



Content analysis of Turkish professional dermatologist accounts on Instagram, a social media platform

Sosyal medya platformu Instagram'da Türk profesyonel dermatolog hesaplarının içerik analizi

İD Fatmagül Gülbaşaran, İD Özlem Özbağcıvan, İD İrem Kula, İD Cansu Şahin*

Dokuz Eylül University Faculty of Medicine, Department of Dermatology, İzmir, Türkiye

*Private Dermatology Clinic, İstanbul, Türkiye

Abstract

Background and Design: Social media has gained widespread prominence in contemporary society and has significantly impacted various critical aspects of healthcare. While Instagram was initially a platform for social interaction, it has gradually gained recognition in professional fields, including healthcare. This study aimed to analyze the content of popular professional dermatologist accounts on Instagram in Türkiye.

Materials and Methods: Based on a sample of 34 dermatologist accounts with the highest number of followers, the study investigated several key parameters related to the content and account characteristics of accounts that publicly share information about dermatology.

Results: Most dermatologists (29, 85.2%) were specialist physicians working in private practices. Aesthetic and cosmetic dermatology content prevailed across categories compared to medical dermatology ($p<0.05$). There were significant correlations between the number of followers and factors such as the total post count, the presence of cosmetic product recommendations, the sharing of procedure-related media, the use of reel videos, and the gender of the dermatologist [with a preference for female practitioners ($p<0.05$)]. While some accounts (17.6%) included medical treatment recommendations along with the specific drug name, 35.2% (12) included specific cosmetic product recommendations. Current literature was shared only in 3 accounts (8.8%). Most dermatologists (85.2; 29%) also shared social posts unrelated to medicine. In terms of the number, the most shared content was also paramedical (social) posts with a median value of 4 (1-8) (in the last ten posts).

Conclusion: This study provides valuable insights into Turkish dermatologists' online presence and content preferences on Instagram and sheds light on how healthcare professionals interact with their audience and share information.

Keywords: Cosmetic, dermatologist, dermatology, Instagram, social media

Öz

Amaç: Sosyal medya, çağdaş toplumda yaygın bir önem kazanmış ve sağlık hizmetlerinin çeşitli kritik yönlerini önemli ölçüde etkilemiştir. Instagram başlangıçta bir sosyal etkileşim platformu iken, sağlık hizmetleri de dahil olmak üzere profesyonel alanlarda giderek kabul görmeye başlamıştır. Bu çalışmanın amacı; Türkiye'de Instagram'daki popüler profesyonel dermatolog hesaplarının içeriklerini analiz etmektir.

Gereç ve Yöntem: Çalışmamızda, en yüksek takipçi sayısına sahip 34 dermatolog hesabı örneğine dayanarak, dermatoloji hakkında kamuya açık bilgi paylaşan bu hesapların içeriği ve hesap özellikleri ile ilgili çeşitli önemli parametreler incelenmiştir.

Bulgular: Hesapları incelenen dermatologların çoğunluğu (%85,2) kendi kliniğinde çalışan uzman hekimlerdi. Estetik ve kozmetik dermatoloji paylaşımları, tıbbi dermatoloji paylaşımlarına kıyasla daha baskın idi ($p<0,05$). Takipçi sayısı ile toplam gönderi sayısı, kozmetik ürün önerilerinin varlığı, yapılan uygulamaları gösteren medya paylaşımı, reels videolarını kullanımı ve dermatoloğun cinsiyeti (kadın dermatologların daha çok tercih edilmesi) gibi faktörler arasında anlamlı korelasyonlar tespit edilmiştir ($p<0,05$). Hesapların %17,6'sı ilaç adını içerir şekilde tıbbi tedavi önerilerini içerirken, hesapların %35,2'sinde spesifik kozmetik ürün önerileri bulunmakta idi. Sadece 3 hesapta (%8,8) güncel literatür paylaşımına rastlandı. Dermatologların çoğunluğu (85,2; %29) tıp ile ilişkisiz sosyal gönderiler de paylaşmakta idi. Sayı olarak en çok paylaşılan içerik de paramedikal (sosyal) gönderiler olup, güncel 10 paylaşım içinde ortanca değeri 4 (1-8) olarak belirlenmiştir.

Sonuç: Bu çalışma, Türk dermatologlarının Instagram'daki çevrimiçi varlığı ve içerik tercihleri hakkında değerli bilgiler sunmaktadır. Sağlık profesyonellerinin izleyici kitlesi ile nasıl etkileşimde bulunduğu ve bilgi paylaştığı konusunda literatüre aydınlatıcı bilgiler sağlamaktadır.

Anahtar Kelimeler: Kozmetik, dermatolog, dermatoloji, Instagram, sosyal medya

Address for Correspondence/Yazışma Adresi: Fatmagül Gülbaşaran MD, Dokuz Eylül University Faculty of Medicine, Department of Dermatology, İzmir, Türkiye

Phone: +90 532 479 63 80 **E-mail:** drfatmagulgulbasaran@gmail.com **Received/Geliş Tarihi:** 19.09.2023 **Accepted/Kabul Tarihi:** 03.12.2023

ORCID: orcid.org/0000-0002-7550-6052

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Introduction

Social media has become widely prevalent in society nowadays and has started to significantly impact various critical aspects of healthcare, ranging from patient education to building professional networks and doctor-patient interaction¹. These networks, initially regarded for social purposes, have gradually gained acceptance in professional fields as well². Numerous national and international healthcare organizations, professional dermatological societies, and renowned scientific journals are included in this group². As a result, social media has become a platform that many doctors use to inform the public or showcase their treatments and practices³. Just like in all fields of medicine, it is increasingly being utilized among dermatologists as well⁴. In our country, thousands of people follow professional dermatologist accounts. Instagram is one of the most prominent social media platforms, enabling people to transmit images and fostering both private and public interactions among its users. Furthermore, users can employ hashtags to classify specific topics⁵. There are existing studies worldwide that evaluate the content of professional dermatology accounts⁶⁻¹⁰. Our country has a widespread presence of professional dermatologist accounts that engage in similar content-sharing practices. It has been observed that many patients take into account the information they receive from these media. However, studies related to content analysis of these accounts are currently lacking. This study aimed to perform a comprehensive content analysis of prominent professional dermatologist accounts active on Instagram in our country.

Materials and Methods

Instagram offers two search mechanisms based on usernames or "hashtags" to identify users or topics of interest. Sample size calculations for conducting a content analysis on social media platforms per our study's objectives, within a 95% confidence interval and 80% statistical power, indicated that a minimum sample size of 31 is required.

To achieve the aim of the study, which was a comprehensive content analysis of prominent professional dermatologist accounts on Instagram, we utilized hashtags related to dermatology and various skin treatments, both in English and Turkish and searched for relevant posts. Some of the hashtags we searched were listed as follows: *#dermatology*, *#dermatologist*, *#acne*, *#alopecia*, *#eczema*, *#melanoma*, *#skincancer*, *#urticaria*, *#melasma*, *#botox*, *#filler*, *#blemishtreatment*, *#skincare*, *#fractionallaser*, *#fractionalradiofrequency*, *#mesotherapy*, *#threadfacelift*, *#threadlift*. Subsequently, Turkish dermatologist accounts linked to these posts were reviewed. As a result, 34 professional accounts with the highest follower counts among publicly accessible profiles were selected for inclusion in the study.

For each professional account included in the study, the ten most recent posts were reviewed. Content shared in the form of "Instagram stories," which are temporary visual or video posts that automatically disappear after 24 hours in accordance with the application's policy, was excluded from the study since it is not possible to access the old stories of each account in a cross-sectional study.

Demographic information, including gender, age, years of experience as a medical practitioner, as well as descriptive details found in their profiles (such as city, work address, website link, and alumni affiliation)

was collected. Additionally, we analyzed metrics such as the number of followers, total post count, account duration and the average daily post frequency over the past month for the selected dermatologist accounts under study. We thoroughly examined the posts to ascertain their alignment with the domains of medical and aesthetic dermatology. This encompassed the assessment of content, such as recommendations for medical or cosmetic products, visual documentation of procedures, before-and-after patient images, alongside non-medical social shares, thereby providing a holistic view of the content spectrum.

The study was conducted using publicly available data, and the names of the account holders were not disclosed. Ethical approval was obtained from the Dokuz Eylül University Faculty of Medicine Ethics Committee (approval number: 2023/20-17, date: 14.06.2023).

Statistical Analysis

We first evaluated the normality distributions of the data using the Shapiro-Wilk test. Since the data did not follow a normal distribution, we expressed numerical variables as median (minimum-maximum). To examine whether there was a correlation between numerical parameters, such as the number of followers, and categorical variables related to account content (cosmetic, medical, etc.), we utilized Spearman's rank correlation analysis. For the analysis of numerical parameters against categorical variables, we employed non-parametric tests. In all our analyses, we tested the p-value in a two-tailed manner and applied a significance threshold of 0.05. For the analyses, we used the SPSS software package, version 29.0.

Results

The 34 accounts included in the study had a minimum of 10,400 and a maximum of 421,000 followers, with a median of 31,150. Of the examined accounts, 67.6% (n=23) belonged to female dermatologists, while 32.4% (11) belonged to male dermatologists. We observed a statistically significant correlation (p=0.017) between gender and the number of followers, suggesting that being female is positively associated with having a higher number of followers.

While the Instagram content of male and female dermatologists shares many common characteristics, including medical content, product endorsements, and the sharing of photos or videos captured during procedures, there is a notable distinction in the prevalence of paramedical content. It was found that female dermatologists had a significantly higher rate of paramedical posts (p=0.028) compared to their male counterparts.

The age of only 10 of the account owners could be accessed from publicly available sources, with a minimum age of 32, a maximum of 55, and a median age of 43.5 years. Due to insufficient access to age information, years of graduation from medical school were used to calculate the years of medical practice. The minimum years of practice were 7, the maximum was 33, and the median was 19. There was no significant relationship between the ages of dermatologists and their number of followers (p=0.231).

Among the account owners, only 8.8% (n=3) worked in government hospitals, 5.8% in private hospitals, and 85.2% (n=29) had private practices. Out of examined accounts, 14.7% (n=5) held the title of associate professor, 17.6% (n=6) were professors and 67.6% (n=23) were specialist dermatologists.

The cities where dermatologists with the highest number of followers on Instagram primarily practice are as follows, in descending order: İstanbul (52.9%, n=18), Ankara (8.8%, n=3), Antalya (8.8%, n=3), İzmir (5.9%, n=2), Adana (5.9%, n=2), Konya (2.9%, n=1), Bursa (2.9%, n=1), Denizli (2.9%, n=1), and other cities (8.8%, n=3) (Figure 1). There was no significant association between the towns where dermatologists practiced and the number of followers ($p=0.79$). Account characteristics of Turkish dermatologists with the highest number of Instagram followers are provided in Table 1. In the biography section of the account profiles, the workplace was indicated except for three accounts (91.1%), and 29 accounts (85.2%) also provided additional information, such as addresses or website links. The faculty they graduated from was mentioned in only four accounts (11.7%). While aesthetic dermatological terms were present in 29 accounts (85.2%), medical dermatological terms were present in only 20 accounts (58.8%). Additional information was found in 7 accounts (20.5%) and included being "A Board-Certified Dermatologist", "Trainer of a Specific Filler Brand", "Medical Author" and being "Authorized as an International Health Tourism Center".

In the examined accounts, the total number of posts ranged from a minimum of 179 to a maximum of 4,218, with a median of 575.5. A significant and positive correlation was determined between the total number of posts and the number of followers ($p<0.01$, $r=0.032$). As the number of posts increased, the number of followers increased, but

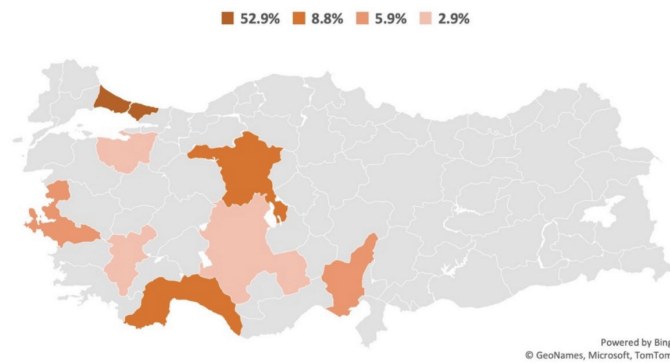


Figure 1. Cities of top Turkish dermatologists with the highest Instagram followers

there was no significant relationship between account duration and the number of followers.

When we examined the content of the accounts, we found that 17.6% (n=6) included medical treatment recommendations mentioning the name of the active substance of the medication, while 35.2% (n=12) featured cosmetic product recommendations. A significant relationship ($p=0.018$) was observed between accounts providing cosmetic product recommendations and a higher number of followers, whereas no such correlation was observed for medical treatment recommendations. The topics identified in the content of the examined posts were as follows: skincare (n=30, 8.82%), acne (n=8, 2.35%), skin cancer/mole screening (n=8, 2.35%), skin spot/pigmentation (n=7, 2.06%), rosacea (n=4, 1.18%), hair loss (n=3, 0.88%), seborrheic keratosis (n=1, 0.29%), and insect bites (n=1, 0.29%). Photos or videos taken during cosmetic procedures were shared in 79.4% (n=27) accounts, and there was a significant relationship ($p=0.015$) between sharing such content and having a higher number of followers too. Information related to diagnosis was present in 47% of accounts (n=16). Sharing of the current literature was found only in 8.8% of accounts (n=3). Images or videos of the account holder speaking at scientific or cosmetic meetings were present in 55.8% (n=19) accounts. A statistically significant positive correlation was observed between the number of Instagram "reel" videos (short video clips commonly shared on Instagram) and the number of followers ($p=0.006$, $r=0.86$).

The majority (85.2%, n=29) of dermatologists included social posts unrelated to medicine. In terms of quantity, paramedical posts were the most frequently shared content, with a median value of 4 (ranging from 1 to 8 in the last ten posts), followed by the posts featuring videos or photos taken during procedures, with a median value of 2 (ranging from 1 to 9), as well as before-and-after posts showcasing cosmetic procedures, also with a median value of 2 (ranging from 1 to 9). The median number of cosmetic product recommendations was 1.5 (ranging from 1 to 6), while recommendations for medical treatment products had a median value of 0 (ranging from 0 to 2), and before-and-after posts featuring medical treatments had a median value of 0 (ranging from 0 to 1).

Table 1. Characteristics of most followed Turkish dermatologist Instagram accounts

	Median	Min.	Max.
Total number of followers	31,150	10,400	421,000
Number of followers for female dermatologists	39,150	10,600	200,000
Number of followers for male dermatologists	19,750	10,400	421,000
Age of the account holder dermatologist, years	43.5	32	55
Years of medical practice	19	7	33
Number of followers for dermatologists with the title of professor	26,450	10,500	39,500
Number of followers for dermatologists with the title of associate professor	47,600	39,500	200,000
Number of followers for specialist dermatologists	25,500	10,400	421,000
Total number of posts	575.5	179	4,218
Average number of posts shared per day	0.3	0.03	1.46
Account age, years	8	2	11
Min.: Minimum, Max.: Maximum			

Discussion

Acknowledging the potential downsides, such as disinformation, associated with the extensive reach through social media is essential². Recent recommendations from well-regarded publications suggest that dermatologists can play an essential role in mitigating the negative impacts of social media by actively engaging with the growing public interest^{3,11,12}. Furthermore, official institutions have recognized the influence of this phenomenon. In Türkiye, the Ministry of Health has recently introduced a comprehensive regulatory framework, exemplifying an awareness of the need for responsible management in this evolving environment¹³.

While Instagram is a widely used platform, it is not inherently scientific, and its accessibility is open to the general public¹⁴. It can provide substantial income to account holders, making it susceptible to unethical or medically inappropriate content¹⁵. Consequently, it is an environment where concerns related to these issues can arise.

In this study, we analyzed content shared by 34 highly engaging professional Turkish dermatologist accounts on Instagram. We observed that aesthetic and cosmetic dermatology content dominated across all categories compared to medical dermatological content within the examined Turkish dermatologist accounts. It has been determined that cosmetic advice/skin care is the most shared and has the highest number of followers among topics on Instagram¹⁰ and other globally popular social media platforms such as Reddit¹⁶. This emphasis on aesthetic concerns is somewhat expected because of Instagram's primary focus on photo and video sharing. The higher prevalence of aesthetic content may also be attributed to the quicker, visible results often associated with cosmetic procedures, as opposed to the longer timeframes required for medical treatments. Nevertheless, it is noteworthy that some dermatologists within the top engaging accounts also share "medical" content, indicating that this platform can serve as an effective means of public education and outreach in dermatology. However, specific drug names, and even generic drug names, were included in some percentage of posts among the accounts we examined. In the literature, a growing body of work addresses the increased social media presence of healthcare professionals and dermatologists⁴. Although it is generally advised against providing specific medical recommendations on a platform that can be publicly accessible, offering general advice regarding healthcare care is typically deemed acceptable¹⁷.

Significant relationships were identified between the number of followers and several factors, including gender (with a preference for female dermatologists), total post count, the inclusion of cosmetic product recommendations, sharing photos or videos captured during procedures, and utilizing reel videos. The correlation between the number of followers and reel videos may be attributed to Instagram's dedicated search feature for reels, which facilitates user access to this specific content. This suggests that when used for informative purposes, such as public education, reel-style presentations in a medical field like dermatology may positively impact engagement, in a format that captures the public's interest.

As for the preference for following female dermatologists, this could be influenced by various factors, including the perception of societal beauty standards, social skills of women facilitating engagement, or individual preferences. A study titled "Cross-sectional Analysis of Dermatologists and Sponsored Content on TikTok" revealed that

social media users, predominantly young women, showed a significant presence of female dermatologists. Out of the 97 profiles examined, 67 (71.3%) belonged to female users, while 27 (28.7%) were associated with male users, consistently aligning with the findings of this study conducted in Türkiye¹⁷. It is also worth exploring gender-related differences in content sharing among females compared to male Turkish dermatologists on Instagram, such as the frequency of posts and the prevalence of paramedical content.

While a significant correlation was discovered between the total number of posts and the number of followers, no significant relationships were observed between the "account duration" or the "age of the account holder" and the number of followers. Although younger doctors more commonly use social media in the new generation¹⁸, the lack of correlation between "followers" and "dermatologist age" should suggest that it is not solely the domain of younger professionals.

In our study, most accounts exhibited social posts unrelated to medicine, and there was a correlation between accounts with social posts and a higher number of followers. Although doctors do not need to establish a real doctor-patient relationship on social media, followers on Instagram can perceive healthcare professionals from a professional perspective¹⁰. It is thought that the acceptance of doctors' treatment or cosmetic product recommendations by followers is based, at least in part, on the portrayal of an "ideal" lifestyle³. In this respect, ethical concerns arise regarding the over-sharing of social life and especially the showing of "luxury brand items" and "luxury" aspects⁴. Because of their profession's societal role and value, doctors must aim for a higher ethical standard than many other industries in the same media today⁷. Research suggests that patients often turn to social media to seek healthcare-related information, making it imperative that healthcare professionals leverage these platforms responsibly^{19,20}.

Study Limitations

This study has several limitations that warrant acknowledgement. Firstly, while this study provided insights into the most recent posts of these Turkish dermatologist accounts, it did not delve into the entire history of the accounts, which could reveal longer-term trends and shifts in content over time. Secondly, the study did not include an analysis of "story" posts, which are a significant part of Instagram's content. Stories are temporary and automatically deleted after 24 hours, making them an interesting aspect for future research.

Conclusion

In conclusion, despite the acknowledged limitations, this study offers valuable insights into Turkish dermatologist accounts' content and engagement patterns on Instagram, a platform gaining increasing significance each day.

Ethics

Ethics Committee Approval: Ethical approval was obtained from the Dokuz Eylül University Faculty of Medicine Ethics Committee (approval number: 2023/20-17, date: 14.06.2023).

Informed Consent: It wasn't obtained.

Authorship Contributions

Concept: F.G., Ö.Ö., İ.K., C.Ş., Design: F.G., Ö.Ö., İ.K., C.Ş., Data Collection or Processing: F.G., İ.K., Analysis or Interpretation: F.G., Ö.Ö., İ.K., C.Ş., Literature Search: F.G., Ö.Ö., İ.K., C.Ş., Writing: F.G., Ö.Ö., İ.K., C.Ş.

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