

A Cross-Sectional Analysis of TikTok Skin Care Routines and the Associated Environmental Impact

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PRACTICE POINTS

- Social media platforms are increasingly influential in shaping consumer skin care habits, particularly among younger demographics.
- Dermatologists should be aware of the aesthetic-driven nature of online skin care trends when advising patients on product use.
- Viral skin care routines often feature multiple products and applicators, potentially encouraging excessive product use and waste.

To the Editor:

The popularity of the social media platform TikTok, which is known for its short-form videos, has surged in recent years. Viral videos demonstrating skin care routines reach millions of viewers,¹ showcasing specific products, detailing beauty regimens, and setting fads that many users eagerly follow. These trends often influence consumer behavior—in 2023, viral videos using the tag #TikTokMadeMeBuy lead to a 14% growth in the sale of skin care products.² However, they also encourage purchasing decisions that may escalate environmental waste through plastic packaging and single-use products. In this study, we analyzed videos on TikTok to assess the environmental impact of trending skin care routines. By examining the types of products promoted, their packaging, and the frequency with which they appear in viral

content, we aimed to investigate how these trends, which may be imitated by users, impact the environment.

A search of TikTok videos using #skincareroutine was conducted on June 21, 2024. Sponsored content, non-English language videos, videos without demonstrated skin care routines, and videos showing makeup routines were excluded from our analysis. Data collected from each video included username, date posted, number of likes, total number of skin care products used, number of single-use skin care products used, average amount of product used, number of skin care applicators used, and number of single-use applicators used. Single-use items, defined as those intended for one-time use and subsequent disposal, were identified visually by packaging, manufacturer intent, and common consumer usage patterns. The amount of product used per application was graded on a scale of 1 to 3 (1=pea-sized amount or less; 2=single full pump/spray; 3=multiple pumps/sprays). Videos were categorized as personal (ie, skin care routine walk-throughs by the creator) or autonomous sensory meridian response (ASMR)(focused on product sounds and aesthetics).³ A Mann-Whitney U test was utilized to statistically compare the 2 groups. Statistical analysis was performed using Microsoft Excel ($\alpha=0.05$).

A total of 50 videos met the inclusion criteria and were included in the analysis. The average number of likes per video was 499,696.15, with skin care routines featuring an average of 6.4 unique products (Table). There was a weak positive correlation ($r=0.1809$) between the number of skin care products used and the number of likes. A total

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TABLE. Overview of Study Data for 50 TikTok Videos Demonstrating Skin Care Routines^a

| Type of video | No. of videos | Mean no. of likes per video | Mean no. of products used per video | Mean no. of single-use products used per video | Mean score of amount of product used per application | Mean no. of applicators used per video | Mean no. of single-use applicators used per video |
|---------------|---------------|-----------------------------|-------------------------------------|--|--|--|---|
| Personal | 35 | 383,518.67 | 6.514 | 0.31 | 1.97 | 0.66 | 0.43 |
| ASMR | 15 | 745,517.20 | 6.07 | 0.64 | 2.67 | 1.53 | 1.2 |
| Total | 50 | 499,696.15 | 6.4 | 0.46 | NA | 0.94 | 68.83 |

Abbreviations: ASMR, autonomous sensory meridian response; NA, not available.

^aVideos were identified using #skincarerroutine on June 21, 2024.

of 320 products were used across the videos, 23 of which were single-use (7.2%). On average, single-use skin care items were used 0.46 times per routine, comprising a mean 7.99% of total products per video. The average score for the amount of product used per application was 2.18. There was no difference in personal vs ASMR videos with regard to the total number of skin care products used or the average amount of product used per application ($P > .05$). Thirty-three (70.2%) of the 47 applicators used across all videos were single-use. An average of 0.94 applicators per routine were utilized, with a mean 68.83% being single-use applicators. Common single-use products were toner wipes and eye patches, and single-use applicators included cotton pads and plastic spatulas.

Our findings indicated a prevalence of multiple products and large amount of product used in trending skin care routines, suggesting a shift toward multistep skin care. This implies a high rate of product consumption that may accelerate the carbon footprint associated with skin care products,³ which could contribute to climate change and environmental degradation. Consumers also may feel compelled to purchase and discard numerous partially used products in order to keep up with the latest trends, exacerbating the environmental impact. Furthermore, the utilization of single-use products and applicators contributes to increased plastic waste, pollution, and resource depletion. Single-use items often are difficult to recycle due to their mixed materials and small size,^{4,5} and therefore they can accumulate in landfills and oceans. This impact can be mitigated by switching to reusable applicators, refillable packaging, and biodegradable materials.

The substantial average number of likes per video indicates high engagement with skin care content among TikTok users. The continued popularity of complex multistep skin care routines, despite a weak correlation between the number of skin care products used and the number of likes per video, likely stems from factors such as aesthetic appeal, ASMR effects, and creators' established followings, which may drive user engagement to contribute to unsustainable consumption patterns.

Factors such as presentation style, aesthetics, or creators' pre-existing online following may have a major impact on how well a video performs on TikTok. The similarity between personal and ASMR videos, particularly in the number of products used and the amount applied, suggests that both formats employ common approaches to meet audience expectations and align with promotional trends, relying more on sensory and aesthetic strategies than substantive differences in skin care routines.

Our use of only one tag in our search as well as the subjective quantity scale limits the generalizability of these findings to broader TikTok skin care content.

Overall, our study underscores the role of brands and social media influencers in skin care education and promotion of sustainable practices. The extensive number of products used and generous application of each product in skin care routines demonstrated in TikTok videos may mislead viewers into believing that using more product improves outcomes, when often, less is more. We recommend that dermatologists counsel patients about informed skin care regimens that prioritize individual needs over social media fads.

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