Research Square

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Quality and Engagement of Rosacea-related Short Videos on Chinese Platforms RedNote and TikTok: A Cross-sectional Analysis

Yu Han

hanyu0113@163.com

Department of Dermatology, Civil Aviation General Hospital

Ming Li

Department of Dermatology, Beijing Friendship Hospital, Capital Medical University

Jianlei Wang

Department of Dermatology, Civil Aviation General Hospital

Research Article

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Abstract

Background

Rosacea is a chronic, relapsing inflammatory skin disease. This study aimed to evaluate the quality, characteristics, and user engagement of rosacea-related short videos on the Chinese platforms RedNote and TikTok, and to explore associations between engagement indicators and video quality.

Methods

A cross-sectional analysis was conducted on Chinese-language rosacea-related videos retrieved from RedNote and TikTok on April 14, 2026. Video characteristics, user types, and engagement indicators (likes, favorites, comments, and shares) were recorded. Video quality was assessed using the modified development of a quality index for health information (mDISCERN), global quality score (GQS), and video information and quality index (VIQI). Spearman correlation analysis was performed to assess associations between engagement indicators and quality scores.

Results

A total of 405 videos were included (98 RedNote, 307 TikTok). TikTok had a higher proportion of videos uploaded by medical personnel and achieved higher mDISCERN and total VIQI scores than RedNote, whereas GQS scores were similar between platforms. Overall video quality on both platforms was medium to low. Large effect sizes in mDISCERN and total VIQI scores were observed between medical and non-medical uploaders. Four engagement indicators were strongly positively correlated with each other. Total VIQI score was strongly positively correlated with all engagement indicators and mDISCERN score, but only weakly correlated with GQS score.

Conclusion

Rosacea-related video quality on TikTok is better than RedNote, but both are suboptimal. Medical uploaders produce higher-quality content, highlighting the need to promote evidence-based, professionally generated, and engaging rosacea content on short-video platforms.

1 Introduction

Rosacea is a chronic, relapsing inflammatory skin disease that predominantly affects the central face and is commonly characterized by recurrent flushing, persistent erythema, telangiectasia, papules and pustules, and burning or stinging sensations[1–3]. A global study reports that an overall prevalence of rosacea is approximately 5.1% [4]. Beyond the cutaneous manifestations, rosacea can adversely affect

patients' quality of life, emotional well-being, and sleep [5–7]. A study conducted in China shows that the mean dermatology life quality index score among patients with rosacea is 11.6, indicating a moderate to severe impact on quality of life [5]. Another study from China reveals that patients with rosacea have lower physical and mental health scores, as well as higher levels of anxiety and sleep disturbance [6]. In addition, rosacea is often misidentified as "sensitive skin" or "allergy," which may delay standardized diagnosis and treatment [8]. Therefore, timely and accurate access to health information is particularly important for the recognition, treatment, and daily management of rosacea.

With the development of the mobile internet and algorithm-driven recommendation platforms, short-video platforms such as RedNote, TikTok, and YouTube have become important channels through which the public accesses health information [9–12]. As rosacea with visually identifiable features, short videos can intuitively present cutaneous manifestations, changes before and after treatment, skincare routines, and healthcare-seeking experiences [9, 13]. Survey data indicate that among young female TikTok users in the United States, 65.5% had actively sought health information on TikTok, while 92.4% had been passively exposed to health-related content [14]. However, the quality of health information disseminated through short videos remains uncertain. Studies of acne-related short videos have shown that content is produced by a diverse range of sources, and videos posted by dermatologists or professional skin-management institutions generally have higher informational quality [10, 15]. Studies of rosacea-related videos on YouTube have further demonstrated that social medical videos from non-medical sources tend to have lower accuracy and quality [9, 16]. Nevertheless, the quality of short-video health information on rosacea available on RedNote and TikTok remains unclear.

In this study, we aimed to systematically evaluate short videos related to rosacea on two Chinese platforms, RedNote and TikTok. Video characteristics, user types and quality were analyzed. In addition, we explored the relationships between user engagement indicators and video quality scores. By identifying platform-specific differences in content quality and engagement patterns, this study may provide evidence to support the optimization of online health communication concerning rosacea.

2 Methods

2.1 Study design and video acquirement

A cross-sectional study was performed by retrieving rosacea-related short videos through the native search functions of RedNote and the Chinese version of TikTok. On April 14, 2026, a systematic search was conducted on both platforms using the Chinese term "□□□□" (rosacea). To reduce potential bias arising from personalized recommendation algorithms, a newly registered account was created and used for data retrieval on each platform. All data analyzed in this study were publicly available, and no user contact or interaction occurred; accordingly, ethical approval wasn't required.

Videos were considered eligible if they met both of the following criteria: (1) the content explicitly addressed rosacea, and (2) the video was presented in Chinese. Videos were excluded if they met any of the following criteria: (1) repeat content; (2) promotional or advertising content; (3) content unrelated to rosacea; (4) corrupted or inaccessible videos; or (5) non-original videos.

2.2 Video characteristics

RedNote and TikTok platforms recorded multiple video characteristics, including user types (medical personnel and non-medical personnel) and video engagement indicators (likes, favorites, comments and shares).

2.3 Video quality assessment

The video quality was evaluated via three validated tools: the modified development of a quality index for health information (mDISCERN), the global quality score (GQS), and the video information and quality index (VIQI). All videos were independently assessed by two reviewers, and any disagreements were resolved through consultation with a third reviewer, who helped determine the final scores. The mDISCERN consists of five items designed to assess the credibility of video content. Each affirmative ("yes") response is assigned 1 point, whereas each negative ("no") response receives 0 points. Higher total mDISCERN score indicated greater credibility of the video content [17]. The GQS was used to evaluate the overall quality of the videos in terms of clarity, accuracy, reliability, and usefulness in providing health-related guidance to viewers. Scores range from 1 to 5, with higher scores indicating better overall content quality [18]. The VIQI assesses video quality across four domains: information flow, accuracy, quality, and precision, represented as VIQI-1, VIQI-2, VIQI-3, and VIQI-4, respectively. Higher total VIQI score indicate better overall video quality [18–20]. Detailed descriptions of these assessment tools were provided in **Supplementary Tables 3–5**.

2.4 Statistical analysis

All statistical analyses were conducted using R software (version 4.5.3). The normality of continuous variables was assessed using the Shapiro-Wilk test, and homogeneity of variance for normally distributed variables was evaluated with Levene's test. For continuous variables, data from groups showing normal distributions, regardless of whether variances were equal or unequal, were expressed as mean ± standard deviation and compared using the independent-samples t test. When either group did not conform to a normal distribution, the data were presented as median (interquartile range) and compared using the Mann-Whitney U test. Categorical variables were presented as N (%), and between-group comparisons were performed using the chi-square test or Fisher's exact test. To reduce the risk of false positives arising from multiple comparisons, within-group *P* values were adjusted using the Holm-Bonferroni method. Effect sizes were expressed as the absolute rank-biserial correlation coefficient (|rrb|), with values of ≥ 0.5, 0.3–0.5, and < 0.3 interpreted as large, moderate, and small effects, respectively [21, 22]. The annual number of rosacea-related videos on RedNote and TikTok was analyzed for the period from 2020 to 2026. In addition, Spearman correlation analysis was performed to examine the associations between video engagement indicators and video quality scores. Correlations were

reported as Spearman's rank correlation coefficient (r_s), with r_s values of ≥ 0.5, 0.3–0.5, and < 0.3 considered strong, moderate, and weak, respectively [23]. Bilateral $P < 0.05$ was set as statistical significance.

3 Results

3.1 Video screening

The screening process of rosacea-related videos was displayed in Fig. 1. The initial search identified 101 videos from RedNote and 308 videos from TikTok. On RedNote, 3 advertisements were excluded, leaving 98 videos for inclusion. On TikTok, 1 incoherent video was excluded, resulting in 307 included videos. In total, 405 videos from the two platforms were included for subsequent analysis.

3.2 Video characteristic and quality

The number of videos on rosacea was analyzed on RedNote and TikTok platforms from 2020 to 2026 (Fig. 2). On RedNote, among 98 rosacea-related videos, 51.02% (50/98) videos were uploaded in 2025, followed by 31.63% (31/98) in 2026. On TikTok, among 308 videos, 58.12% (179/308) were uploaded in 2025, followed by 17.53% (54/308) in 2026.

There was a significant different in the user types of medical personnel and non-medical personnel between RedNote and TikTok ($P < 0.001$). The proportion of medical personnel was higher on TikTok than that of on RedNote (87.95% vs. 26.53%) (**Supplementary Table 1**). Moreover, the number of favorites was higher on RedNote than that of on TikTok (82.00 (20.75, 553.25) vs. 41.00 (8.00, 229.50), $P = 0.011$). For mDISCERN score (2.00 (2.00, 3.00) vs. 1.00 (1.00, 2.00), $P < 0.001$) and total VIQI score (14.00 (13.00, 16.00) vs. 12.00 (10.00, 14.00), $P < 0.001$), they were higher on TikTok than those of on RedNote (**Supplementary Table 1**). Violin diagram displayed the distribution of video quality scores on RedNote and TikTok platforms (Fig. 3).

To further reduce the risk of false-positive findings, we reported the |rrb| as the effect size to assess the magnitude and statistical robustness of differences between the two platforms in video engagement indicators and quality scores (Fig. 4). Our results revealed significant difference in mDISCERN score (|rrb| = 0.59, $P < 0.001$), which exceeded 50% in magnitude and represented large effect size. The total VIQI score showed a significant difference between RedNote and TikTok, with a moderate effect size (|rrb| = 0.42, $P < 0.001$). In addition, there were no significant differences between RedNote and TikTok in likes (|rrb| = 0.06, $P = 1.000$), favorites (|rrb| = 0.17, $P = 1.000$), comments (|rrb| = 0.12, $P = 1.000$), shares (|rrb| = 0.00, $P = 1.000$) and GQS score (|rrb| = 0.01, $P = 1.000$), all of which had small effect sizes.

3.3 Effect size analysis of video engagement indicators and quality scores across medical and non-medical users

Going further, both mDISCERN score (|rrb| = 0.72, $P < 0.001$) and total VIQI score (|rrb| = 0.79, $P < 0.001$) had large effect sizes between medical user and non-medical user, indicating that the videos uploaded by medical personnel had higher video quality (Fig. 5). Furthermore, there were no substantial differences between medical user and non-medical user in likes (|rrb| = 0.05, $P = 1.000$), favorites (|rrb| = 0.02, $P = 1.000$), comments (|rrb| = 0.16, $P = 0.069$), shares (|rrb| = 0.11, $P = 0.403$) and GQS score (|rrb| = 0.00, $P = 1.000$), all of which had small effect sizes (Fig. 5).

3.4 Spearman correlation analysis

On both RedNote and TikTok platforms, the Spearman correlation analysis between video engagement indicators (likes, favorites, comments, and shares) and video quality scores (mDISCERN, GQS, and VIQI) were presented in **Supplementary Table 2** and Fig. 6. The outcomes revealed a strong positive correlation among the four video engagement indicators (likes, favorites, comments, and shares) (r_s range: 0.842–0.943, $P < 0.001$). The mDISCERN score had a weak positive correlation with the likes and shares (r_s range: 0.104–0.105, $P < 0.05$). However, the mDISCERN score showed no significant correlation with favorites and comments (r_s range: 0.010–0.066, $P > 0.05$). For the GQS score, it was observed that there was a weak positive correlation with the favorites, shares, and mDISCERN (r_s range: 0.098–0.111, $P < 0.05$). And the GQS score had no significant correlation with likes and comments (r_s range: 0.085–0.091, $P > 0.05$). Additionally, the total VIQI score showed a strongly positive correlation with the four video engagement indicators (likes, favorites, comments, and shares) (r_s range: 0.555–0.708, $P < 0.001$). Similarly, a strongly positive correlation was found between the total VIQI score and the mDISCERN score ($r_s = 0.547$, $P < 0.001$). Moreover, the total VIQI score had a weakly positive correlation with the GQS score ($r_s = 0.098$, $P < 0.05$).

4 Discussion

In this cross-sectional study, several important outcomes were identified. First, although TikTok had significantly higher mDISCERN and total VIQI scores than RedNote, the overall quality of rosacea-related videos on both platforms remained medium to low. Second, videos uploaded by medical personnel showed markedly higher mDISCERN and VIQI scores than those uploaded by non-medical users, with large effect sizes. Third, engagement indicators were strongly correlated with each other, whereas their associations with credibility-related quality indicators were inconsistent: total VIQI score was strongly associated with likes, favorites, comments, and shares, but mDISCERN and GQS showed only weak or non-significant correlations with most engagement indicators. These findings hold profound and urgent public health implications as it is, which is the first cross-platform systematic evaluation of short videos related to rosacea.

In this study, medical personnel accounted for a larger proportion of TikTok uploaders than RedNote uploaders. The higher mDISCERN and total VIQI scores observed on TikTok may be largely attributable to differences in uploader composition. This finding is consistent with prior studies on other social media [9,

[13]. Chen et al. have reported that rosacea-related videos produced by healthcare sources on YouTube platform were significantly more accurate and of higher quality than those produced by non-healthcare sources, although non-healthcare videos received greater viewer engagement [9]. Similarly, Basch et al. have found that YouTube videos uploaded by medical professionals were more likely to mention medication-based management of rosacea than videos uploaded by consumers or entertainment sources, emphasizing the need for reliable videos that clarify misconceptions [13]. Together with these studies, our findings indicate that the professional background of uploaders may be a key factor of rosacea-related video quality across different social media platforms.

In this study, despite the relatively better performance of TikTok, the overall quality of videos on both RedNote and TikTok platforms was at a medium-low level. Rosacea is a chronic, relapsing inflammatory skin disease that requires long-term management, avoidance of individual triggers, rational skincare, and standardized medical treatment [24–26]. However, short-video platforms are driven by brevity, visual impact, and algorithmic recommendation, which may limit the completeness of disease education [27]. Previous research on acne-related short-form videos showed that many videos were produced by users without dermatologic medical backgrounds and often emphasized skincare products rather than evidence-based treatment [15]. A Chinese cross-sectional study of acne-related videos on Bilibili and TikTok also found that video quality and engagement varied by uploader characteristics and content features [10]. These findings suggest that dermatology-related short videos may attract users through personal experience or product recommendations, but may fail to provide balanced information on diagnosis, disease course, treatment indications, adverse effects, and when to seek professional care.

An interesting finding of this study was likes, favorites, comments, and shares were strongly correlated with each other. However, their relationship with quality score was more complex. Total VIQI score was strongly correlated with all engagement indicators, suggesting that videos with better information flow, visual presentation, and precision may be more attractive to viewers and more likely to be shared [10, 28]. In contrast, mDISCERN and GQS scores showed only weak or non-significant correlations with engagement indicators. This indicates that users may respond more strongly to presentation quality, narrative clarity, or visual appeal than to source transparency and medical credibility [29, 30]. This finding partially differs from Chen et al., who observed that non-healthcare rosacea videos had lower accuracy and quality but higher viewer engagement [9]. It is consistent with the broader concern that social media engagement does not necessarily reflect scientific accuracy [31–33]. A recent scoping review of health science-related short videos on TikTok also concluded that most TikTok health videos were of moderate or low quality and that commonly used assessment tools were not originally developed specifically for short videos [34]. Therefore, engagement indicators may not be used as substitutes for professional quality assessment.

There were several limitations should be acknowledged. First, this was a cross-sectional analysis based on videos retrieved on a single date. As short-video platforms are dynamic and algorithm-driven, search results, video visibility, and engagement indicators may change over time. Although newly registered accounts were used to reduce personalization bias, algorithmic recommendation bias could not be

completely eliminated. Second, the number of videos on different platforms is quite different (98 in RedNote and 307 in TikTok), which may cause some sampling deviation. Third, only Chinese-language videos from RedNote and TikTok were included, which limits the generalizability of the results to other languages, countries, or platforms such as YouTube and Instagram. Fourth, although mDISCERN, GQS, and VIQI are commonly used tools for evaluating online health videos, they are not specifically designed for rosacea, and some degree of subjective judgment is unavoidable. Finally, this study only explored the correlation between engagement indicators and video quality, but did not analyze the causal relationship. Future longitudinal studies are needed to clarify this causal relationship.

5 Conclusion

In conclusion, this study showed that rosacea-related short videos on TikTok had higher information quality than RedNote, but the overall quality of content on both platforms remained suboptimal. Videos uploaded by medical personnel had higher quality than those uploaded by non-medical users. Engagement indicators were strongly correlated with each other. Total VIQI score was strongly positively correlated with all engagement indicators and mDISCERN score, but weakly correlated with GQS score. In future, more evidence-based, professionally generated, and visually engaging rosacea content is needed on short-video platforms, together with platform-level quality control to improve users' digital health literacy.

Declarations

Acknowledgements

None.

Ethical considerations

This study analyzed publicly accessible short videos from RedNote and TikTok. Ethical approval was waived as no human subjects were involved, and all collected data, including video metadata and engagement statistics, were publicly available without accessing private user information. No contact, intervention, or interaction with video uploaders or viewers occurred during the research.

Consent to participate

Not applicable.

Funding

None.

Declaration of conflicting interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Data Availability Statement

Video metadata and quality assessment data are available from the corresponding author upon reasonable request. Raw videos are subject to copyright protection and cannot be redistributed, but search queries and inclusion criteria are described in the Methods section to enable replication of data collection.

Author Contributions

YH: Conceptualization, Formal Analysis, Writing - Original Draft. ML: Formal Analysis, Visualization, Writing - Original Draft. JW: Formal Analysis

All authors: Writing - Review & Editing, Final Approval

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Figures

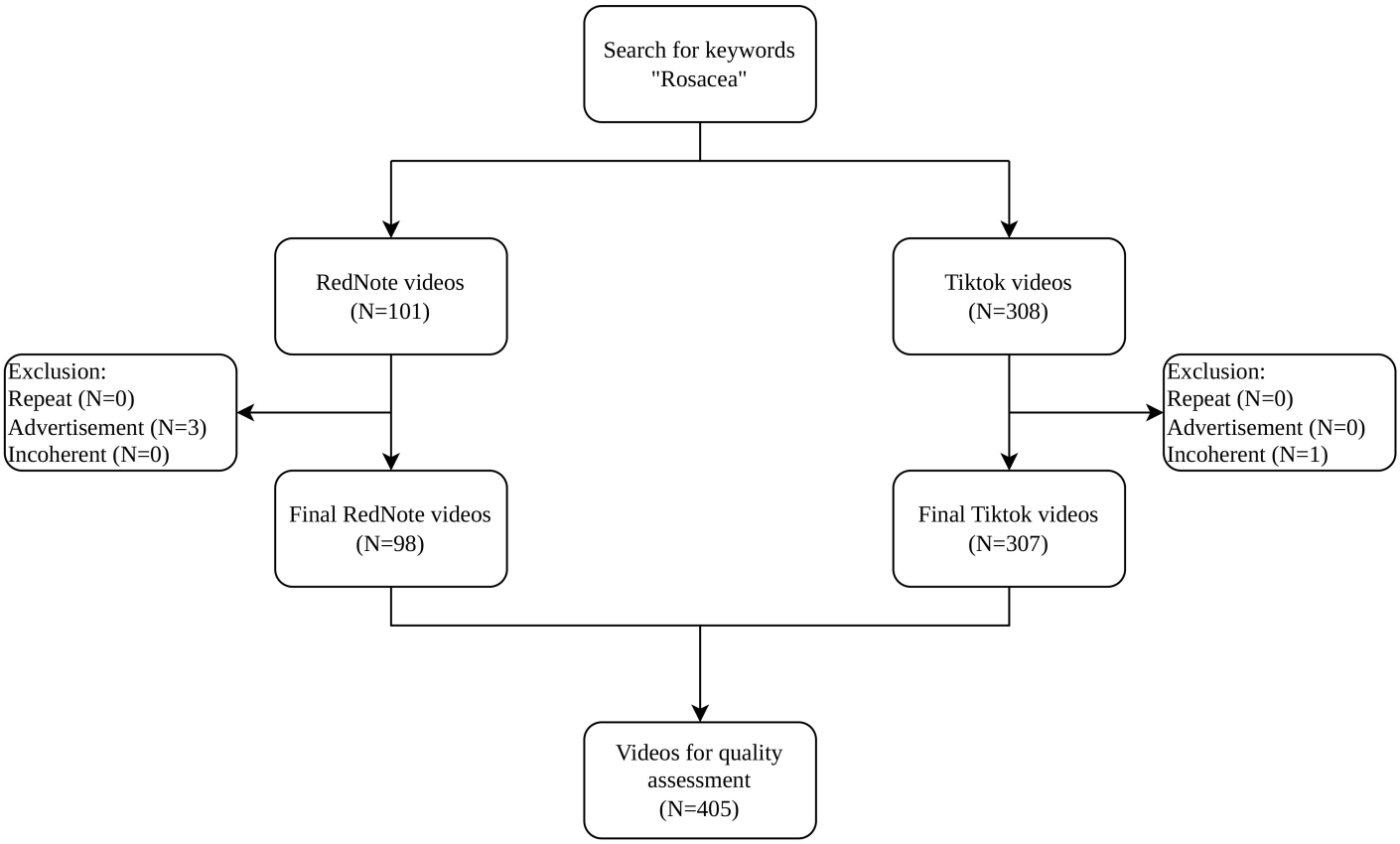


Figure 1

Flowchart of the screening process.

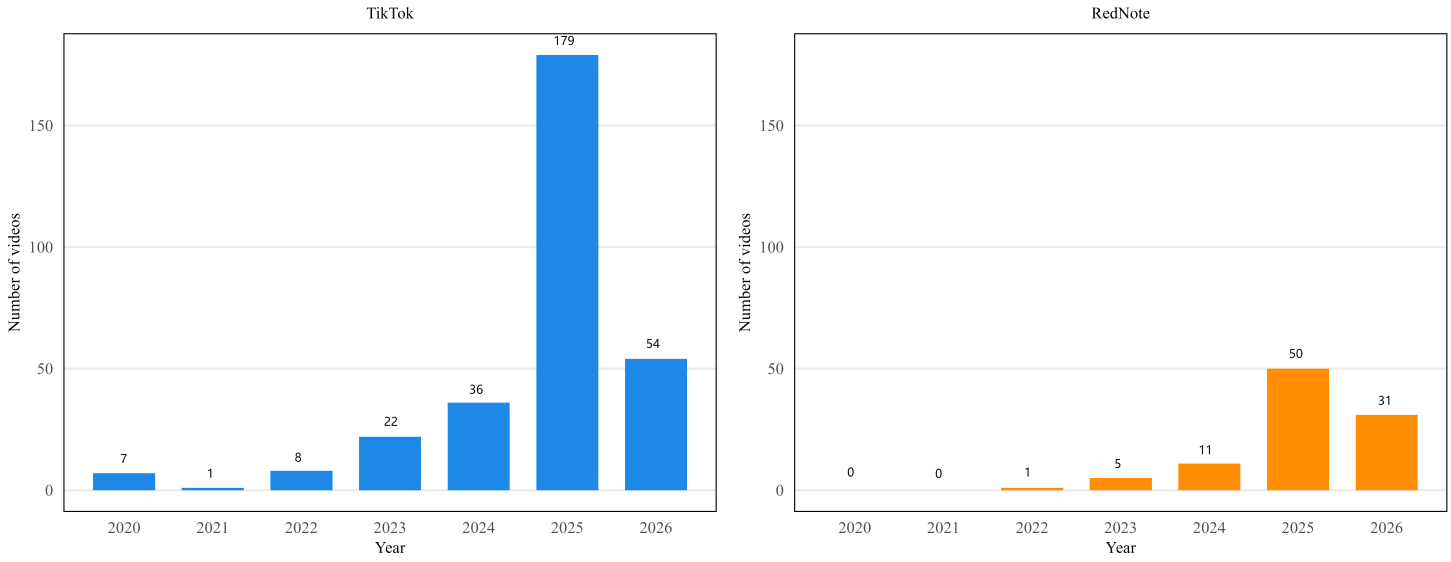


Figure 2

Number of videos in different platforms (RedNote and TikTok) and in different years (2020-2026).

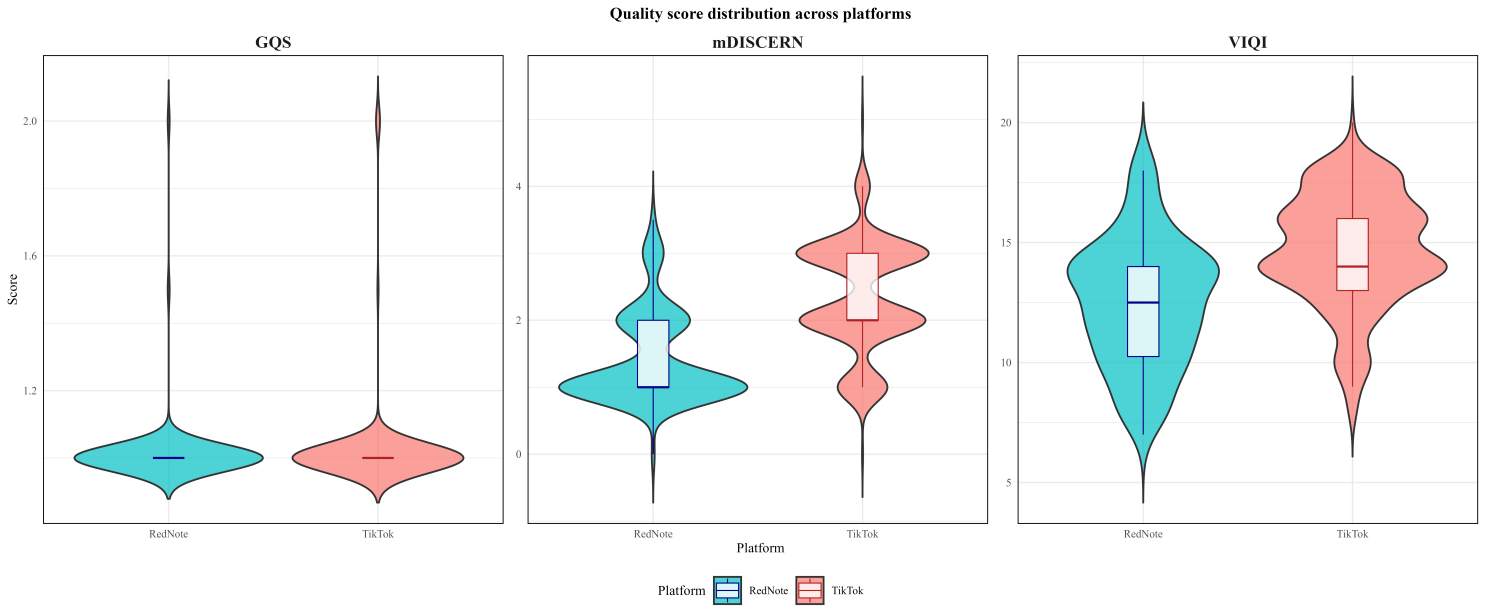


Figure 3

The violin diagram of the quality score differences between RedNote and TikTok in three quality indicators (mDISCERN, GQS and VIQI).

mDISCERN, modified development of a quality index for health information; GQS, global quality score; VIQI, video information and quality index.

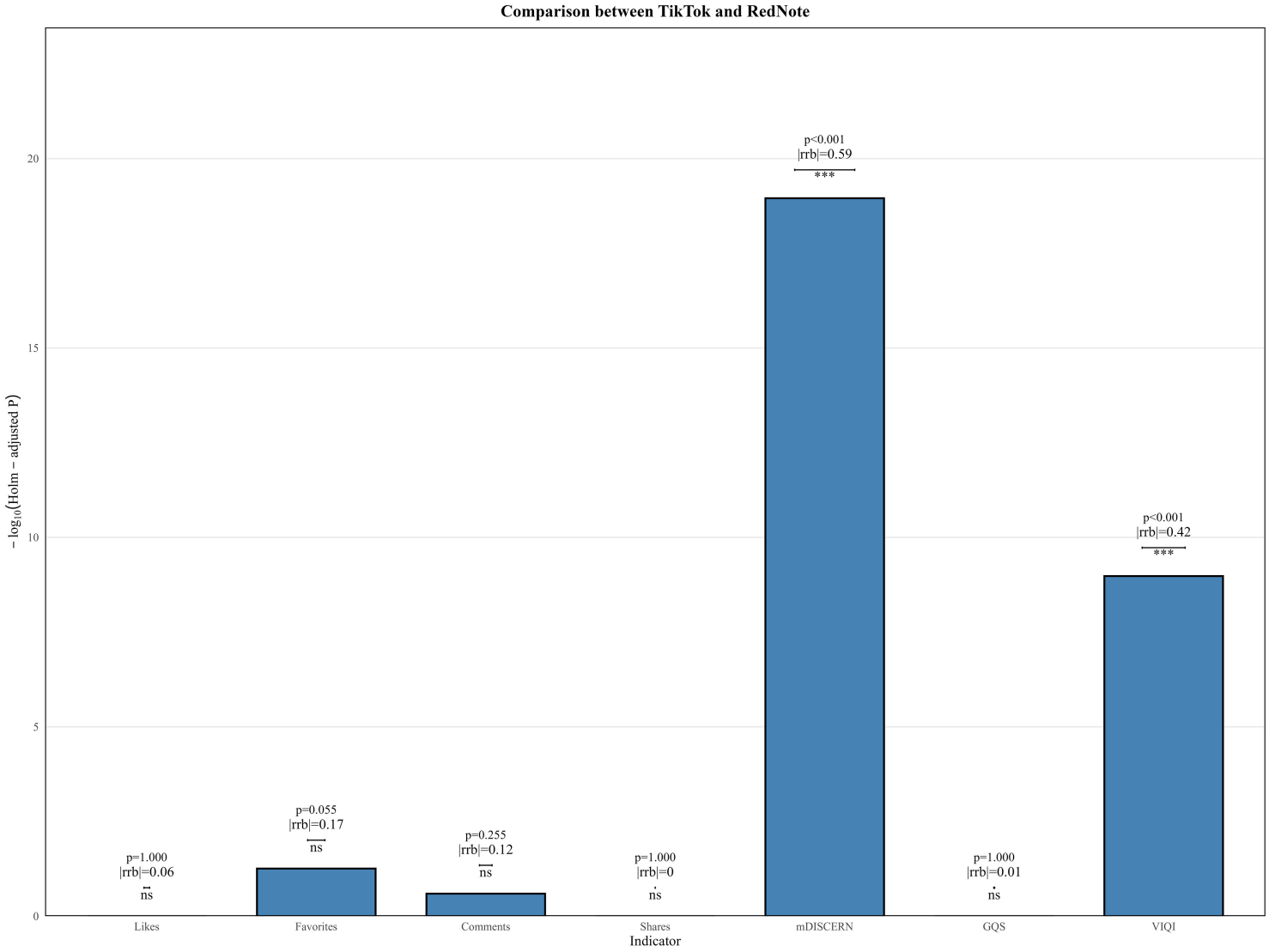


Figure 4

Holm-Bonferroni correction and rrb effect size for video engagementindicators and video quality scores on RedNote and TikTok platforms.

****P*<0.001. mDISCERN, modified development of a quality index for health information; GQS, global quality score; VIQI, video information and quality index; rrb, rank-biserial correlation coefficient.

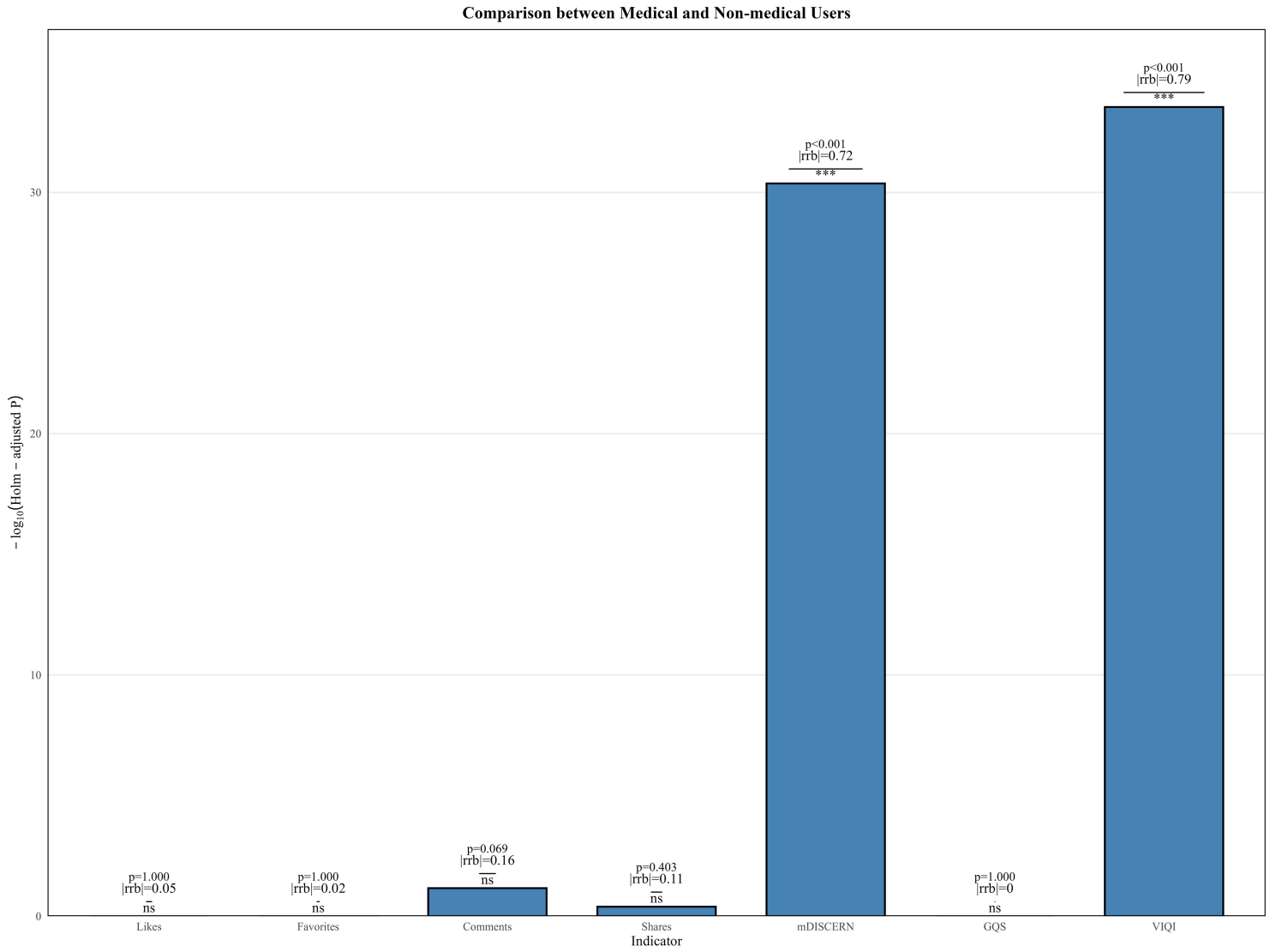


Figure 5

Holm-Bonferroni correction and rrb effect size for video engagement indicators and video quality scores on medical and non-medical users.

***P<0.001. mDISCERN, modified development of a quality index for health information; GQS, global quality score; VIQI, video information and quality index; rrb, rank-biserial correlation coefficient.

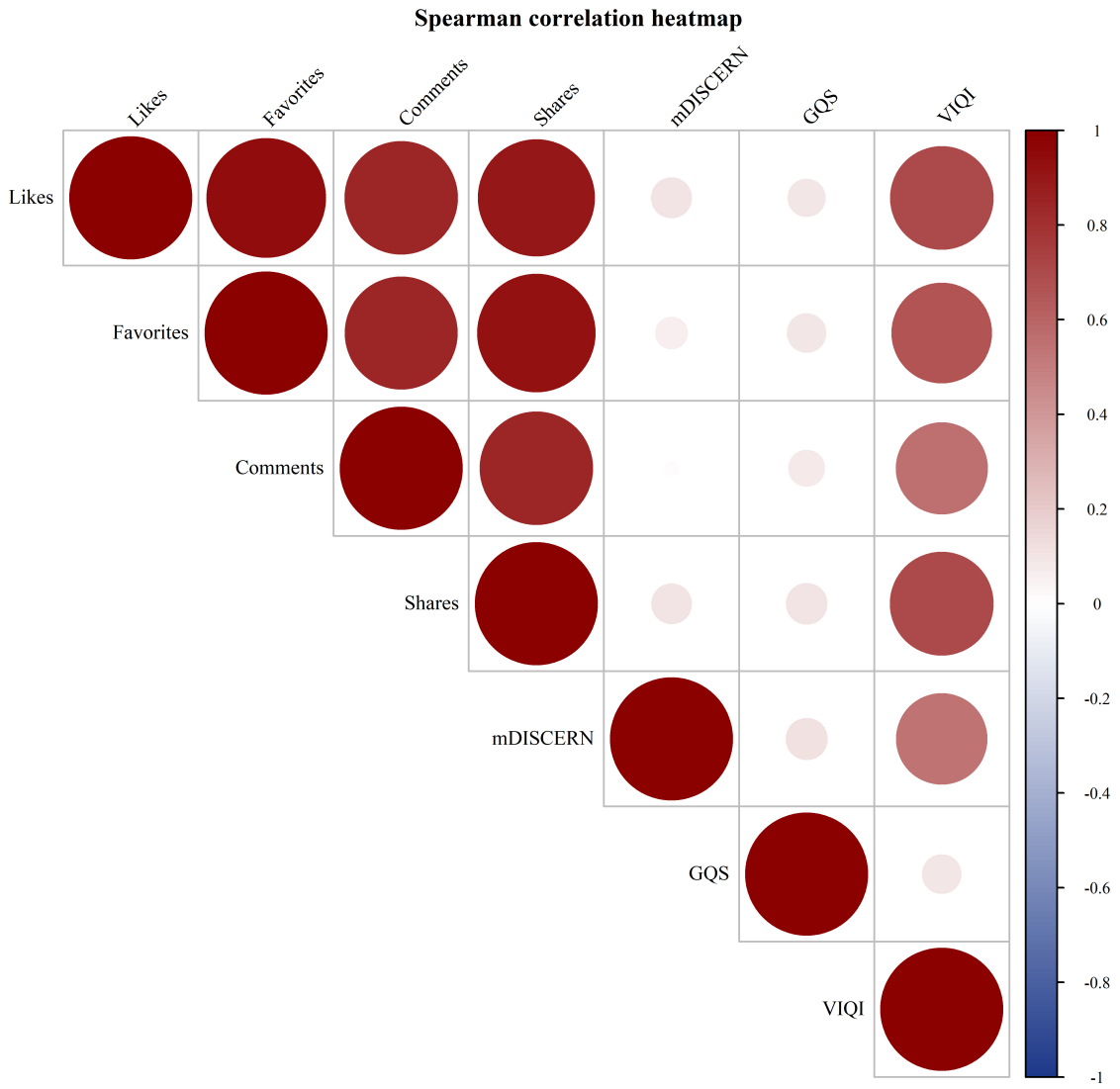


Figure 6

Spearman correlation analysis for RedNote and TikTok on video engagement indicators and video quality scores.

mDISCERN, modified development of a quality index for health information; GQS, global quality score; VIQI, video information and quality index.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- SupplementaryTable1.docx
- SupplementaryTable2.docx
- SupplementaryTable3.docx
- SupplementaryTable4.docx

- SupplementaryTable5.docx