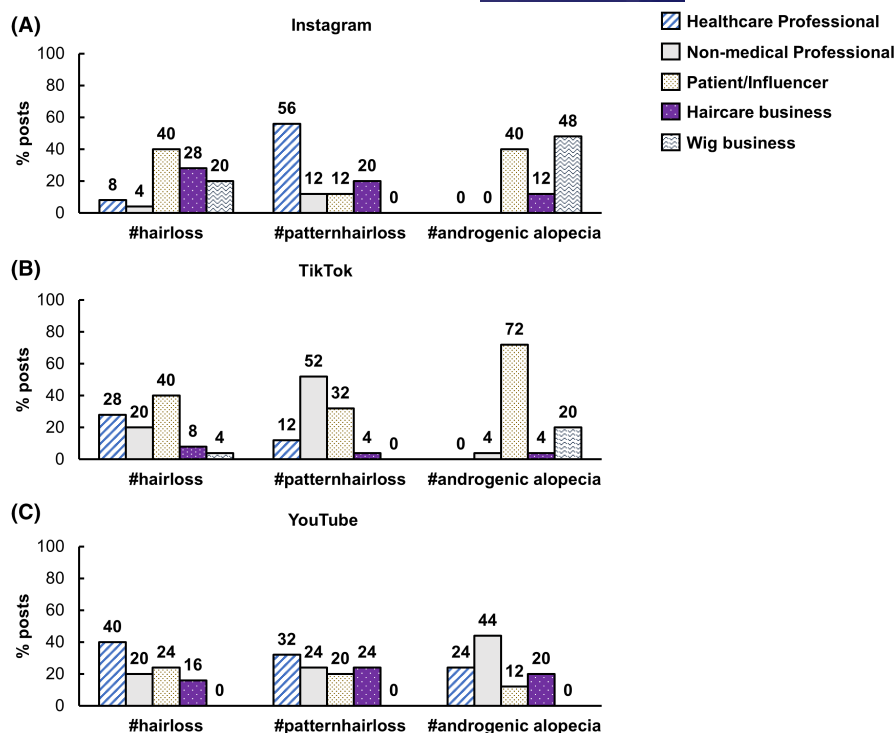


FIGURE 2 (A) Mean engagement ratios of pattern hair loss videos on Instagram, TikTok, and YouTube. Content produced by non-healthcare provider (other) received significantly higher mean engagement ratios than content produced by healthcare provider on TikTok ($p < 0.01$). TikTok content received significantly higher engagement ratios than Instagram ($p < 0.01$), and YouTube ($p < 0.01$); one-way ANOVA, $n = 10$ per group. (B) Spearman's rank correlation between numerical variables: engagement ratio and video duration (in seconds); $n = 60$, $r_s = 0.14$, $p > 0.05$.

created by healthcare professionals: 28% #hairloss, 12% #patternhairloss, and 0% #androgenalopecia (Figure 1). Finally, Instagram generated 8% #hairloss, 56% #patternhairloss, and 0% #androgenalopecia (Figure 1).

3.2 | Content engagement

Pattern hair loss content on TikTok created by non-healthcare providers, mainly patients and influencers, received significantly higher engagement levels compared to content created by

healthcare providers (0.8281 vs. 0.0512, $p = 0.002$) (Figure 2A). Moreover, this was also significantly higher than Instagram and YouTube content created by both non-healthcare providers (0.8281 vs. 0.03436, $p = 0.0015$; 0.8281 vs. 0.1199, $p = 0.0061$) and healthcare providers (0.8281 vs. 0.0102, $p = 0.001$; 0.8281 vs. 0.01555, $p = 0.0011$). However, we did not find any differences in engagement between content created by healthcare professionals and non-healthcare professionals on Instagram and YouTube (Figure 2A). We also performed a correlation test to evaluate whether video duration of short-type videos (Reels, TikToks, and Shorts) impacts levels of engagement across platforms. Our

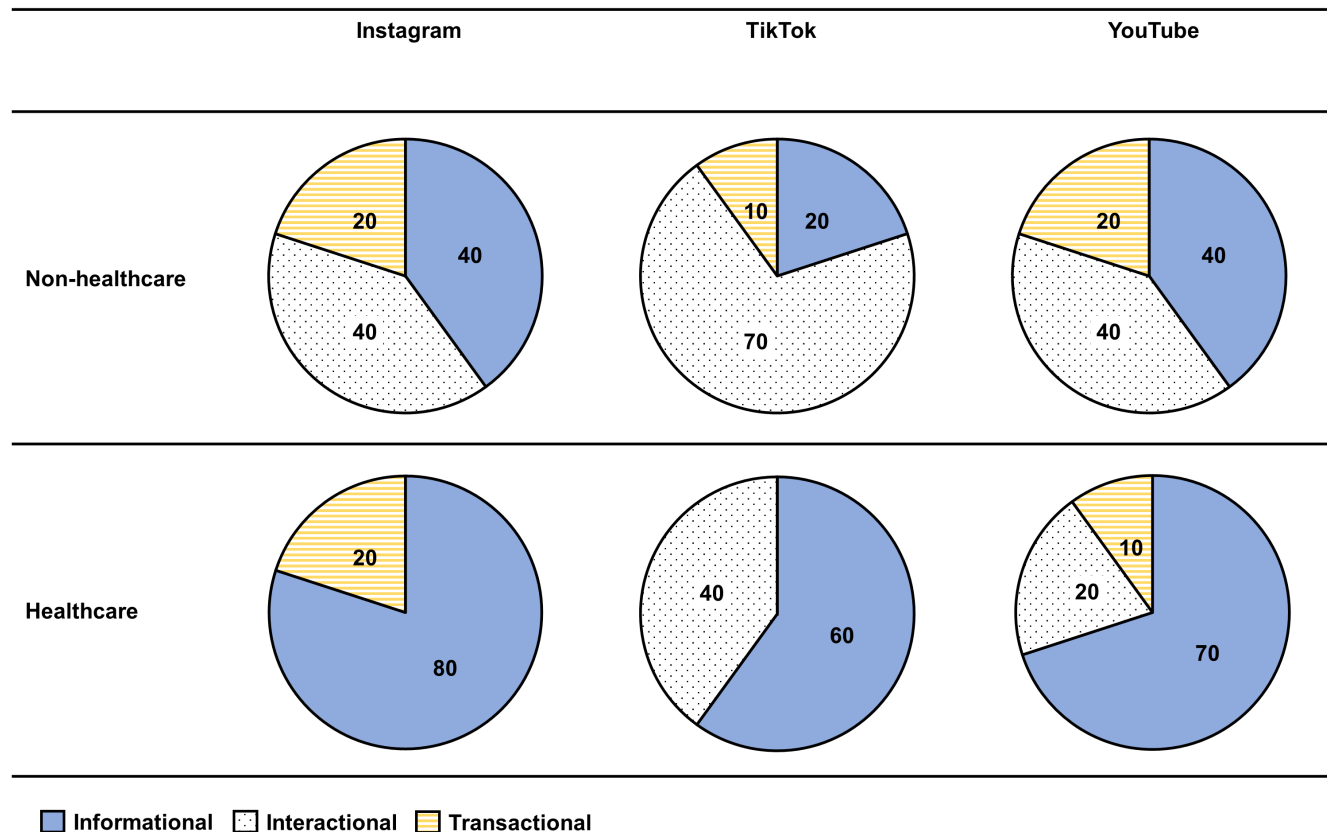


FIGURE 3 Distribution of content categories (informational, interactional, transactional) of videos produced by healthcare providers and non-healthcare providers across social media platforms Instagram, TikTok, and YouTube; $n = 10$ per chart. Content produced by healthcare providers is mainly informational, while that produced by non-healthcare providers is mainly interactional.

results demonstrate no significant correlation ($r_s = 0.14$, $p > 0.05$) between the two variables (Figure 2B).

3.3 | Content type

A total of 60 videos compiled from top content on Instagram, TikTok, and YouTube were evaluated and categorized as either informational (functional, educational, current event), interactional (experiential, personal, brand community), or transactional (remunerative, sales/brand promotion) content. For videos produced by non-healthcare providers, content was primarily interactional on TikTok (70%), and equally interactional and informational on Instagram (40%) and YouTube (40%) (Figure 3). Interactional content mainly pertained patients discussing their personal experiences with pattern hair loss. On the other hand, for videos produced by healthcare providers, it was mainly informational in nature for Instagram (80%), TikTok (60%), and YouTube (70%) (Figure 3).

Informational content included medical education about pattern hair loss etiology and management. This also included “duet” videos, a tool utilized by physicians to respond to viral content, debunking myths or incorrect information, and offer accurate insights. Across platforms, for both videos created by healthcare and non-healthcare

providers, the transactional category was the least common, which included influencers with sponsored product recommendations or clinics recommending their treatments.

3.4 | Content quality

Video quality was evaluated by DISCERN scores, and results demonstrate that videos produced by healthcare providers had significantly higher DISCERN scores than those produced by non-healthcare providers on Instagram (2.280 vs. 1.389, $p < 0.0001$), TikTok (2.087 vs. 1.343, $p = 0.0003$), and YouTube (2.06 vs. 1.367 $p = 0.0008$). There were no significant differences in quality of videos across platforms (Figure 4).

4 | DISCUSSION

We performed a cross-sectional analysis of pattern hair loss-related content across three prominent social media platforms: Instagram, TikTok, and YouTube. Our primary focus was on short-form videos which include Reels on Instagram, TikToks, and Shorts on YouTube. The majority of such posts on YouTube were created by healthcare professionals. However, in contrast, only a minority of popular

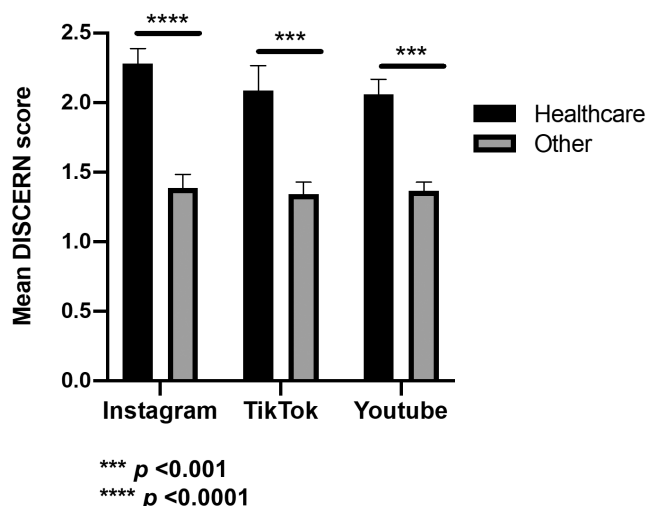


FIGURE 4 Mean DISCERN scores for quality of videos by healthcare and non-healthcare providers (other) across Instagram, TikTok, and YouTube. Videos created by healthcare providers have significantly higher DISCERN scores than those created by non-healthcare providers on Instagram ($p < 0.0001$), TikTok ($p < 0.001$), and YouTube ($p < 0.001$); one-way ANOVA, $n = 10$ per group.

pattern hair loss-related posts are created by healthcare professionals, on both Instagram and TikTok.^{8,15}

TikTok videos from non-healthcare exhibited higher engagement ratios compared to those from healthcare professionals, surpassing the engagement levels seen on Instagram and YouTube for both healthcare and non-healthcare professionals. We hypothesize that this is mainly due to the prevalence of interactional content on TikTok, and its predominantly younger audience (Table 1).¹⁶ Meanwhile, we did not find any differences in engagement between videos created by healthcare professionals and non-healthcare professionals, on Instagram and YouTube. Our results demonstrate that relatively longer videos do not negatively impact engagement rates. This indicates that creators can deliver comprehensive information and create better quality videos without compromising viewer engagement.

Across all platforms, the top engaging content from healthcare providers primarily featured informative content, consistent with previous research demonstrating that board-certified dermatologists were the main source of educational videos on social media.¹⁷ Moreover, videos from healthcare professionals had significantly higher DISCERN scores, and consequently were of better quality compared to those from non-healthcare professionals. Given that every 8 in 10 dermatology patients seek medical information online before consulting a dermatologist,¹⁸ this emphasizes the importance of credible information on social media platforms. General guidelines for high quality content according to DISCERN scores include clear aims, clear sources, unbiased content, discussion of multiple treatment options, and effects on quality of life.

Over 70% of the top dermatologist accounts utilized all three platforms (Instagram, TikTok, and YouTube) and <30% used only Instagram and TikTok, while none of the top accounts used only one

platform. This highlights the importance of multi-platform presence for increased reach and engagement. Additionally, a majority of these accounts were consistently active, with over 78% of creators posting more than 10 times per month. Notably, dermatologists gathered a larger following compared to their non-healthcare counterparts, indicating that physicians who utilize social media platforms are well-positioned to effectively educate a broad audience.¹⁹

Given that a significant proportion of trending hair loss-related content is created by non-healthcare professionals, the “Duet” option on TikTok and “Remix” option on Instagram and YouTube provides an important tool for healthcare professionals to interact and respond to popular videos to prevent the dissemination of misinformation.^{14,20}

Our study has a few limitations, including the extent of data that can be collected from social media platforms and the dynamic nature of social media trends and engagement patterns. Additionally, we did not verify the credentials of those who claimed to be nurses, health care professionals, or dermatologists. Nevertheless, despite these limitations, it provides an insightful analysis of current popular accounts and posts. As the public is increasingly reliant on social media for medical information and treatments, healthcare professionals should optimize their educational impact to deliver accurate and engaging information to health consumers and prospective patients.

AUTHOR CONTRIBUTIONS

Conceptualization: Aditya K. Gupta, Mesbah Talukder. Data Curation; Sara Faour. Formal Analysis: Sara Faour. Investigation: Sara Faour. Methodology; Shruthi Polla Ravi. Tong Wang, Sara Faour. Project Administration: Aditya K. Gupta, Mesbah Talukder. Resources; Aditya K. Gupta. Supervision: Aditya K. Gupta, Mesbah Talukder. Validation: Tong Wang, Shruthi Polla Ravi. Visualization, Sara Faour. Writing—Original draft preparation, Sara Faour. Writing—Review and editing, Aditya K. Gupta, Tong Wang, Mesbah Talukder.

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The authors have no conflict of interest to declare.

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Data will be made available upon reasonable request.

ETHICS STATEMENT

The authors declare that human ethics approval was not required for this article.

CONSENT TO PARTICIPATE

Not applicable.

CONSENT FOR PUBLICATION

Not applicable.

CODE AVAILABILITY

Not applicable.

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