

Assessment of Quality and Reliability of Short Videos on Photoelectric Anti-Aging on Bilibili and TikTok: A Cross-Sectional Study

Canni Gao, Leixuan Peng, Xinxin Duan, Yixin Zhao, Fengyan Ni, Pan Li, Kuanhou Mou

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Table of Contents

Original Manuscript.....	5
Supplementary Files.....	21

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Abstract

Background: Photoelectric anti-aging technologies, as the core of non-invasive skin anti-aging, have become mainstream in aesthetic dermatology. Short-video platforms (Douyin and Bilibili) have gradually replaced traditional channels as the primary source of public information on this topic, but the uneven content quality (e.g., exaggerated efficacy, unapproved regimens, and missing safety information) and public cognitive gaps pose significant health risks.

Objective: This study aimed to evaluate the quality and reliability of photoelectric anti-aging videos on Douyin and Bilibili using standardized tools, providing evidence for optimizing the information ecosystem.

Methods: A cross-sectional study was conducted. From August 31 to September 1, 2025, 150 initial videos were collected from each platform (logged-out state, comprehensive ranking), and 187 eligible videos (95 from Douyin, 92 from Bilibili) were screened via inclusion/exclusion criteria. Two dermatology residents extracted video characteristics (duration, engagement metrics) and uploader identities (dermatologists/medical institutions, science popularization bloggers, patients/general users), then assessed content quality using the Global Quality Score (GQS), modified DISCERN (mDISCERN), and Patient Education Materials Assessment Tool (PEMAT). Statistical analyses were performed with R 4.4.0 and SPSS 26.0 (Mann-Whitney U test, Kruskal-Wallis H test, Spearman correlation).

Results: Bilibili had a longer median duration (441.5 vs. 116 seconds), higher GQS (median 3.0 vs. 2.0), and better PEMAT-U/A scores (all $P < 0.05$), while Douyin had higher median shares (1103.0 vs. 277.5, $P < 0.05$). Among uploader types: Dermatologists/medical institutions (45.99%) achieved the highest GQS/mDISCERN (median 3.0) and excelled in "indications" (0.65) and "mechanisms" (0.64) but lacked "post-treatment care" (0.17); patients/general users (22.99%) led in "post-treatment care" (0.44) but had poor "mechanisms" (0.19); science popularization bloggers (31.02%) showed balanced content and the best engagement but insufficient "risk coverage". Additionally, strong positive correlations existed between engagement metrics ($r = 0.85-0.91$), but no correlation with quality scores.

Conclusions: This study reveals imbalances in "dissemination efficiency-professional depth" (Douyin vs. Bilibili) and "professionalism-practicality" (among uploaders), along with a disconnect between engagement and quality. Three-tiered strategies (platform supervision, uploader empowerment, public education) are needed to optimize the photoelectric anti-aging information environment and reduce health risks.

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Original Manuscript

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Abstract:

Background: Photoelectric anti-aging technologies, as the core of non-invasive skin anti-aging, have become mainstream in aesthetic dermatology. Short-video platforms (Douyin and Bilibili) have gradually replaced traditional channels as the primary source of public information on this topic, but the uneven content quality (e.g., exaggerated efficacy, unapproved regimens, and missing safety information) and public cognitive gaps pose significant health risks. **Objective:** This study aimed to evaluate the quality and reliability of photoelectric anti-aging videos on Douyin and Bilibili using standardized tools, providing evidence for optimizing the information ecosystem. **Methods:** A cross-sectional study was conducted. From August 31 to September 1, 2025, 150 initial videos were collected from each platform (logged-out state, comprehensive ranking), and 187 eligible videos (95 from Douyin, 92 from Bilibili) were screened via inclusion/exclusion criteria. Two dermatology residents extracted video characteristics (duration, engagement metrics) and uploader identities (dermatologists/medical institutions, science popularization bloggers, patients/general users), then assessed content quality using the Global Quality Score (GQS), modified DISCERN (mDISCERN), and Patient Education Materials Assessment Tool (PEMAT). Statistical analyses were performed with R 4.4.0 and SPSS 26.0 (Mann-Whitney U test, Kruskal-Wallis H test, Spearman correlation). **Results:** Bilibili had a longer median duration (441.5 vs. 116 seconds), higher GQS (median 3.0 vs. 2.0), and better PEMAT-U/A scores (all $P < 0.05$), while Douyin had higher median shares (1103.0 vs. 277.5, $P < 0.05$). Among uploader types: Dermatologists/medical institutions (45.99%) achieved the highest GQS/mDISCERN (median 3.0) and excelled in "indications" (0.65) and "mechanisms" (0.64) but lacked "post-treatment care" (0.17); patients/general users (22.99%) led in "post-treatment care" (0.44) but had poor "mechanisms" (0.19); science popularization bloggers (31.02%) showed balanced content and the best engagement but insufficient "risk coverage". Additionally, strong positive correlations existed between engagement metrics ($\rho = 0.85 - 0.91$), but no correlation with quality scores. **Conclusion:** This study reveals imbalances in "dissemination efficiency-professional depth" (Douyin vs. Bilibili) and "professionalism-practicality" (among uploaders), along with a disconnect between engagement and quality. Three-tiered strategies (platform supervision, uploader empowerment, public education) are needed to optimize the photoelectric anti-aging information environment and reduce health risks.

Keywords: Photoelectric anti-aging technologies; Short-video platforms; Content quality assessment; Standardized assessment tools; Information ecosystem optimization.

I. Introduction

As the core modality for non-invasive skin anti-aging, photoelectric anti-aging technologies—encompassing ablative/non-ablative lasers, monopolar/bipolar radiofrequency (RF), intense pulsed light (IPL), and ultrasound—have become mainstream treatments in aesthetic dermatology. In clinical practice, these technologies exhibit distinct advantages: they possess non-invasive or minimally invasive properties, effectively addressing common aging-related concerns such as skin laxity, fine lines, hyperpigmentation, and uneven skin texture[1–3]. Compared with traditional surgical anti-aging procedures (e.g., facial lifting surgery), they also feature significantly shorter recovery periods[4,5]. Driven by factors including the rise of the "aesthetic economy" and demographic shifts, the global medical aesthetics market has continued to expand. Concurrently, public demand for evidence-based information on photoelectric anti-aging has surged, accompanied by fundamental shifts in information-seeking behavior: the rise of short-video platforms has gradually replaced traditional professional medical consultations or academic literature, emerging as key channels for the public to access information on skin-related medical aesthetics.

Among numerous short-video platforms, TikTok and Bilibili stand out as the two most influential platforms in the Chinese market. With their unique positioning, these two platforms cater to diverse user needs and collectively drive the dissemination of information on photoelectric anti-aging. TikTok's 15–60 second short videos align with users' fragmented viewing habits, enabling the translation of complex medical concepts (e.g., "radiofrequency-induced collagen remodeling") into accessible content. In contrast, Bilibili's 1–5 minute medium-length videos target users seeking in-depth knowledge, allowing for systematic explanations of technical mechanisms (e.g., the difference between broad-spectrum light in intense pulsed light [IPL] and monochromatic light in lasers) and clinical decision-making logic[6]. Covering most users interested in medical aesthetic short videos in China, these two platforms have become core hubs for the dissemination of photoelectric anti-aging information.

However, the lack of standardized content review mechanisms on these platforms results in significant disparities in the quality of photoelectric anti-aging-related videos, posing substantial risks to public health[7]. Specifically, three types of issues are particularly prominent: First, exaggerated efficacy claims (e.g., "permanent wrinkle removal" or "instant firming")—such statements are severely inconsistent with clinical reality, as photoelectric anti-aging typically requires multiple treatments to maintain effects and cannot completely eliminate deep wrinkles. Second, the promotion of unapproved treatment regimens (e.g., using high-energy lasers on skin with sensitivity or active acne inflammation)—

such practices violate clinical guidelines including the Clinical Application Norms for Photoelectric Aesthetic Technology and significantly increase the risk of adverse reactions, such as skin barrier damage and post-inflammatory hyperpigmentation[8]. Third, omission of safety information, including neglect of contraindicated populations (e.g., pregnant women, photosensitive individuals, or patients with autoimmune diseases), which may lead to severe complications such as scar formation or exacerbation of underlying conditions.

Furthermore, the general public has limited professional knowledge of medical aesthetics, resulting in a clear "cognitive gap." For instance, most users confuse the indications of radiofrequency (primarily for skin laxity) and IPL (primarily for pigmentation and vascular issues), leading to inappropriate treatment choices—e.g., selecting laser therapy for skin with active acne inflammation, which instead aggravates redness and scarring. This lack of cognition not only makes the public vulnerable to misleading information but also contributes to a rise in medical aesthetic disputes[8].

Against this backdrop, this study aims to evaluate the quality and reliability of photoelectric anti-aging information on TikTok and Bilibili using three tools: the Global Quality Score (GQS), modified DISCERN (mDISCERN) scale[9] and Patient Education Materials Assessment Tool (PEMAT)[10]. The objectives are to help the public rationally assess their own needs, distinguish between appropriate and inappropriate treatment regimens, and reduce the risk of adverse reactions. For platforms, the study results will provide empirical evidence for establishing targeted review mechanisms—such as developing a professional certification system for medical aesthetic content creators and implementing a mandatory risk warning labeling system for treatment-related videos. For medical practitioners, this study can guide the standardization of science popularization practices, encouraging the integration of evidence-based information (e.g., guideline citations, clinical trial data) into short videos to balance scientific rigor and comprehensibility. Ultimately, this study intends to promote the dissemination of high-quality medical science popularization, optimize the information environment for photoelectric anti-aging, and reduce health risks caused by misleading information in the field of skin-related medical aesthetics.

2. Materials and Methods

2.1 Ethical Approval

This study analyzed publicly accessible short videos related to photoelectric anti-aging on TikTok (TikTok) and Bilibili. No personal privacy information was collected, and no interventions were performed on human subjects. In accordance with the Declaration of Helsinki and domestic ethical guidelines for medical research, combined with the ethical exemption principles for observational studies using public digital data, this study did not require approval from an Institutional Review Board (IRB).

2.2 Study Design and Video Collection

A cross-sectional design was adopted to systematically collect and evaluate short videos on photoelectric anti-aging. The retrieval covered two major mainstream short-video platforms in China (TikTok and Bilibili), with specific parameters as follows. Search keywords: Two core Chinese keywords—"光电抗衰" (photoelectric anti-aging) and "光电护肤" (skin photoelectric therapy)—were used simultaneously to search for videos involving specific technologies (e.g., lasers, radiofrequency, intense pulsed light, ultrasound). Search conditions: All retrievals were conducted in a "logged-out state" to avoid interference from personalized recommendation algorithms, ensuring that search results reflected the platform's default "comprehensive ranking" (integrating metrics such as views, likes, comments, and upload duration) [11]. Retrieval time: Fixed as August 31 to September 1, 2025, to exclude abnormal fluctuations in traffic caused by holidays, e-commerce promotions, or other factors. Sample selection: The top 150 videos under "comprehensive ranking" were selected as initial samples from each platform, resulting in a total of 300 initial samples (150 from TikTok and 150 from Bilibili).

2.3 Inclusion and Exclusion Criteria

Inclusion Criteria: Videos focusing on photoelectric anti-aging treatments and meeting at least one of the following conditions were included. Containing explanations of treatment mechanisms (e.g., "ultrasound stimulates collagen regeneration"); Clearly stating indications (e.g., "Applicable skin types/aging symptoms: fine lines, laxity, hyperpigmentation"); Describing risks/side effects (e.g., "temporary redness after treatment"); Providing post-treatment care guidance (e.g., "sun protection measures").

Exclusion Criteria: Videos meeting any of the following conditions were excluded. Purely advertising content: Only promoting medical aesthetic institutions, photoelectric devices, or skincare products without substantive treatment information; Content unrelated to photoelectric anti-aging: e.g., makeup tutorials, skincare product reviews, or surgical anti-aging procedures (e.g., facelift surgery); Duplicate videos: Identical content uploaded by different accounts, with only the earliest uploaded version retained; Newly released videos: Published within 1 week before retrieval, with unstable engagement data (e.g., likes, comments)[12]. For specific steps, refer to the flowchart.(Figure1)

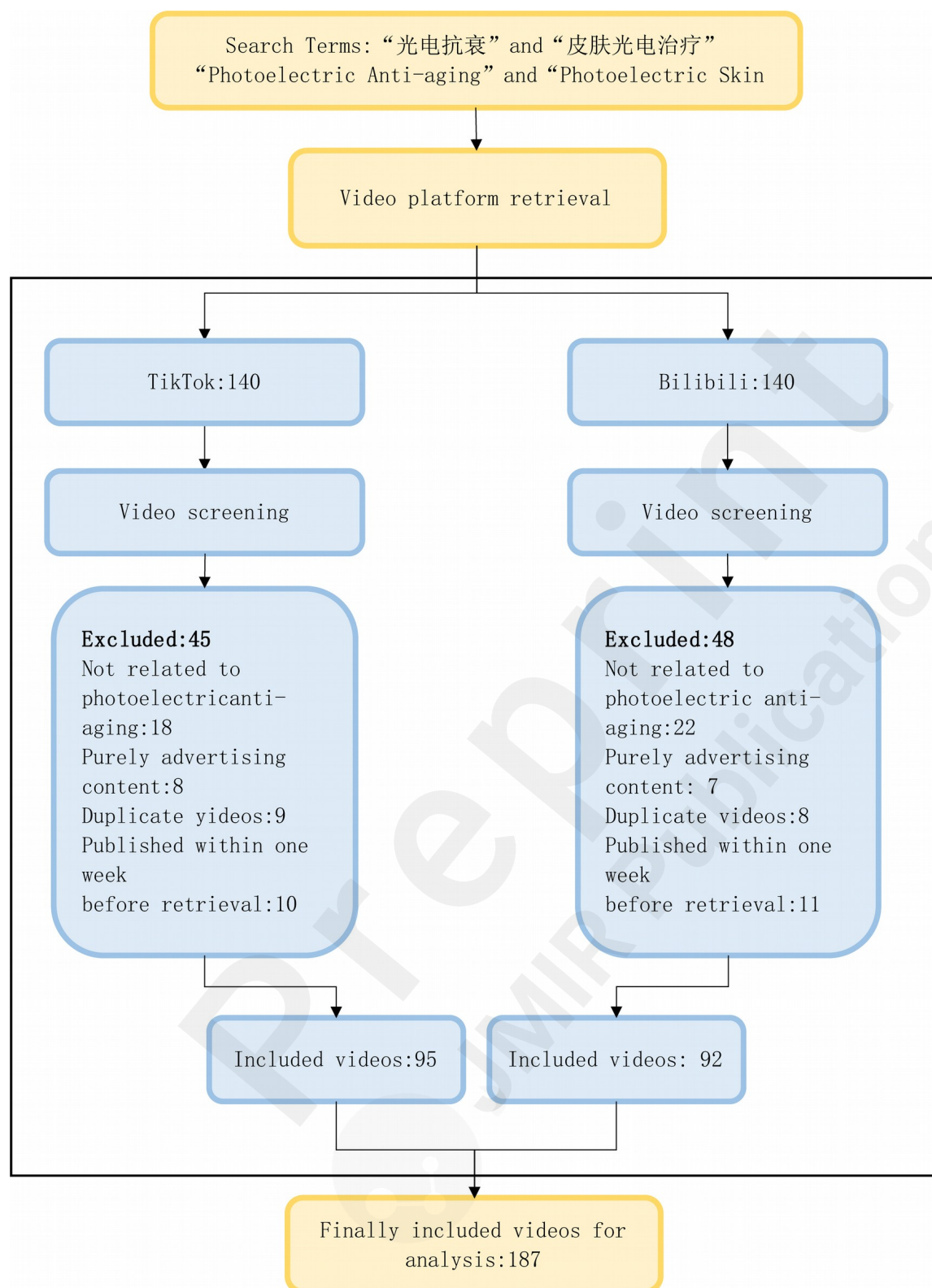


Figure 1:Flowchart of Photoelectric Anti-Aging Video Screening on Bilibili and TikTok Platforms

2.4 Data Extraction

Extraction Process: Two residents with professional qualifications in dermatology independently extracted data from included videos using a pre-designed standardized Excel spreadsheet. In case of discrepancies during extraction, consensus was reached through discussion with a senior chief physician with over 10 years of clinical experience in dermatology to ensure data accuracy.

Extracted Content□Basic video characteristics: Including video duration (seconds), number of likes, comments,

favorites, and shares. All data were recorded as displayed on the platforms on September 1, 2025 (the final day of retrieval), to avoid temporal changes in engagement data and ensure consistency across samples.

Uploader identity classification: Based on platform certification information, content disclosure, and account attributes, uploaders were divided into three mutually exclusive groups: Dermatologists/medical aesthetic institutions: Certified by the platform with displayed professional qualifications (e.g., "Certified Aesthetic Dermatologist") or institutional licenses; Science popularization bloggers: Including beauty influencers and medical aesthetic experience reviewers (without medical qualifications), sharing photoelectric treatment content from the perspective of "experiencers"; Patients/general users: Without professional or institutional certification, with content focusing on first-person experiences of photoelectric treatments.

Video content dimensions: Based on clinical relevance and user decision-making needs, content was categorized into 5 core dimensions: treatment mechanisms, indications, contraindications, potential post-treatment risks/side effects, and post-treatment care/precautions[13].

2.5 Quality and Reliability Assessment

Two residents with professional qualifications in dermatology served as evaluators. Before formal scoring, the evaluators received standardized training covering interpretation of assessment tools, calibration with sample videos, and refinement of scoring criteria to ensure consistency in evaluation standards.

Assessment Tools and Criteria Global Quality Score (GQS): A 5-point scale (1 = poor to 5 = excellent) was used to assess overall content quality across three dimensions: clarity (understandability of treatment steps/mechanisms), accuracy (consistency with clinical guidelines), and comprehensiveness (balance between efficacy and risks). Modified DISCERN (mDISCERN) scale: A 5-item scale (1 = lowest reliability to 5 = highest reliability) was used to evaluate whether content addressed potential user questions (e.g., "How to choose photoelectric technologies for different skin types"), balanced treatment pros and cons, and assisted users in making informed decisions. Patient Education Materials Assessment Tool (PEMAT): Two subscales with percentage scores (0%–100%) were used: Understandability (PEMAT-U): Assessing whether excessive professional terminology was avoided and whether illustrations were used for auxiliary explanation; Actionability (PEMAT-A): Assessing whether clear and actionable guidance was provided (e.g., "Apply SPF50+ sunscreen daily for 1 month after intense pulsed light treatment") [14,15]

Inter-Rater Reliability Cohen's Kappa coefficient was used to measure inter-rater consistency: Kappa > 0.8 indicated "high consistency," 0.6–0.8 indicated "moderate consistency," and a Kappa < 0.6 required re-calibration of scoring criteria [16].

2.6 Statistical Analysis

All statistical analyses were performed using R 4.4.0 software or SPSS 26.0 software, with specific methods as follows. Normality test: The Shapiro-Wilk test was used to assess the distribution characteristics of continuous variables [17]. Descriptive statistics: Normally distributed data were expressed as "mean ± standard deviation (SD)"; non-normally distributed data were expressed as "median (interquartile range) [M (Q1, Q3)]." [18] Inter-group comparison: The Mann-Whitney U test was used for comparisons between two groups (e.g., differences in engagement data and video quality between the two platforms); the Kruskal-Wallis H test was used for comparisons among three or more groups, with pairwise comparisons corrected using the Bonferroni method. Correlation analysis: Spearman's rank correlation coefficient (ρ) was used to analyze the relationships between video duration, engagement metrics, and quality scores [19]. Correlation strength was defined as follows: $|\rho| < 0.2$ (weak correlation), 0.2–0.4 (weak-moderate correlation), 0.4–0.6 (moderate correlation), 0.6–0.8 (strong correlation), and > 0.8 (very strong correlation) [20].

Significance level: A two-tailed test was used, with a significance level of $\alpha = 0.05$. $P < 0.05$ was considered statistically significant.

3. Results

3.1 Analysis of Basic Characteristics and Differences in Videos Across Platforms

A total of 187 videos were included in this study, with 92 (49.20%) from Bilibili and 95 (50.80%) from TikTok (Figure 2). Table 1 shows that there were statistically significant differences between the two platforms in video length, number of shares, PEMAT-U score, GQS score, and PEMAT-A score (all $P < 0.05$), whereas no significant differences were observed in the number of likes, number of collections, number of comments, or mDISCERN score (all $P > 0.05$). Videos on Bilibili had a median duration of 441.5 seconds (approximately 7.36 minutes), while those on TikTok had a significantly shorter median duration of only 116 seconds (approximately 1.93 minutes). The median number of shares for TikTok videos was 1103.00, which was significantly higher than that for Bilibili videos (277.50). In terms of quality assessment, Bilibili videos achieved a median GQS score of 3.00, significantly higher than TikTok's 2.00; Bilibili also outperformed TikTok in PEMAT-U and PEMAT-A scores (both $P < 0.01$) (Figure 3).

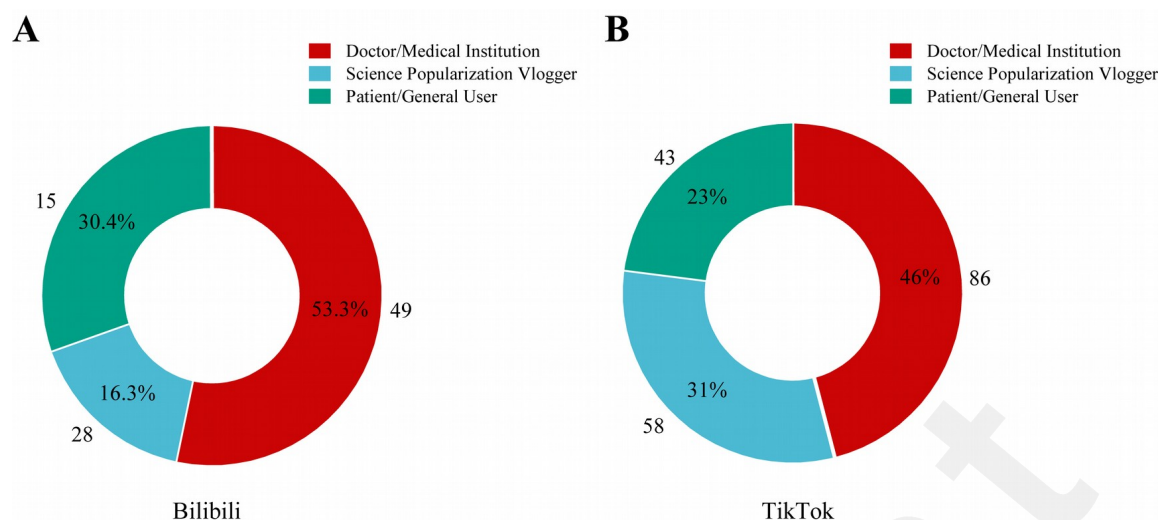


Figure 2: Distribution of Video Uploaders on Bilibili and TikTok Platforms

Variables	Total (n = 187)	Bilibili (n = 92)	TikTok (n = 95)	Statistic	P
Video length, M (Q ₁ , Q ₃)	207.00 104.50 460.50	441.50 272.50 668.25	116.00 (68.00,180.00)	Z=8.70	<0.001
Likes, M (Q ₁ , Q ₃)	2974.00 (794.00, 12046.50)	2648.00 (600.50, 8609.75)	4538.00 (1131.50, 17635.00)	Z=-1.73	0.083
Collections, M (Q ₁ , Q ₃)	1489.00 (334.00, 4895.50)	1499.50 (323.00, 4569.25)	1313.00 (334.50, 5057.00)	Z=-0.27	0.787
Comments, M (Q ₁ , Q ₃)	298.00 (73.50, 879.00)	269.50 (84.00, 600.00)	333.00 (71.00, 1037.50)	Z=-1.01	0.314
Shares, M (Q ₁ , Q ₃)	612.00 (146.50, 3819.00)	277.50 (65.00, 2299.00)	1103.00 (284.50, 5638.50)	Z=-3.34	<0.001
GQS score, M (Q ₁ , Q ₃)	2.00 (2.00, 3.00)	3.00 (2.00, 3.00)	2.00 (2.00, 3.00)	Z=-4.92	<0.001
Mdiscern Score, M (Q ₁ , Q ₃)	2.00 (1.50, 2.00)	2.00 (2.00, 2.00)	2.00 (1.00, 2.00)	Z=-1.68	0.093
PEMAT-U, M (Q ₁ , Q ₃)	54.00 (38.50, 85.00)	54.00 (54.00, 85.00)	54.00 (31.00, 54.00)	Z=-3.99	<0.001
PEMAT-A, M (Q ₁ , Q ₃)	25.00 (25.00, 50.00)	25.00 (25.00, 50.00)	25.00 (25.00, 50.00)	Z=-3.24	0.001

Z: Mann-Whitney test

M: Median, Q₁: 1st Quartile, Q₃: 3st Quartile

Table1: Basic Characteristics and Differences of Videos by Different Platforms

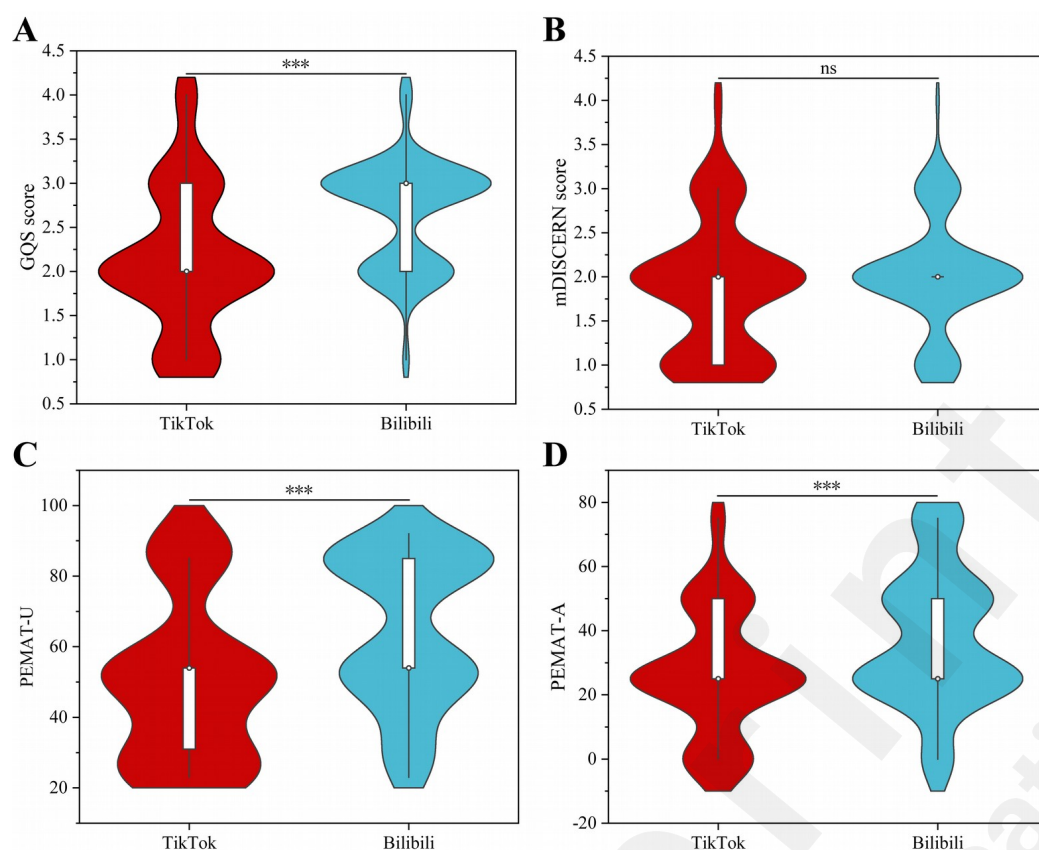


Figure 3: Comparison of Video Quality and Reliability of Photoelectric Anti-Aging Content on Bilibili and TikTok

3.2 Analysis of Basic Characteristics and Differences in Videos Across Uploader Types

Table 2 presents the basic characteristics of videos from three uploader groups: dermatologists/medical aesthetic institutions (86 videos, 45.99%), patients/general users (43 videos, 22.99%), and science popularization bloggers (58 videos, 31.02%). Statistically significant differences were observed among the three groups in the number of collections, number of comments, number of shares, PEMAT-U score, PEMAT-A score, GQS score, and mDISCERN score (all $P < 0.05$), while no significant differences were found in video length or number of likes (both $P > 0.05$). Videos uploaded by science popularization bloggers had the shortest median length (171 seconds), whereas those from patients/general users and dermatologists/medical institutions were relatively longer (median lengths of 196 seconds and 273 seconds, respectively). In terms of engagement metrics (collections, comments, shares), videos by science popularization bloggers performed best, followed by those from the dermatologist group, with the patient group showing the lowest engagement. For quality assessment, the dermatologist/medical institution group achieved the highest median scores in GQS and mDISCERN (both 3.00), while the patient group had the lowest scores (median GQS and mDISCERN scores of 2.00 each). The dermatologist group also ranked highest in PEMAT-U and PEMAT-A scores, with the patient group ranking lowest (Figure 4).

Table 2:
Basic

Variables	Total (n = 187)	Doctor/Medical Institution (n = 86)	Patient/General User (n = 43)	Science Popularization Vlogger (n = 58)	Statistic	P
Video length, M (Q ₁ , Q ₃)	207.00 104.50 460.50	273.00 □83.25 526.75	196.00 122.50,412.50	171.00 113.00,286.00	H=1.45	0.48
Likes, M (Q ₁ , Q ₃)	2974.00 (794.00, 12046.50)	2124.50 (494.75,10000.00)	2502.00 (677.00,10403.00)	5914.50 (1946.75,15603.00)	H=5.43	0.066
Collections, M (Q ₁ , Q ₃)	1489.00 (334.00, 4895.50)	1173.50 (266.75,5090.00)	923.00 (214.50,2391.00)	2081.00 (664.25,6299.00)	H=7.60	0.022
Comments, M (Q ₁ , Q ₃)	298.00 (73.50, 879.00)	250.00 (53.25,634.00)	206.00 (71.00,664.00)	444.00 (181.25,1181.50)	H=7.52	0.023
Shares, M (Q ₁ , Q ₃)	612.00 (146.50, 3819.00)	549.50 (88.25,3889.25)	367.00 (76.50,1432.00)	1243.00 (377.00,4878.25)	H=6.79	0.034
PEMAT-U, M (Q ₁ , Q ₃)	23.00 (0.66, 54.00)	0.54 (0.54,0.85)	46.00 (23.00,54.00)	54.00 (31.00,85.00)	H=141.89	<0.001
PEMAT-A, M (Q ₁ , Q ₃)	0.50 (0.25, 25.00)	0.25 (0.25,0.50)	25.00 (25.00,37.50)	25.00 (25.00,50.00)	H=64.24	<0.001
GQS score, M (Q ₁ , Q ₃)	2.00 (2.00, 3.00)	3.00 (2.00,3.00)	2.00 (2.00,2.00)	2.00 (2.00,3.00)	H=21.01	<0.001
Mdiscern Score, M (Q ₁ , Q ₃)	2.00 (1.50, 2.00)	2.00 (2.00,3.00)	2.00 (1.00,2.00)	2.00 (1.25,2.00)	H=21.72	<0.001

H: Kruskal-waills test

M: Median, Q₁: 1st Quartile, Q₃: 3st Quartile

Characteristics and Differences of Videos by Different Uploaders

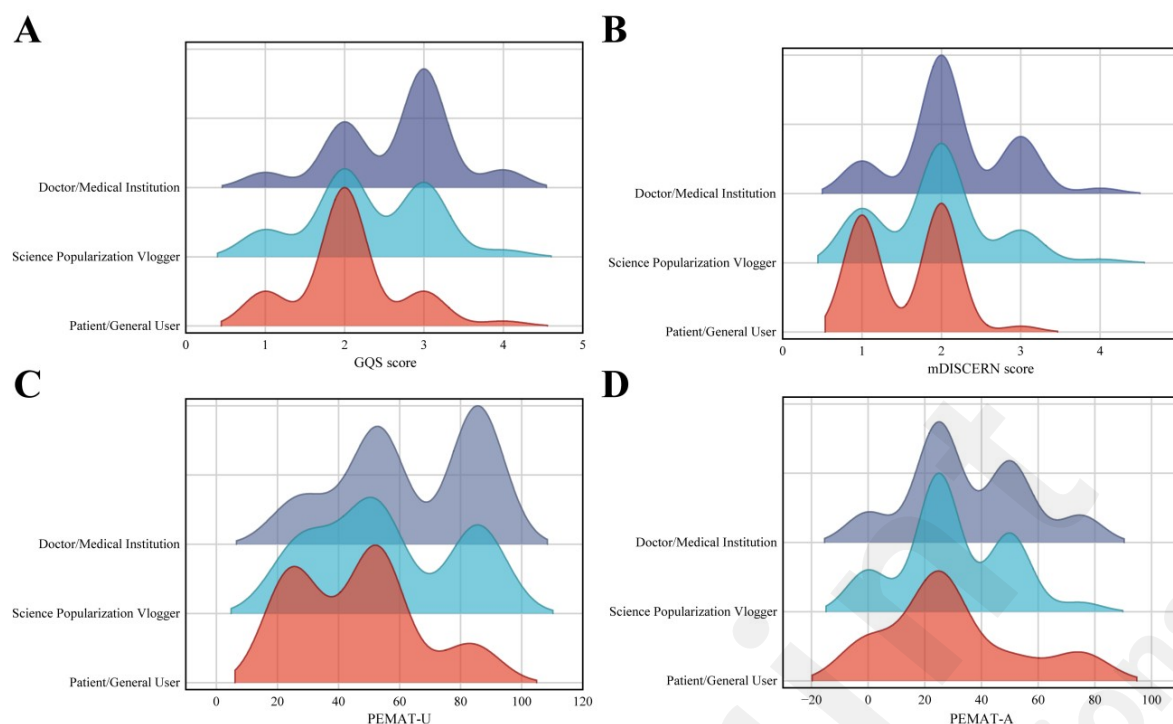


Figure 4: Distribution of Quality and Reliability Scores of Photoelectric Anti-Aging Videos Uploaded by Different Types of Uploaders

3.3 Analysis of Video Content Across Platforms and Uploader Types

As shown in Table 3, the content coverage rate of photoelectric anti-aging videos was analyzed from two dimensions: platform and uploader type. From the platform perspective: Bilibili had higher average scores than TikTok across all five medical-related content dimensions. Significant advantages were observed in "indications" (0.76 vs. 0.49) and "mechanism of action" (0.57 vs. 0.38); Bilibili also slightly outperformed TikTok in "potential risks and side effects" (0.33 vs. 0.22) and "post-treatment precautions" (0.28 vs. 0.22). These results indicate that Bilibili has greater strengths in the breadth of medical information coverage and professional depth (Figure 5A). From the uploader type perspective: The three uploader groups exhibited distinct characteristics in content coverage. Accounts of dermatologists/medical institutions performed best in professional content, achieving the highest average scores in "indications" (0.65) and "mechanism of action" (0.64), but had the lowest score in "post-treatment precautions" (0.17)—reflecting strengths in professional content but weaknesses in post-treatment guidance. Accounts of patients/general users focused on post-treatment care, with the highest score in "post-treatment precautions" (0.44 among the three groups) but insufficient coverage in professional dimensions such as "mechanism of action" (0.19). Science popularization bloggers showed balanced overall coverage, with solid performance in "indications" (0.64) and "mechanism of action" (0.43), falling between the other two groups (Figure 5B).

Table 3
Average Scores of Video Content Across

Variables	Indications	Contraindication	Mechanism of Action	Potential Risks and Side Effects	Postoperative Precautions
Bilibili	0.76	0.2	0.57	0.33	0.28
TikTok	0.49	0.07	0.38	0.22	0.22
Doctor/ Medical Institution	0.65	0.17	0.64	0.31	0.17
Patient /General User	0.56	0.07	0.19	0.23	0.44
Science Popularization Vlogger	0.64	0.12	0.43	0.24	0.22

Different Uploaders and Platforms

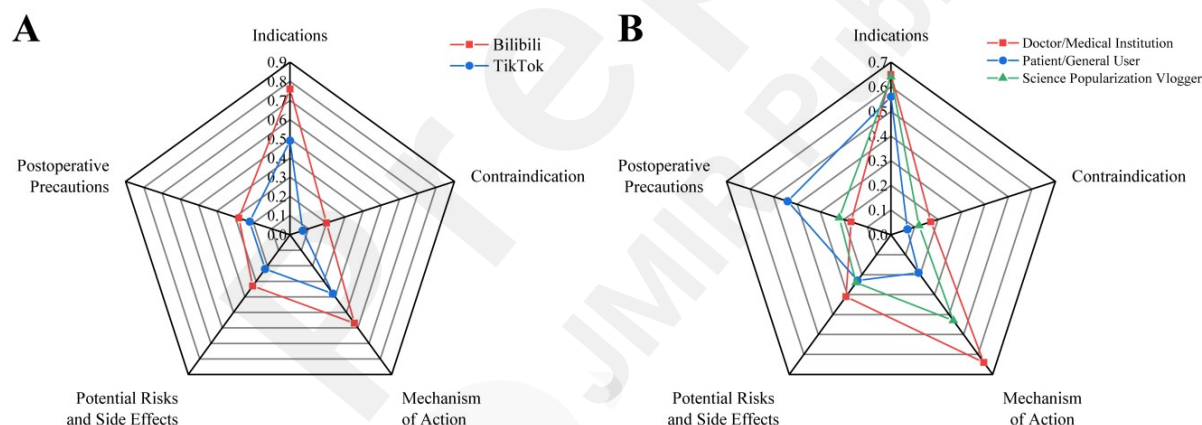


Figure 5: Score Characteristics of the Attributes of Video Content Across Different Uploaders and Platforms

3.4 Correlation Analysis Between Video Metrics and Quality Scores

Spearman correlation analysis revealed (Figure 6) that video length was moderately positively correlated with the number of shares ($p = 0.36$). Strong positive correlations were observed among the number of likes, collections, comments, and shares (p values ranging from 0.85 to 0.91). GQS score showed positive correlations with mDISCERN score ($p = 0.70$), PEMAT-U score ($p = 0.66$), and PEMAT-A score ($p = 0.58$). However, no significant correlations were observed between engagement metrics (e.g., number of likes, number of shares) and quality scores.

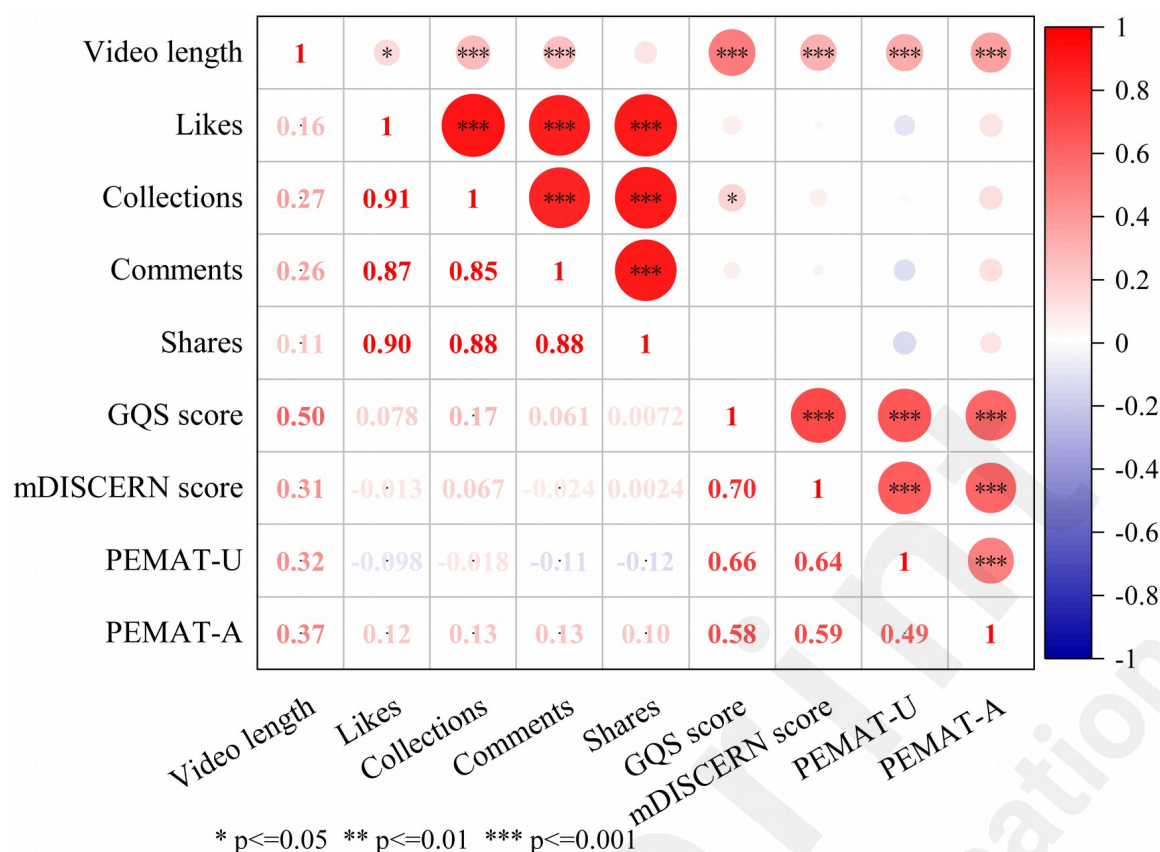


Figure 6 Correlation Matrix from Spearman Correlation Analysis of Video Metrics and Quality Scores

4. Discussion

Against the backdrop of the continuous expansion of the medical aesthetic market driven by the "aesthetic economy," photoelectric anti-aging technologies have become the mainstream choice for skin anti-aging consumption[21], thanks to their core advantages of being non-invasive and having a short recovery period. Short-video platforms, characterized by the real-time and visual nature of information dissemination, have gradually replaced traditional professional consultations and academic literature, emerging as the primary channel for the public to access knowledge about photoelectric anti-aging. However, issues such as the lack of standardized review mechanisms on platforms, uneven information quality, and public cognitive gaps may lead users to develop unreasonable expectations of treatment efficacy, and even trigger health risks such as skin burns and post-inflammatory hyperpigmentation[22]. Based on 187 photoelectric anti-aging short-video samples (92 from Bilibili and 95 from TikTok), this study systematically analyzed the associations between platform dissemination characteristics, uploader role differentiation, and content quality using three standardized tools—GQS, mDISCERN, and PEMAT. The aim was to identify the core contradictions in the current information ecosystem through empirical data, propose targeted optimization strategies, and ultimately promote the dissemination of high-quality photoelectric anti-aging science popularization while reducing risks in aesthetic medical practice.

Divergence in "Dissemination Efficiency vs. Professional Depth".

Across Platforms The results revealed a significant divergence in "dissemination efficiency vs. professional depth" between the two platforms. TikTok is characterized by "short duration (median 116 seconds) and high sharing volume (median 1103.00, four times that of Bilibili)." Its algorithm's "engagement-oriented" nature—prioritizing content with high likes and shares—aligns with users' fragmented reading needs and enables rapid information diffusion[23]. In contrast, Bilibili is distinctly characterized by "long duration (median: 441.5 seconds) and high professionalism," which stands in sharp contrast to Douyin's (TikTok's) positioning of "short duration and high dissemination." Its algorithm design assigns higher weighting to "verticalization and professionalization," making it more conducive to the exposure and dissemination of in-depth medical science popularization content.

From an empirical perspective, Bilibili significantly outperforms Douyin across all core quality indicators: the median GQS score reaches 3.00 (vs. 2.00 for Douyin), and scores for PEMAT-U (Understandability) and PEMAT-A (Actionability) are also higher than those of Douyin (both $P < 0.01$). In terms of professional content coverage, Bilibili achieves a coverage rate of 0.76 for "indications" and 0.57 for "mechanism of action"—its advantages are particularly prominent compared to Douyin's rates of 0.49 and 0.38). For instance, some dermatologist accounts use animated demonstrations to dynamically break down "wavelength differences and differences in target sites of action between

broad-spectrum light in intense pulsed light (IPL) and monochromatic light in lasers," converting the abstract "photothermal effect principle" into visual content. This effectively lowers the public's cognitive threshold for technical principles and aligns with Bilibili's platform positioning of "systematic explanation of clinical decision-making logic."

Notably, however, even though Bilibili performs better in professional dimensions, it still has notable shortcomings: the coverage rate of "potential risk warnings" is only 0.33, and that of "post-treatment care" is 0.28. This indicates that in-depth science popularization platforms have also not fully addressed the core issues of "neglect of contraindicated populations" and "omission of post-treatment guidance." Specifically, the lack of two types of key information is particularly prominent. Insufficient reminders about contraindicated populations: For example, some videos explaining IPL fail to clearly state that "IPL treatment is contraindicated for individuals with photosensitive skin or pregnant women" and do not mention clinical contraindications such as "those taking retinoid medications need to discontinue medication for 3 months before undergoing treatment". Lack of post-treatment care guidance: Most videos only mention that "sun protection is required after treatment" but fail to elaborate on actionable details such as "applying broad-spectrum sunscreen with SPF50+ daily within 1 week after treatment, avoiding washing the face with hot water, and prohibiting the use of irritating skincare products (e.g., those containing alcohol or acid-based ingredients)." Furthermore, they do not advise on emergency management protocols such as "if erythema, edema, or peeling lasts more than 48 hours, seek medical attention promptly and use recombinant human epidermal growth factor derivatives to promote repair." These information gaps may cause users to prolong the recovery period due to improper care or even induce skin barrier damage[24,25].

Gradient Differences in "Professionalism vs. Practicality" Among Uploader Types.

As a core variable in content production, uploader identity exhibits gradient differences in "professionalism vs. practicality," with a strong correlation to content quality. Dermatologist/medical institution accounts (45.99%): As core producers of professional information, their content performed best in professional dimensions such as "indications" (0.65) and "mechanism of action" (0.64), with median GQS and mDISCERN scores of 3.00. For example, through clinical case analyses, they clarified the difference in indications between "radiofrequency for skin laxity and IPL for pigmentation," effectively addressing the public's confusion regarding technology indications. However, this group has a notable shortcoming: an average score of only 0.17 in "post-treatment precautions," failing to align with the clinical logic that "post-treatment care impacts efficacy and safety[26]." This may lead to suboptimal treatment outcomes or even skin sensitivity due to user improper care. Patient/general user accounts (22.99%): Their content centers on first-person experience sharing, with strengths concentrated in "post-treatment precautions" (average score 0.44, the highest among the three groups). For instance, they provide detailed descriptions of "methods to alleviate redness after laser treatment" and "selection of sunscreen SPF levels," filling the practical information gap left by dermatologist accounts[27]. Nevertheless, this group has prominent professional shortcomings: an average score of only 0.19 in "mechanism of action," and a tendency to overlook individual skin type differences (e.g., varying post-treatment reactions between sensitive and tolerant skin). This may mislead other users into blind imitation, increasing the risk of "inappropriate treatment choices." Science popularization blogger accounts (31.02%): Acting as "translators of professional knowledge," their content exhibits balanced characteristics, with average scores in "indications" (0.64) and "mechanism of action" (0.43) falling between the other two groups. They also achieved the best performance in engagement metrics. For example, they use analogical explanations (e.g., comparing radiofrequency to "a 'workout' for skin collagen") to lower the understanding threshold of professional concepts, while supplementing post-treatment care advice based on personal experience—achieving a balance between "scientific rigor, accessibility, and practicality." However, the core issue for this group is insufficient coverage of "potential risks" (lower than that of dermatologist accounts). Some videos downplay risks such as "post-treatment hyperpigmentation" and "skin barrier damage" to enhance the "seeding effect" (i.e., stimulating desire to try the treatment).

Furthermore, Spearman correlation analysis showed strong positive correlations among engagement metrics (likes, collections, comments, shares) ($p=0.85-0.91$), but no significant correlation with quality scores (GQS, mDISCERN). This result confirms the core contradiction that "high popularity does not equal high quality": high-engagement content from science popularization bloggers often relies on visual impact (e.g., before-and-after comparison images) and emotional appeal rather than scientific value. In contrast, dermatologist accounts, despite having the highest quality, exhibit lower engagement than science popularization bloggers—reflecting the public's insufficient ability to identify professional content and their vulnerability to "traffic-oriented" content[12,18]. This further exacerbates issues such as cognitive gaps and an increase in medical aesthetic disputes.

Adaptation of Assessment Tools and Recommendations for Optimization.

The three tools (GQS, mDISCERN, PEMAT) used in this study exhibited good consistency, with strong positive correlations between GQS and mDISCERN ($p=0.70$) and between GQS and PEMAT-U ($p=0.66$). This indicates their effectiveness in synergistically evaluating the "overall quality, reliability, and understandability" of photoelectric anti-aging short videos, providing a standardized basis for future content quality monitoring. However, the study also identified adaptation shortcomings of these tools in the aesthetic medical context, primarily manifested in dimension

gaps: existing tools do not include specialized scoring items tailored to the clinical specificities of photoelectric anti-aging. For example, the "comprehensiveness" dimension of GQS does not weight the importance of "post-treatment care," and PEMAT does not cover key information such as "device compliance" and "institutional qualifications"—which are directly related to the risk of "promoting unapproved treatment regimens" mentioned in the Introduction. It is recommended to optimize aesthetic medicine-specific assessment tools in future studies: add a weighting for "post-treatment guidance completeness" to GQS, and supplement indicators for "qualification mention rate" and "device compliance" to PEMAT-A. This will enhance the relevance and comprehensiveness of the tools for the aesthetic medical scenario.

Three-Tiered Optimization Strategies: Platform Supervision, Uploader Empowerment, and Public Education.

Combining the study results with the core issues outlined in the Introduction, three-tiered optimization strategies covering "platform supervision, uploader empowerment, and public education" are proposed below. Platform Supervision: Establish a "Quality-First" Content Ecosystem. Optimization directions for TikTok: To address the "high dissemination vs. low quality" contradiction, adjust the weighting of recommendation algorithms by incorporating GQS and PEMAT scores into core recommendation metrics (e.g., content with a quality score ≥ 3.0 is eligible for entry into high-traffic pools) to reduce the exposure of low-quality content. Create an exclusive "photoelectric anti-aging" content tag, mandating that all related videos include a risk warning (e.g., "This video does not constitute medical advice; consult a professional doctor before treatment"). Additionally, require commercial accounts (e.g., medical aesthetic institutions) to submit qualification certificates (e.g., medical institution practice licenses and physician qualification certificates) before publishing content, preventing the dissemination of "unapproved regimens." Deepening directions for Bilibili: Leveraging its strength in "high professionalism," encourage dermatologist accounts to supplement "post-treatment care" content—for example, launching a "Comprehensive Photoelectric Anti-Aging Guide" topic that integrates three-dimensional information covering "technical principles, indications, and post-treatment care." Establish a "dermatologist-patient" content collaboration mechanism, allowing patient accounts' care experiences to complement the professional content of dermatologist accounts (e.g., dermatologists explain "the logic of post-laser care," while patients share "practical operation details")—filling the "professional-practical" gap[28,29].

Uploader Empowerment: Define Role-Specific Content Standards. Dermatologists/medical institutions: Should strengthen the popularization of "post-treatment precautions," developing scenario-specific care guides (e.g., "sun protection protocols after summer laser treatment" and "repair key points after radiofrequency treatment for sensitive skin") based on clinical cases. Avoid "absolute efficacy claims" (e.g., "100% wrinkle removal") and emphasize "individual differences" and "the need for multiple treatments" to align with clinical reality[24,30]. Patients/general users: Should include a "personal condition statement" in their experience sharing (e.g., "I have tolerant skin; caution for sensitive skin") and avoid absolute expressions. At the end of their content, guide users to "refer to the professional interpretations of dermatologist accounts," establishing an "experience sharing-professional verification" information chain to reduce the risk of misleading. Science popularization bloggers: Should focus on improving coverage of "potential risks," explaining risks through "comparative formats" (e.g., "correct vs. incorrect treatment scenarios," such as "consequences of laser treatment during the inflammatory phase") while maintaining a "professional-accessible" balance[31].

Public Education: Enhance "Rational Decision-Making" Capabilities. The public should be guided to establish a "three-step information screening method" to enhance their ability to make rational decisions: ①Prioritize dermatologist/certified institution accounts on Bilibili (leveraging Bilibili's high-quality characteristics), focusing on "indication matching" and "risk warning completeness" rather than solely focusing on engagement popularity. ②When referencing patient sharing, verify consistency between their own skin type (e.g., sensitive vs. tolerant skin) and treatment needs (e.g., wrinkle reduction vs. spot removal) with those of the sharer, avoiding blind imitation of "individual experiences." ③Proactively learn basic concepts (e.g., the difference between radiofrequency and IPL), remain vigilant of exaggerated claims such as "no risk," "immediate results," and "permanent effects," and seek offline verification through dermatology clinics in public hospitals when necessary—reducing the risk of "inappropriate treatment choices."

Limitations

This study had several limitations. First, the samples were sourced exclusively from two core platforms (Douyin [TikTok] and Bilibili) and did not cover other mainstream short-video platforms in China. Additionally, sample collection was restricted to a specific short-term window (August 31 to September 1, 2025). While this design enabled accurate capture of the information characteristics of the two target platforms, it limits the full extrapolation of results to the entire landscape of photoelectric anti-aging information across all short-video platforms. Nevertheless, this limitation does not undermine the core argument regarding the differentiated characteristics of "dissemination efficiency vs. professional depth" between the two platforms. Second, the scene-specific adaptability of the assessment tools requires further optimization. Although the GQS, mDISCERN, and PEMAT tools have undergone standardized validation, they were not developed specifically for the aesthetic medicine scenario of photoelectric anti-aging. Consequently, they fail to fully cover aesthetic medicine-specific assessment dimensions such as "device compliance" and "institutional qualification

labeling." However, the tools were still able to effectively distinguish gradients of content quality, which does not compromise the reliability of the overall quality assessment conclusions.

5. Conclusions

Through an empirical analysis of 187 photoelectric anti-aging short videos, this study confirmed that Bilibili and TikTok exhibit differentiated characteristics in content dissemination: "professionalism-oriented" and "dissemination-oriented," respectively. Leveraging its advantage of longer duration, Bilibili demonstrates superior performance in the coverage of professional content and overall quality, making it a suitable carrier for professional knowledge dissemination. In contrast, TikTok achieves rapid information diffusion through short duration and high engagement, but suffers from insufficient content quality and risk warnings, posing potential misleading risks. Among different uploader types, dermatologist/institution accounts have the highest professionalism but show weakness in post-treatment guidance; patient accounts provide valuable care-sharing content but lack professionalism; and science popularization blogger accounts balance professionalism and practicality. These three groups need to achieve synergistic complementarity.

Meanwhile, the study confirmed that the "quality-popularity paradox" objectively exists in the dissemination of photoelectric anti-aging information, and insufficient coverage of key information (e.g., risks, care guidance) is widespread. To address this situation, a three-party mechanism—"platform supervision (algorithm optimization + qualification review) - uploader self-regulation (professionalism + balance) - public discernment (literacy improvement + rational reference)"—should be established. Through targeted measures, the scientificity and practicality of photoelectric anti-aging content can be enhanced. Ultimately, this will help the public acquire anti-aging knowledge while avoiding health risks, and promote the standardized development of medical aesthetic information dissemination.

Reference:

1. Czajkowska J, Juszczak J, Bugdol MN, Glenc-Ambroży M, Polak A, Piejko L, Pietka E. High-frequency ultrasound in anti-aging skin therapy monitoring. *Sci Rep* 2023 Oct 18;13(1):17799. PMID:37853086
2. Juhász M, Korta D, Mesinkovska NA. A Review of the Use of Ultrasound for Skin Tightening, Body Contouring, and Cellulite Reduction in Dermatology. *Dermatol Surg* 2018 July;44(7):949–963. PMID:29846343
3. Arminda A. Intense Pulsed Light (IPL) for the treatment of vascular and pigmented lesions. *J Cosmet Dermatol* 2024 Apr;23 Suppl 1:1–6. PMID:38587306
4. Wortsman X, Ferreira-Wortsman C. Ultrasound in Sports and Occupational Dermatology. *J Ultrasound Med* 2021 Aug;40(8):1675–1692. PMID:33155699
5. Rezaee Khiabanloo S, Jebreili R, Aalipour E, Eftekhari H, Saljoughi N, Shahidi A. Innovative techniques for thread lifting of face and neck. *J Cosmet Dermatol* 2019 Dec;18(6):1846–1855. PMID:31050152
6. Liu J, Huang R, Ren J, Li P, Wang P. The intention to use short videos for health information among Chinese adults: Based on the technology acceptance model. *Digit Health* 2025;11:20552076251335519. PMID:40297363
7. Lai Y, Liao F, He Z, Lai W, Zhu C, Du Y, Li Z. The status quo of short videos as a health information source of *Helicobacter pylori*: a cross-sectional study. *Front Public Health* 2023;11:1344212. PMID:38259733
8. Al-Rawi A, Blackwell B, Zemenchik K, Lee K. Twitter Misinformation Discourses About Vaping: Systematic Content Analysis. *J Med Internet Res* 2023 Nov 10;25:e49416. PMID:37948118
9. Charnock D, Shepperd S, Needham G, Gann R. DISCERN: an instrument for judging the quality of written consumer health information on treatment choices. *J Epidemiol Community Health* 1999 Feb;53(2):105–111. PMID:10396471
10. Shoemaker SJ, Wolf MS, Brach C. Development of the Patient Education Materials Assessment Tool (PEMAT): a new measure of understandability and actionability for print and audiovisual patient information. *Patient Educ Couns* 2014 Sept;96(3):395–403. PMID:24973195
11. Wang L, Chen Y, Zhao D, Xu T, Hua F. Quality and Dissemination of Uterine Fibroid Health Information on TikTok and Bilibili: Cross-Sectional Study. *JMIR Form Res* 2025 Aug 1;9:e75120. PMID:40749219
12. Wang H, Zhang H, Cao J, Zhang F, Xiong W. Quality and content evaluation of thyroid eye disease treatment

- information on TikTok and Bilibili. *Sci Rep* 2025 July 11;15(1):25134. PMID:40646154
13. MacLeod MG, Hoppe DJ, Simunovic N, Bhandari M, Philippon MJ, Ayeni OR. YouTube as an information source for femoroacetabular impingement: a systematic review of video content. *Arthroscopy* 2015 Jan;31(1):136–142. PMID:25150406
 14. Zhang Y, Huang C, Tong Y, Teng Y, Wan B, Huang J, Zeng G, Zong S. Quality assessment of spinal cord injury-related health information on short-form video platforms: Cross-sectional content analysis of TikTok, Kwai, and BiliBili. *Digit Health* 2025;11:20552076251374226. PMID:40918080
 15. Liu H, Peng J, Li L, Deng A, Huang X, Yin G, Ming J, Luo H, Liang Y. Assessment of the reliability and quality of breast cancer related videos on TikTok and Bilibili: cross-sectional study in China. *Front Public Health* 2023;11:1296386. PMID:38317686
 16. Mohammadzadeh Azarabadi J, Gökkuş K, Shalalfa N. Evaluating the quality of osteonecrosis and avascular necrosis content on youtube: a multidimensional analysis using DISCERN, JAMA, and GQS tools. *J Orthop Surg Res* 2025 July 22;20(1):695. PMID:40696472
 17. Chao M, Lei J, He R, Jiang Y, Yang H. TikTok use and psychosocial factors among adolescents: Comparisons of non-users, moderate users, and addictive users. *Psychiatry Res* 2023 July;325:115247. PMID:37167877
 18. Guan J-L, Xia S-H, Zhao K, Feng L-N, Han Y-Y, Li J-Y, Liao J-Z, Li P-Y. Videos in Short-Video Sharing Platforms as Sources of Information on Colorectal Polyps: Cross-Sectional Content Analysis Study. *J Med Internet Res* 2024 Oct 29;26:e51655. PMID:39470708
 19. Brand C, Fochesatto CF, Gaya AR, Schuch FB, López-Gil JF. Scrolling through adolescence: unveiling the relationship of the use of social networks and its addictive behavior with psychosocial health. *Child Adolesc Psychiatry Ment Health* 2024 Aug 31;18(1):107. PMID:39217325
 20. Navalón-González M, Montenegro-Espinosa JA, Gutiérrez-Espinoza H, Olivares-Arancibia J, Yañez-Sepúlveda R, Duclos-Bastías D, Garrido-Miguel M, Mesas AE, López-Gil JF, Jiménez-López E. Associations between social networks, messaging apps, addictive behaviors, and sleep problems in adolescents: the EHDLA study. *Front Behav Neurosci* 2025;19:1512535. PMID:39926323
 21. Li M, Li X, Yang F, Zhang T. They are more beautiful than me! How social media use increases women's body-related envy and cosmetic surgery consideration. *Front Psychol* 2025;16:1628208. PMID:40918284
 22. Tylka TL, Rodgers RF, Calogero RM, Thompson JK, Harriger JA. Integrating social media variables as predictors, mediators, and moderators within body image frameworks: Potential mechanisms of action to consider in future research. *Body Image* 2023 Mar;44:197–221. PMID:36709634
 23. Zhou W. Dilemma and coping strategies of news communication based on artificial intelligence and big data. *Heliyon* 2024 Feb 15;10(3):e25398. PMID:38352794
 24. Szeto MD, Mamo A, Afrin A, Militello M, Barber C. Social Media in Dermatology and an Overview of Popular Social Media Platforms. *Curr Dermatol Rep* 2021;10(4):97–104. PMID:34692234
 25. Cai Y, Zhu Y, Wang Y, Xiang W. Intense pulsed light treatment for inflammatory skin diseases: a review. *Lasers Med Sci* 2022 Oct;37(8):3085–3105. PMID:35913536
 26. Gold M, Andriessen A, Cohen JL, Goldberg DJ, Grover K, Hu S, Mandy SH, Vega JMK. Pre-/postprocedure measures for laser/energy treatments: A survey. *J Cosmet Dermatol* 2020 Feb;19(2):289–295. PMID:31840388
 27. Jones IT, Guiha I, Fabi SG. Open-label study assessing the efficacy and tolerability of topical skincare and sun protection products following intense pulsed light treatment. *J Cosmet Dermatol* 2018 June;17(3):441–447. PMID:29164778
 28. Davis DMR, Drucker AM, Alikhan A, Bercovitch L, Cohen DE, Darr JM, Eichenfield LF, Frazer-Green L, Paller AS, Schwarzenberger K, Silverberg JI, Singh AM, Wu PA, Sidbury R. Guidelines of care for the management of

atopic dermatitis in adults with phototherapy and systemic therapies. *J Am Acad Dermatol* 2024 Feb;90(2):e43–e56. PMID:37943240

29. Ware OR, Guiyab J, Okoye GA. Phototherapy in Skin of Color. *Dermatol Clin* 2020 Jan;38(1):63–69. PMID:31753193
30. Tan MG, Jo CE, Chapas A, Khetarpal S, Dover JS. Radiofrequency Microneedling: A Comprehensive and Critical Review. *Dermatol Surg* 2021 June 1;47(6):755–761. PMID:33577211
31. Rezapour A, Arabloo J, Moradi N, Ehsanzadeh SJ, Hourzad M, Alipour V. Safety and Effectiveness of Endodermal Radiofrequency for Skin Rejuvenation: A Systematic Review. *Aesthetic Plast Surg* 2023 Feb;47(1):378–386. PMID:36178511

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Author Contributions

CG performed statistical analysis on the data collected from Douyin (TikTok) and Bilibili platforms and drafted the manuscript. LP and XD collected videos from Douyin (TikTok) and Bilibili, and categorized the videos after reviewing their content. YZ and NF participated in the review and editing of the manuscript. KM and PL provided funding support, designed the study protocol, and revised the manuscript. All authors contributed to the article and approved the final submitted version.

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Supplementary Files