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YouTube as a Source of Patient Information for Soft Tissue Filler

Christina M. Huang, MD, FRCPC

Introduction

With the dawn of the Internet era, information has become readily available and accessible to people worldwide. Over 70% of adults search the Internet for healthcare-related information.[1] Among the most popular platforms is *YouTube*, a free video sharing platform that has quickly become one of the most widely used sources of online information, with over 2 billion video views daily and over 30 million subscribers.[2,3] A 2018 Health Information National Trends Survey reported that more than 33% of patients watched health-related videos on *YouTube*.[4]

Dermal fillers are medical device implants approved for various cosmetic concerns such as moderate to severe facial rhytids, augmentation of facial features, lipoatrophy, and correction of contour deficiencies.[5] According to the 2020 Plastic Surgery Statistics study, dermal fillers ranked as the second most common cosmetic procedure, after botulinum toxin A injections.[6] The popularity of dermal fillers continue to rise due to general societal acceptance, their non-invasive nature, and the increased availability of biocompatible and durable materials. The latter facilitates immediate and predictable results with minimal downtime. Education about fillers may involve a visual and auditory component to better help patients contextualize the process and set appropriate expectations. Particularly for first-time filler patients, *YouTube* may be a first line resource.

While online videos can be a valuable educational tool, information on the Internet is not always accurate and may originate from unreliable sources. Numerous studies have evaluated the accuracy and content of *YouTube* videos related to patient information.[7-10] Studies have also investigated the quality of videos regarding botulinum toxin A injections.[11] However, there is a lack of literature regarding filler content on this platform. This study aims to objectively assess the accuracy, quality, and completeness of *YouTube* videos on dermal fillers. The findings will help inform dermatologists and other injectors regarding the utility of *YouTube* as a tool for patient education.

Search Strategy

The *YouTube* search engine (**www.youtube.com**) was accessed on a single date with a cleared-cache web browser using the keywords "filler," "dermal filler," "cheek injectables," "lip injectables," "cosmetic filler," and "facial filler." The search was sorted by the default setting of "relevance", to replicate a typical search attempt by an average viewer. The titles and descriptions of the videos were reviewed in ascending order until 100 videos were collected. Videos were excluded from the study if they were duplicates, non-English, non-audio, or unrelated to dermal fillers.

Data Extraction

For each video, the following metrics were recorded: Uniform Resources Locator (URL), title, duration, number of views, number of likes, number of dislikes, and comments. Based on these metrics, the overall popularity of each video was calculated using the Video Power Index (VPI) = [(view ratio x like ratio)/100], where view ratio = views/day, and like ratio = (likes x 100)/(likes + dislikes). The video upload source was categorized as "dermatologist," "non-dermatologist physician," "non-physician health care worker," or "other," which included influencers, independent users, and media. The nature of the video was also classified as "educational," "patient experience," "demonstration," or "promotional."

Quality Assessment

Quantitative assessment of video content was determined using the modified DISCERN criteria. The modified DISCERN score was used to evaluate for clarity, reliability, bias, reference supplementation, and uncertainty of content.[7,12] The maximum score was five, with higher scores indicating more reliability (see **Table 1**).

To determine the overall effectiveness of the video as a patient education resource the Global Quality Scale (GQS) was applied (see **Table 2**). This scale provides an overall rating of each video based on the quality, flow, and usefulness of the information for patients. Videos were rated on a 5-point scale, with one indicating the worst and five indicating the best quality.

Statistical Analysis

Data collected from the *YouTube* video assessments were compiled into a centralized database designed specifically for the study using Microsoft Excel. All statistical analyses were performed using GraphPad Prism (Version 7, GraphPad Software, USA), with $p<0.05$ considered statistically significant. Descriptive statistics were used to summarize data (mean, standard deviation [SD], range) in a table format. Categorical variables were reported as frequencies and relative frequencies. Continuous variables were reported as means and SDs.

Video Demographics

Of the 100 videos initially identified, 98 were included in the review. Two videos were excluded as they were either removed from *YouTube* later or were non-dermal filler-related. At the time of evaluator review, videos had been online for an average of 891 days (SD:722.24; range: 1–3,375 days). The total duration of all videos was 63,277.[8] seconds with a mean length of 646 seconds (SD: 513, range: 56–3,112 seconds). The videos amassed a total of 47,634,824 views, with a mean of 486,070 views per video (SD: 1,961,096; range: 11–19,097,381 views). The mean number of likes was 5,933 (SD: 17,506; range: 1–126,000) and the mean number of dislikes was 366 (SD: 1,923; range: 0–1,900 dislikes). Across all videos, there was a total of 581,387 likes and 35,914 dislikes. Video comments ranged from 0 to 22,156, with a mean of 613 and a total of 60,068 comments (SD: 2,347). The mean number of subscribers for each video reviewed was 716,802 (SD: 2,408,362; range: 446–20,300,000) with a combined total of 70,246,621 subscribers for all videos. The calculated VPI across all videos was 771.66 (SD: 1,819.14; range: 6.15–11,333.83). A summary of the video demographics can be found in **Table 3**.

Modified DISCERN criteria (maximum score of 5)
1. Are the aims clear and achieved?
2. Are reliable sources of information used? (i.e., publication cited, speaker is dermatology/plastic surgeon injector?
3. Is the information presented balanced and unbiased?
4. Are additional sources of information listed for patient reference?
5. Are areas of uncertainty mentioned?

Table 1. Modified DISCERN criteria; *adapted from Singh et al. 2019 and Radonjic et al. 2019.*

Global Quality Scale (maximum score of 5)
1 = Poor quality, poor flow of the video, most information missing, not at all useful for patients.
2 = Generally poor quality and poor flow, some information listed but many important topics missing, or very limited use to patients.
3 = Moderate quality, suboptimal flow, some important information is adequately discussed but others poorly discussed, somewhat useful for patients.
4 = Good quality and generally good flow. Most of the relevant information is listed, but some topics not covered, useful for patients.
5 = Excellent quality and flow, very useful for patients.

Table 2. Global Quality Scale; *adapted from Singh et al. 2019 and Radonjic et al. 2019.*

	Mean ± standard deviation (SD) (*range*)	Total
Duration (seconds)	646 ± 513 (56–3,112)	63,277.80
Views (*n*)	486,070 ± 1,961,096 (11–19, 097,381)	47,634,824
Likes (*n*)	5,933 ± 17,506 (1–126,000)	581,387
Dislikes (*n*)	366 ± 1,923 (0–1900)	35,914
Comments (*n*)	613 ± 2,347 (0–22,156)	60,068
Subscribers (*n*)	716,802 ± 2,408,362 (446-20,300,000)	70,246,621
Video Power Index	772 ± 1,819 (6–11,333)	--

Table 3. Video Demographics; *courtesy of Christina M. Huang, MD, FRCPC.*

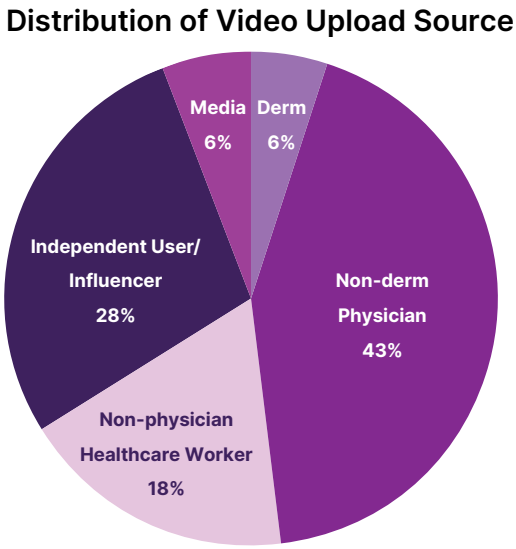

Figure 1a. Distribution of video upload sources; *courtesy of Christina M. Huang, MD, FRCPC.*

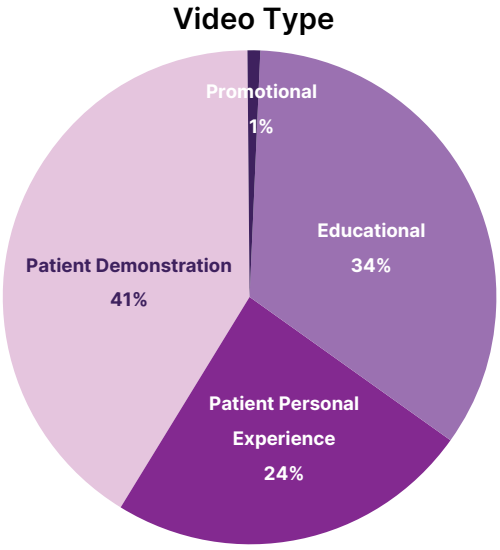

Figure 1b. Distribution of video Type; *courtesy of Christina M. Huang, MD, FRCPC.*

DISCERN	**Mean:** 1.47/5 **Standard deviation (SD):** 0.94; **Range:** 0–4
Global Quality Score	**Mean:** 1.82/5 **SD:** 1.05; **Range:** 1–5

Table 4. Mean Quality Scores; *courtesy of Christina M. Huang, MD, FRCPC.*

Video Source and Classification

Of the 98 included videos, 43% (42/98) were uploaded by non-dermatology physicians, while only 5% (5/98) were uploaded by board-certified dermatologists. Approximately 18% (18/98) of the videos were created by non-physician healthcare workers and 34% (33/98) were created by other sources (influencers/independent users/media) (**Figure 1a**). In terms of content classification, 41% (40/98) of videos were classified as "patient demonstration," 34% (33/98) were "educational," 24% (24/98) were "patient experience," and 1% (1/98) were "promotional" (**Figure 1b**).

Objective Outcome Measures of Videos

Across all videos, the mean DISCERN score was 1.19 out of 5 (SD: 0.94; range: 0–4), and the mean GQS score was 1.82 (SD: 1.05; range: 1–5) (**Table 4**). No videos achieved the maximum DISCERN score, and only three received a perfect score on the GQS. As illustrated in **Figure 2**, there were significant differences found between *YouTube* uploader groups in quantitative video content scores (DISCERN: p=0.03, GQS: p=0.004). Subgroup analysis revealed that of the GQS, videos uploaded by dermatologists had significantly higher GQS scores compared to those uploaded by non-dermatology physicians, non-physician healthcare workers, and other sources (influencers/independent users/media). Dermatologist-uploaded videos scored significantly higher on the DISCERN scale than those from influencers/independent users/media. There were no significant differences in VPI and the objective quality scores.

Discussion

This study evaluated the accuracy, quality, and popularity of *YouTube* videos on soft tissue fillers, highlighting both the strengths and shortcomings of the platform as a patient education resource. The most striking finding was the wide reach of filler-related content, with more than 47 million cumulative views across fewer than 100 videos. With hundreds of thousands of likes, dislikes, and comments recorded, the data

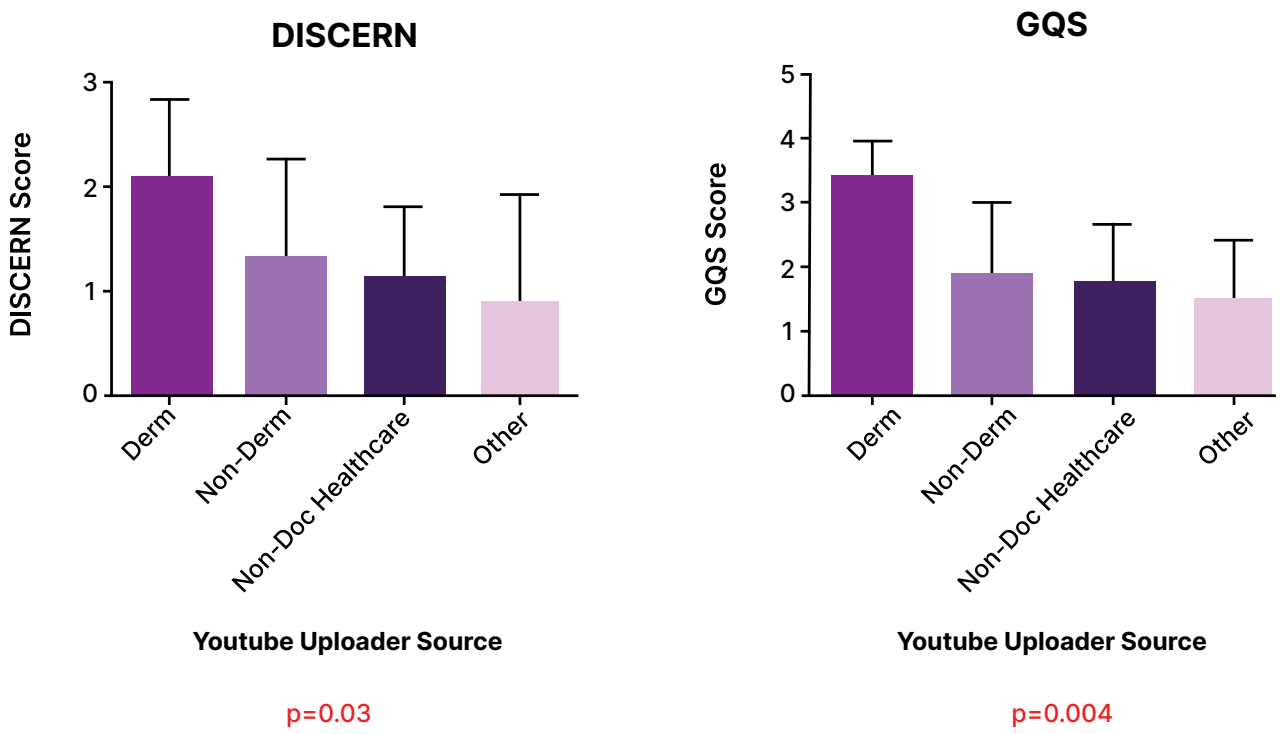

Figure 2. Quantitative video content scores between YouTube Uploader groups *courtesy of Christina M. Huang, MD, FRCPC.*

clearly demonstrate that the *YouTube* platform facilitates active viewer participation, reinforcing its role as a highly visible and interactive space for disseminating information.

Despite the substantial reach of filler-related content, video popularity, as measured by VPI, did not significantly correlate with objective quality scores. This disconnect between popularity and educational value mirrors findings from prior analyses of health-related *YouTube* content, where viewer engagement is often driven by entertainment value, production quality, or personal narratives, rather than the accuracy or comprehensiveness of the information.[13] Consequently, patients who rely on video popularity as a surrogate marker for reliability may be at risk of encountering inaccurate information.

Overall, the quality of filler-related content on *YouTube* was poor, with both DISCERN and GQS scores averaging below 2, indicating that most videos failed to provide comprehensive and reliable information. These findings are consistent with previous research published in other medical and cosmetic domains.[2,14] Particularly in cosmetic dermatology, inadequate information can pose a risk, as patients' perceptions of safety and expectations of realistic outcomes can be heavily influenced by what is seen online and in the media.

Among the different uploader groups, videos created by dermatologists scored significantly higher on both the DISCERN and GQS metrics compared to other sources, which is unsurprising given their extensive training in cutaneous health. However, these high-quality contributions represented only 5% of the total sample. This imbalance indicates that most of the online *YouTube* discussion related to fillers is shaped by individuals without specialized expertise in the skin, which may increase the likelihood of misinformation.

Given *YouTube*'s growing prominence as a healthcare information resource, there is a need for greater engagement by dermatologists and certified specialists. Previous studies in dermatology-related social media have demonstrated that professional participation enhances the accuracy and reliability of content

while simultaneously improving public trust and patient education.[14] A stronger presence of dermatologist-created videos on fillers could help counteract misinformation and ensure patients encounter evidence-based content.

Conclusion

Although *YouTube* videos on dermal fillers reached over 47 million viewers and generated high engagement rates, the overall quality of most videos was poor, as demonstrated by the low mean scores on the DISCERN and GQS assessments. Furthermore, most videos were uploaded by non-dermatologists and non-physicians, which may contribute to the inaccuracy of information presented in the available videos. While online videos can be valuable educational tools, information on the internet is not always reliable, may come from uncertified sources, and could set inappropriate patient expectations. This highlights the need for high-quality dermal filler videos on the *YouTube* platform to support informed decision-making and safe patient care.

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Financial Disclosures

C.M.H.: Advisory boards: AbbVie, Amgen, Galderma, Neutrogena, Sanofi, Sun Pharma, UCB; **Honorarium:** AbbVie, Amgen, Arcutis, Celltrion, Galderma, JAMP, Pfizer, Sanofi, Sun Pharma, UCB

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