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The quality and reliability of short videos about rotator cuff tears on Chinese social Media platforms (TikTok and Redbook): A cross-sectional study

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Abstract

Objective

This cross-sectional study evaluated the content, quality, and reliability of short videos about rotator cuff tears on TikTok and Redbook.

Background

With rotator cuff tears increasing, social media has become a key source of patient information, though content quality varies significantly.

Methods

On February 1, 2026, we searched for relevant short videos on major Chinese platforms. After collecting metadata, we assessed clinical reliability and educational quality using the Global Quality Score (GQS), modified DISCERN (mDISCERN), and Patient Education Materials Assessment Tool (PEMAT). Spearman's correlation analyzed relationships between video metrics and quality scores.

Results

Among 181 videos analyzed (94 TikTok, 87 Redbook), overall quality was moderate (median GQS and mDISCERN: 3.0). TikTok videos scored significantly higher on GQS than Redbook, though mDISCERN and PEMAT showed no significant inter-platform differences. Videos from orthopedic and rehabilitation professionals demonstrated significantly higher understandability (PEMAT-U) than those from other medical fields, but actionability (PEMAT-A) did not differ significantly across groups. Quality scores correlated positively with user engagement metrics (likes, collections, shares).

Conclusion

rotator cuff tears videos on Chinese platforms demonstrate moderate quality. While orthopedic specialists provide highly understandable content, actionability requires improvement. The positive correlation between quality and engagement suggests audiences recognize valuable content. Healthcare professionals should leverage short videos to disseminate quality, actionable guidance, and platforms should optimize algorithms to prioritize professional medical voices.

Introduction

Rotator cuff tears is one of the most prevalent causes of shoulder pain and upper limb dysfunction, particularly among middle-aged and elderly populations and overhead athletes [1]. In China, the clinical burden of rotator cuff tears has increased significantly over the past decade. Epidemiological data indicate that its prevalence rises with age, reaching as high as 30% to 50% in individuals over 60 years old [2]. The chronic nature of the associated pain and the potential for long-term functional impairment often necessitate a multidisciplinary management strategy, encompassing approaches from surgical repair to specialized rehabilitation protocols [3, 4].

With the accelerated digital transformation of the healthcare sector, patients have transitioned from traditional clinical consultations to proactive online health information-seeking. The role of social media in healthcare is expanding, with approximately 80% of internet users searching for health information online [5, 6]. Among various social media platforms, those centered on short-video content have gained significant traction. In China, short-video platforms such as TikTok and Redbook have become primary repositories for health-related knowledge [7]. TikTok serves as a prominent example, boasting over one billion users across more than 150 countries [8]. Furthermore, in December 2021, TikTok topped the global mobile app download rankings in China [9]. Similarly, another popular short-video platform, Redbook, attracts hundreds of millions of monthly active users. For patients with shoulder pain, these platforms offer visually intuitive guidance on diagnostic tests, exercise therapies, and postoperative care. However, the decentralized nature of content creation on these platforms poses substantial risks: medical information is frequently disseminated by non-specialists, potentially leading to the spread of inaccurate or oversimplified advice that may exacerbate injuries [10].

Prior studies have examined the quality of health information on social media for various chronic conditions, such as psoriasis and glioblastoma, revealing significant disparities between professional guidelines and trending content [11, 12]. Although some research has begun to evaluate orthopedic content on English-language platforms like YouTube, a critical knowledge gap remains regarding the quality, reliability, and actionability of rotator cuff tears related videos within the Chinese social media ecosystem [8, 13]. Given that TikTok and Redbook operate with distinct algorithmic logic and user demographics—with the latter placing particular emphasis on lifestyle and rehabilitation "sharing"—it is crucial to assess whether the provided information is evidence-based and easy for patients to implement.

Therefore, this cross-sectional study aims to systematically evaluate the quality and reliability of rotator cuff tears related short videos on TikTok and Redbook. Utilizing validated assessment tools such as the GQS, modified DISCERN, and PEMAT, this research seeks to systematically assess the quality and credibility of short videos concerning rotator cuff tears found on these platforms.

Methods

Search strategy and data extraction

This cross-sectional investigation was initiated on January 1, 2026, in Fuzhou, China. To capture the most representative landscape of public health information, we utilized the search term “□□□□” (translated as rotator cuff tears) on two dominant Chinese social media platforms: TikTok and Redbook. On the launch date of the study, we retrieved the top 100 videos from each platform based on their "comprehensive ranking" algorithms. This ranking mechanism functions by integrating multiple engagement metrics, including video completion rates (viewers exceeding 5 seconds), like-to-view ratios, comment density, follower conversion rates, and the recency of the upload. To neutralize the potential interference of "echo chamber" effects caused by personalized recommendation algorithms, we conducted all searches using newly registered accounts on fresh device environments with cleared caches.The initial pool of 200 videos underwent a rigorous two-stage screening process (refer to Fig. 1 for the selection flowchart). We applied the following exclusion criteria to ensure data integrity: content not primarily focused on the diagnosis, etiology, or management of rotator cuff tears; videos that were entirely textual, lacked audio/visual synchronization, or had poor resolution; and re-posted content from duplicate sources. Following this filtering process, a finalized dataset of 181 videos was established (Fig. 1).

The subsequent phase of systematic assessment and data extraction was conducted between January 2 and January 5, 2026. For each qualifying video, we meticulously documented baseline metadata, including the platform of origin, video duration in seconds, and the primary thematic focus. To quantify user engagement and the perceived utility of the information, public reception metrics—consisting of the total counts of "likes," "comments," "shares," and "saves"—were recorded for each entry. Furthermore, we performed source verification by categorizing authors into distinct professional cohorts, specifically orthopedic professionals, rehabilitation professionals, and other-field professionals, based on their platform-verified credentials and personal biography information. All extracted data were cross-verified by two independent researchers to ensure consistency and accuracy across the final dataset.

Video Assessment and Categorization

To ensure a robust evaluation of the collected content, two independent reviewers, both of whom are clinical specialists in a tertiary teaching hospital, performed a comprehensive appraisal using three validated instruments: the Global Quality Score (GQS), the modified DISCERN (mDISCERN) scale, and the Patient Education Materials Assessment Tool (PEMAT).

The GQS was utilized to quantify the overall educational quality of the videos on a 5-point Likert scale, ranging from 1 (very poor) to 5 (excellent). For assessing the reliability of the medical information, the mDISCERN tool was applied, focusing on five critical dimensions: clarity, relevance, traceability, robustness, and balance. Each dimension was scored to provide a cumulative reliability index for every video. Furthermore, to evaluate how well patients could digest and apply the information, we employed the PEMAT framework, which bifurcates the assessment into "understandability" and "actionability" scores.

In addition to quality scoring, the videos were systematically categorized based on their thematic focus and the creators' backgrounds. The content was divided into three primary themes: Disease Knowledge, Treatment, and Comprehensive Disease Content. Within the treatment category, we further distinguished between Surgical Interventions and Rehabilitation Interventions to better reflect the clinical management of rotator cuff tears. Video creators were identified and grouped into three professional cohorts: orthopedic professionals, rehabilitation professionals, and other-field professionals.

To minimize inter-observer subjectivity and cognitive bias, both evaluators underwent rigorous preliminary training on the scoring guidelines for each instrument. Any discrepancies in the scores were resolved through consensus-driven discussions. The reliability of the grading between the two raters was further quantified using the Intraclass Correlation Coefficient (ICC) and Cohen's kappa (κ), ensuring the scientific integrity of the final dataset.

Statistical analysis

Statistical analysis for this study was performed using SPSS (version 24.0) and R (version 4.3.0), with Origin 2021 utilized for data visualization.Categorical data, such as video source and content themes, were summarized as frequencies and percentages. Given that the majority of our numerical data exhibited non-normal distributions, they were expressed as medians and interquartile ranges.To assess differences across the three creator groups, the Kruskal-Wallis H test was employed, while the Mann-Whitney U test was used for head-to-head comparisons between surgical and rehabilitation intervention categories. The reliability of the scoring between the two investigators was quantified through the calculation of Cohen's κ. Furthermore, to uncover potential relationships between video performance metrics and quality indicators, Spearman's rank correlation analysis was executed. A p-value threshold of < 0.05 was established to denote statistical significance.

Results

Video characteristics

A total of 181 short videos were included in the final analysis. The fundamental attributes and engagement metrics of these videos are summarized in Table 1. The sampled content exhibited a wide range of durations, with a median length of 104.00 seconds (Q1, Q3: 68.00, 176.00). In terms of public dissemination and user interaction, the videos garnered substantial attention: the median number of likes was 650.00 (Q1, Q3: 126.00, 2600.00), while collections and shares reached medians of 580.00 (Q1, Q3: 128.00, 2338.00) and 228.00 (Q1, Q3: 39.00, 933.00), respectively. The median number of comments was 47.00 (Q1, Q3: 6.00, 172.00). Regarding the thematic distribution, treatment-related content was the most prevalent, accounting for 40.8% (n = 74) of the total sample. This was followed by comprehensive disease content, which integrated multiple aspects of the condition (36.4%, n = 66), and basic disease knowledge (22.6%, n = 41). The composition of video contributors revealed that orthopedic professionals were the primary source of information on these platforms, producing 54.1% (n = 98) of the analyzed

videos. Rehabilitation professionals also maintained a significant presence, contributing 30.9% (n = 56) of the content, while other-field professionals (including general health influencers) represented the smallest portion of the sample at 14.8% (n = 27). The GQS and mDISCERN scores both yielded a median of 3.00 (Q1, Q3: 3.00, 4.00), suggesting that while the information is generally reliable, there is significant room for improvement in terms of depth and evidence-based sourcing. Regarding the educational value of the material, the PEMAT-U (understandability) score reached a median of 70.00% (Q1, Q3: 56.00%, 80.00%), whereas the PEMAT-A (actionability) score was slightly higher, with a median of 75.00% (Q1, Q3: 67.00%, 75.00%). This indicates that while the videos are relatively easy for the public to comprehend, their ability to guide patients toward concrete, actionable clinical steps is slightly more robust.

Table 2 and Fig. 2 provide a comprehensive comparison of general characteristics, quality, and reliability scores for rotator cuff tears-related videos between TikTok (n = 94) and Redbook (n = 87).

Regarding general video attributes, TikTok videos featured a significantly longer median duration of 126.00 s (Q1, Q3: 87.25, 240.25) compared to 77.00 s (Q1, Q3: 47.50, 139.50) on Redbook ($P < 0.001$). Engagement metrics also showed a stark contrast, with TikTok significantly outperforming Redbook across all categories ($P < 0.001$): the median number of likes (2314.00 vs. 168.00), collections (1616.50 vs. 183.00), comments (158.50 vs. 6.00), and shares (815.00 vs. 53.00) were all markedly higher on the TikTok platform.

Figure 2(A) illustrates the distribution of video content, which differed significantly between platforms. In terms of video content, although there was no significant overall difference in the distribution of themes between platforms ($P = 0.733$), the primary focus varied. On TikTok, Comprehensive Disease Content was the most prevalent (41.4%), whereas on Redbook, Treatment-focused videos dominated the sample (55.1%). Figure 2(B) illustrates a significant disparity was found in video sources ($P < 0.001$). TikTok videos were predominantly uploaded by Orthopedic Professionals (74.5%), with Rehabilitation Professionals accounting for only 17.0%. In contrast, on Redbook, Rehabilitation Professionals were the leading contributors (46.0%), followed by Orthopedic Professionals (32.2%) and Other-field Professionals (21.8%).

Regarding quality and reliability assessments (Table 2), TikTok videos achieved a significantly higher GQS score (median: 3.00, Q1, Q3: 3.00, 4.00) than Redbook videos (median: 3.00, Q1, Q3: 2.00, 4.00; $P = 0.044$). However, no statistically significant differences were observed between the two platforms in terms of mDISCERN reliability ($P = 0.066$), PEMAT-U ($P = 0.081$), or PEMAT-A ($P = 0.245$), with both platforms maintaining moderate levels across these evaluative frameworks.

Video quality and reliability assessments

Table 3 and Fig. 3 delineate the characteristics, quality, and reliability of the videos when categorized by uploader type. While no significant variations were found in video length across the three groups ($P = 0.494$), with medians ranging from 94.00 s to 110.00 s, significant disparities were observed in user engagement metrics.Videos uploaded by orthopedic professionals garnered the highest median likes

[1210.00 (Q1, Q3: 257.00, 4516.25)], followed by other-field professionals [403.00 (Q1, Q3: 119.00, 1857.50)], while rehabilitation professionals received the fewest [262.50 (Q1, Q3: 95.00, 1321.25); P = 0.003]. Similarly, significant differences were identified in comments (P < 0.001) and shares (P < 0.001), with orthopedic professionals consistently leading in both categories. Specifically, their videos achieved a median of 98.00 comments and 511.00 shares, substantially outperforming both rehabilitation (18.00 comments, 89.00 shares) and other-field professionals (23.00 comments, 91.00 shares).

Figure 3 depicts the comparative analysis of video quality and reliability across different uploader categories. In terms of overall quality, Orthopedic professionals maintained a median GQS of 3.0 (Q1, Q3: 3.0, 4.0), which was statistically comparable to both Rehabilitation professionals [3.0 (Q1, Q3: 3.0, 3.0)] and Other-field professionals [3.0 (Q1, Q3: 2.0, 4.0)], as no significant disparities were observed among the groups (Fig. 3A). A similar pattern of uniformity was evident in reliability scores; Orthopedic and Rehabilitation professionals both recorded a median mDISCERN score of 3.0 (Q1, Q3: 3.0, 4.0), surpassing the median of Other-field professionals [3.0 (Q1, Q3: 2.5, 4.0)] only marginally, with no statistical significance found (Fig. 3B).

However, distinct variations emerged in understandability. Orthopedic professionals achieved the highest median PEMAT-U score of 70.0% (Q1, Q3: 60.0%, 82.0%), significantly outperforming Other-field professionals [56.0% (Q1, Q3: 44.0%, 68.5%)]. Rehabilitation professionals also demonstrated superior understandability with a median of 67.0% (Q1, Q3: 56.0%, 82.0%), which was significantly higher than that of the other two groups (Fig. 3C). Regarding actionability (PEMAT-A), results were relatively consistent across sources; Rehabilitation professionals led slightly with a median of 75.0% (Q1, Q3: 67.0%, 75.0%), followed closely by Orthopedic professionals [71.0% (Q1, Q3: 67.0%, 75.0%)] and Other-field professionals [67.0% (Q1, Q3: 50.0%, 75.0%)], with no statistically significant differences detected (Fig. 3D).

Table 4 and Fig. 4 present a detailed breakdown of the characteristics, quality metrics, and reliability scores for videos addressing rotator cuff tears treatments, stratified by the type of intervention (Surgical vs. Rehabilitation). The study examined a total of 105 videos featuring treatment-relevant information. Of these, the analysis specifically contrasted videos focusing on Surgical Interventions (n = 25) against those detailing Rehabilitation Interventions (n = 80).

In terms of video duration, Rehabilitation Interventions presented a median length of 110.0 s (Q1, Q3: 62.5, 177.2), whereas Surgical Interventions were marginally shorter with a median of 88.0 s (Q1, Q3: 70.0, 161.0); however, this variation did not reach statistical significance (P > 0.05). Regarding audience engagement, Surgical Interventions tended to attract higher median figures for likes [529.0 (Q1, Q3: 156.0, 4250.0)], comments [62.0 (Q1, Q3: 8.0, 318.0)], and shares [236.0 (Q1, Q3: 125.0, 2561.0)] compared to the Rehabilitation group (Likes: 407.5 [Q1, Q3: 111.2, 2245.5]; Comments: 22.0 [Q1, Q3: 3.0, 95.8]; Shares: 127.5 [Q1, Q3: 33.0, 823.0]). Despite these numerical trends suggesting greater user interaction with surgical content, statistical analysis revealed no significant differences between the two categories across these metrics. Similarly, the number of collections showed no significant disparity,

with Rehabilitation videos achieving a median of 573.5 (Q1, Q3: 136.2, 2382.8) compared to 334.0 (Q1, Q3: 56.0, 3061.0) for Surgical Interventions.

The analysis of video quality and reliability revealed no statistically significant disparities between the two intervention categories, as depicted in Fig. 4. Both Surgical and Rehabilitation videos demonstrated comparable performance across all evaluated instruments. Specifically, regarding the Global Quality Score (GQS), Surgical Interventions maintained a median of 3.0 (Q1, Q3: 3.0, 4.0), which was statistically indistinguishable from Rehabilitation Interventions [3.0 (Q1, Q3: 2.0, 4.0)] (Fig. 4(A)). A similar trend of uniformity was evident in reliability scores, where both groups achieved an identical median mDISCERN score of 3.0 (Q1, Q3: 3.0, 4.0), confirming that reliability levels were consistent regardless of the intervention type (Fig. 4(B)).

In terms of understandability, although Surgical Interventions recorded a slightly higher median PEMAT-U score of 75.0% (Q1, Q3: 60.0%, 82.0%) compared to Rehabilitation Interventions [67.0% (Q1, Q3: 56.0%, 78.0%)], this difference did not reach statistical significance (Fig. 4(C)). Similarly, for actionability (PEMAT-A), while Rehabilitation videos presented a marginally higher median of 75.0% (Q1, Q3: 67.0%, 75.0%) versus 67.0% (Q1, Q3: 50.0%, 75.0%) for the Surgical group, the statistical analysis confirmed no significant divergence between the two cohorts (Fig. 4(D)).

Spearman correlation analysis

A Spearman correlation analysis was conducted to explore the interrelationships among various video characteristics, including GQS, mDISCERN, PEMAT-U, and PEMAT-A, within the included rotator cuff tears videos. The results are schematically presented in Fig. 5. A robust positive inter-correlation was observed across all user engagement metrics: likes, collections, comments, and shares. Specifically, likes exhibited a very strong positive correlation with collections ($r = 0.95$), comments ($r = 0.81$), and shares ($r = 0.92$). Similarly, collections were strongly correlated with shares ($r = 0.90$) and comments ($r = 0.72$), while comments and shares also demonstrated a high degree of correlation ($r = 0.86$).

Regarding the quality and reliability assessment tools, GQS, mDISCERN, PEMAT-U, and PEMAT-A demonstrated statistically significant positive inter-correlations, though the strength of these associations varied. GQS was moderately positively correlated with mDISCERN ($r = 0.56$) and PEMAT-U ($r = 0.48$), while showing a weaker correlation with PEMAT-A ($r = 0.37$). mDISCERN also exhibited moderate positive correlations with PEMAT-U ($r = 0.43$) and PEMAT-A ($r = 0.38$). Furthermore, a moderate positive correlation was identified between PEMAT-U and PEMAT-A ($r = 0.39$), indicating a consistent relationship between the understandability and actionability of the content.

Discussion

Rotator cuff tears and the need for public education

Rotator cuff tears is a profoundly debilitating musculoskeletal condition that imposes a substantial socio-economic burden on affected individuals and healthcare systems [14, 15]. This burden manifests not only as acute shoulder pain and functional limitation but also through prolonged periods of rehabilitation, sleep disturbance, and psychological distress, establishing rotator cuff tears as one of the costliest orthopedic disorders [16]. As the global incidence of degenerative and sports-related shoulder injuries continues to climb, educational initiatives targeting both general practitioners and patients have been increasingly advocated [17, 18]. There is now growing scholarly attention toward expanding public awareness regarding conservative management and postoperative rehabilitation for rotator cuff tears [19]. Historically, knowledge dissemination heavily relied on clinical consultations, printed brochures, and hospital-based rehabilitation classes. While these conventional measures have enhanced patient understanding to a certain extent, their reach remains inherently restricted. Given the widespread influence and staggering user penetration of platforms like TikTok and Redbook in China, they present an unprecedented medium for delivering dynamic, visual health education [20]. Consequently, this study aims to critically evaluate the necessity, quality, and effectiveness of leveraging these dominant social media platforms to convey rotator cuff tears related medical knowledge.

TikTok and Redbook as health information sources

Social media's trajectory in healthcare is accelerating exponentially, with a vast majority of internet users actively seeking health and rehabilitation information online [21]. Both TikTok and Redbook have emerged as highly influential conduits for the creation and consumption of medical videos. Recent evidence underscores the immense potential of short-video platforms for rapid information dissemination, as witnessed during the COVID-19 pandemic [22], as well as in chronic disease management contexts like diabetes, osteoarthritis, and scoliosis [23, 24]. In our investigation, we observed a parallel phenomenon regarding rotator cuff tears videos, which successfully captivated audience interest. The videos analyzed in our cohort garnered millions of cumulative likes, collections, and shares, signifying a profound level of public engagement.

However, while short-form video content offers unparalleled accessibility for patient education, it simultaneously introduces substantial hazards to public health. The diverse backgrounds of content creators, coupled with opaque moderation algorithms inherent to these platforms, frequently culminate in the proliferation of substandard and unreliable videos [20]. This phenomenon can actively mislead patients undergoing rehabilitation. For instance, prior studies evaluating YouTube and TikTok videos on lower back pain and knee osteoarthritis identified a severe lack of comprehensive content and raised alarming concerns regarding their clinical safety [20]. More critically, inaccurate biomechanical advice or inappropriate exercises—often spread by non-professional influencers—rotator cuff tears an exacerbate shoulder injuries or compromise surgical repairs. To counteract this, it is paramount to rigorously evaluate the current landscape of videos, thereby empowering platforms to refine their content monitoring protocols and protect users from potentially detrimental guidance.

Quality and reliability of the short videos about rotator cuff tears

The quality, reliability, and instructional value of online information concerning rotator cuff tears, particularly within the nascent landscape of short-video platforms, remain largely uncharacterized. Our investigation serves as an inaugural effort to bridge this specific knowledge gap. Consistent with broader digital health literature [25], our findings indicate a variable and overall moderate quality of rotator cuff tears education videos, with a median Global Quality Score (GQS) and mDISCERN score resting at 3.0.

Crucially, our data demonstrated significant disparities based on the uploader's professional background. Videos produced by medical experts—specifically Orthopedic and Rehabilitation professionals—offered significantly superior instructional utility in terms of understandability (PEMAT-U) compared to those uploaded by Other-field professionals. This superiority intuitively stems from their rigorous medical training, adherence to evidence-based rehabilitation protocols, and comprehensive grasp of shoulder anatomy [26]. Conversely, non-medical personnel often rely on anecdotal experiences or generic fitness routines, inadvertently introducing bias or unsafe movements into their content.

Interestingly, despite the professionals' dominance in theoretical explanations (understandability), our analysis revealed no statistically significant difference in actionability (PEMAT-A) across the three groups. Furthermore, a sub-analysis of 105 treatment-related videos revealed no significant differences in quality or reliability between surgical intervention videos and rehabilitation intervention videos. This highlights a critical "actionability gap" in digital medical education: while orthopedic surgeons excel at explaining the pathophysiology of rotator cuff tears, they frequently struggle to translate this knowledge into clear, step-by-step, actionable rehabilitation exercises suitable for a short-video format [27]. This underscores the urgent need for professionals to refine their digital communication strategies, prioritizing practical demonstrations over purely didactic lectures.

Correlation analysis

The interconnectedness of likes, comments, and shares on social media has been well-established in previous bibliometric analyses [28]. Our current study corroborated this, revealing a robust positive association (Spearman's rho > 0.8) among all engagement metrics, indicating that active user feedback is consistently reflected across various platform features.

More importantly, our study yielded a highly encouraging finding regarding the relationship between video quality and audience interaction. In stark contrast to the findings of several prior studies—such as those on migraine or myopia videos, which found that video quality exhibited no significant correlation, or even a negative correlation, with audience engagement [29, 30]—our data revealed a significant positive correlation between quality scores (GQS, mDIS, PEMAT) and user engagement metrics (likes, collections, shares). This suggests that for musculoskeletal rehabilitation, popular engagement metrics are actually reliable indicators of quality. We hypothesize that patients suffering from the tangible, physical limitations of an rotator cuff tears are distinctly purpose-driven; they actively seek out, save, and share genuinely effective, professional-grade rehabilitation content rather than being swayed solely by entertainment value [31]. This positive correlation signifies a maturing digital health ecosystem where

high-quality orthopedic content is rightfully recognized and rewarded by platform algorithms and user communities alike.

Practical significance

The expanding reach of digital technology has fundamentally shifted the orthopedic patient's role from a passive recipient of medical directives to an engaged pursuer of self-management strategies [32]. This transformation positions visual social media as a primary conduit for postoperative and conservative rehabilitation knowledge. While platforms like TikTok and Redbook offer unparalleled ease of access, the variable quality of content poses considerable risks. Recognizing these perils, it is imperative that high-caliber, evidence-based videos gain prioritized visibility.

Our findings offer a clear mandate for healthcare providers: rather than discouraging social media use, orthopedic surgeons and physical therapists must actively participate in these platforms. Since our data proves that high-quality content achieves higher engagement, professionals do not need to compromise medical accuracy for popularity. Future content creation should focus on maintaining high understandability while significantly enhancing actionability—ensuring that videos are devoid of misleading elements and filled with practical, easily replicable exercises [33].

Conclusion

This study systematically assessed the quality and reliability of 181 rotator cuff tears related videos on TikTok and Redbook. Overall, the foundational quality of the video content was found to be moderate. Videos contributed by Orthopedic and Rehabilitation professionals possessed significantly higher understandability, thereby offering more reliable theoretical information to viewers, though actionability requires further enhancement. Encouragingly, a positive correlation was identified between video quality and user engagement, suggesting that audiences effectively discern and reward high-quality rehabilitation content. Consequently, it is imperative for orthopedic and rehabilitation institutions to proactively harness short-form videos to disseminate high-quality, actionable rotator cuff tears content, while platforms must continue to optimize their algorithms to prioritize professional medical voices.

Limitations

It is important to acknowledge that our study is not without limitations. Primarily, the constantly evolving nature of video content and algorithms on platforms like TikTok and Redbook makes real-time quality appraisal difficult; our assessment represents a specific snapshot in time. Secondly, potential subjective variations could still exist within the human-led evaluations, despite the use of validated tools and independent reviewers. Thirdly, our scope was restricted to Chinese-language videos on domestic platforms, which may limit the direct generalizability of these findings to Western platforms like YouTube or Instagram, thereby highlighting the necessity for subsequent cross-cultural digital health research.

Abbreviations

GQS
Global Quality Scale
mDISCERN
modified DISCERN tool
PEMAT
Patient Education Materials Assessment Tool
PEMAT-U
PEMAT Understandability
PEMAT-A
PEMAT Actionability
ICC
intraclass correlation coefficient.

Declarations

Ethics approval and consent to participate

The research protocol received approval from the Ethics Committee of the First Affiliated Hospital of Fujian Medical University. All procedures performed in this study were in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki Declaration and its later amendments. Because this study exclusively analyzed publicly available short videos and did not involve direct interaction with, or the collection of, any personally identifiable data from human participants, the requirement for written informed consent was formally waived by the Ethics Committee. This exemption is consistent with national regulations governing research using publicly available data.

Consent for publication

Not applicable.

Availability of data and materials

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding Authors.

Competing Interests

The authors declare that they have no competing interests.

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Author contributions

K-H L: Conceptualization, Methodology, Formal analysis, Writing – original draft, Writing – review & editing. J-M L: Conceptualization, Methodology, Investigation, Data curation, Writing – review & editing, Supervision, Project administration. Q H: Investigation, Data curation, Formal analysis, Visualization. Z-P Y: Investigation, Data curation, Validation. W-S X: Investigation, Formal analysis, Visualization. All authors reviewed and approved the final version of the manuscript.

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References

1. Inoue T, et al. Prevalence and Associated Factors of Rotator Cuff Tears and Shoulder Pain in Older Baseball Players: A Cross-sectional Study. Orthop J Sports Med. 2025;13:23259671251397547.
2. Garcia MJ, et al. Disparities in Rotator Cuff Tear Progression Definitions and Rates: A Systematic Review. JB JS Open Access. 2024;9:e2400097.
3. Diercks R, et al. Guideline for diagnosis and treatment of subacromial pain syndrome: a multidisciplinary review by the Dutch Orthopaedic Association. Acta Orthop. 2014;85:314–22.
4. Chepeha J, et al. A standardized criteria-based progressive shoulder exercise program is effective in managing rotator cuff-related shoulder pain: A prospective cohort study. PLoS ONE. 2025;20:e0328728.
5. Finney Rutten LJ, et al. Online Health Information Seeking Among US Adults: Measuring Progress Toward a Healthy People 2020 Objective. Public Health Rep. 2019;134:617–25.
6. Suarez-Lledo V, Alvarez-Galvez J. Prevalence of Health Misinformation on Social Media: Systematic Review. J Med Internet Res. 2021;23:e17187.
7. Zhang K, et al. BiliBili, Douyin and Xiaohongshu as health information platforms for stroke: evaluating information quality and content. Sci Rep. 2025;15:37705.
8. Gu L, Gao X, Li Y. What drives me to use TikTok: A latent profile analysis of users' motives. Front Psychol. 2022;13:992824.
9. Jain L, et al. Exploring Problematic TikTok Use and Mental Health Issues: A Systematic Review of Empirical Studies. J Prim Care Community Health. 2025;16:21501319251327303.
10. Kolade O, et al. Misinformation About Orthopaedic Conditions on Social Media: Analysis of TikTok and Instagram. Cureus. 2023;15:e49946.
11. Mueller SM, et al. The Absence of Evidence is Evidence of Non-Sense: Cross-Sectional Study on the Quality of Psoriasis-Related Videos on YouTube and Their Reception by Health Seekers. J Med Internet Res. 2019;21:e11935.
12. ReFaey K, et al. The reliability of YouTube videos in patients education for Glioblastoma Treatment. J Clin Neurosci. 2018;55:1–4.

13. Kunze KN, et al. YouTube videos provide low-quality educational content about rotator cuff disease. Clin Shoulder Elb. 2022;25:217–23.
14. Mather RC. The societal and economic value of rotator cuff repair. J Bone Joint Surg Am. 2013;95:1993–2000. 3rd et al.
15. Tashjian RZ. Epidemiology, natural history, and indications for treatment of rotator cuff tears. Clin Sports Med. 2012;31:589–604.
16. Malik AT, et al. Health Care Utilization and Costs in the Year Prior to Arthroscopic Rotator Cuff Repair. Orthop J Sports Med. 2020;8:2325967120937016.
17. Quaunine M et al. From tear to repair: A systematic review of frequently asked questions before rotator cuff surgery. Shoulder Elb 17585732251395212 (2025).
18. Paramonov AO, Shevcov AV, THE EFFECTIVENESS OF COMPREHENSIVE PHYSICAL REHABILITATION, IN RESTORING IMPAIRED MOTOR FUNCTIONS IN ELDERLY INDIVIDUALS WITH SHOULDER JOINT ARTHROPATHY DUE TO FULL-THICKNESS ROTATOR CUFF TEARS. Uchenye zapiski universiteta imeni P.F. Lesgafta. 2025;6:222–31.
19. AlHossan AM, et al. Digital and virtual reality-based rehabilitation versus conventional therapy for rotator cuff tears and post-repair recovery: a systematic review and meta-analysis. JSES Rev Rep Tech. 2026;6:100584.
20. Kolade O, et al. Misinformation About Orthopaedic Conditions on Social Media: Analysis of TikTok and Instagram. Cureus. 2023;15:e49946.
21. Perlis RH, et al. Trust in Physicians and Hospitals During the COVID-19 Pandemic in a 50-State Survey of US Adults. JAMA Netw Open. 2024;7:e2424984.
22. Keikha L, Shahraki-Mohammadi A, Nabiolahi A. Strategies and prerequisites for combating health misinformation on social media: a systematic review. BMC Public Health. 2025;26:139.
23. Gong X, Chen M, Ning L, Zeng L, Dong B. The Quality of Short Videos as a Source of Coronary Heart Disease Information on TikTok: Cross-Sectional Study. JMIR Form Res. 2024;8:e51513.
24. Gong X, et al. TikTok video as a health education source of information on heart failure in China: a content analysis. Front Public Health. 2023;11:1315393.
25. Kuru T, Erken HY. Evaluation of the Quality and Reliability of YouTube Videos on Rotator Cuff Tears. Cureus 12, e6852 (2020).
26. Kolac UC, et al. Can popular AI large language models provide reliable answers to frequently asked questions about rotator cuff tears? JSES Int. 2025;9:390–7.
27. AlHossan AM, et al. Digital and virtual reality-based rehabilitation versus conventional therapy for rotator cuff tears and post-repair recovery: a systematic review and meta-analysis. JSES Rev Rep Tech. 2026;6:100584.
28. Cornwell D et al. An Analysis of Social Media Engagement and Conventional Bibliometrics for Articles Related to Distal Radius Fractures. J Hand Surg Am 50, 1519.e1-1519.e7 (2025).

29. Pradhan SK, et al. Daith Piercing, a Social Media Hype on Youtube for the Treatment of Migraine? A Systematic Video Analysis. Health Sci Rep. 2025;8:e70880.
30. Ming S, et al. Myopia information on TikTok: analysis factors that impact video quality and audience engagement. BMC Public Health. 2024;24:1194.
31. Kirby E, et al. Evaluating musculoskeletal imaging communication interventions using behavioural science: a scoping review using the COM-B model. BMJ Open. 2025;15:e085807.
32. Gao SS, Wang YJ, Zhang GX, Zhang WT. Rehabilitation guidance for hip fracture patients during the COVID-19 pandemic using chat software: A new model. J Back Musculoskelet Rehabil. 2021;34:337–42.
33. AlHossan AM, et al. Digital and virtual reality-based rehabilitation versus conventional therapy for rotator cuff tears and post-repair recovery: a systematic review and meta-analysis. JSES Rev Rep Tech. 2026;6:100584.

Tables

Tables 1 to 4 are available in the Supplementary Files section.

Figures

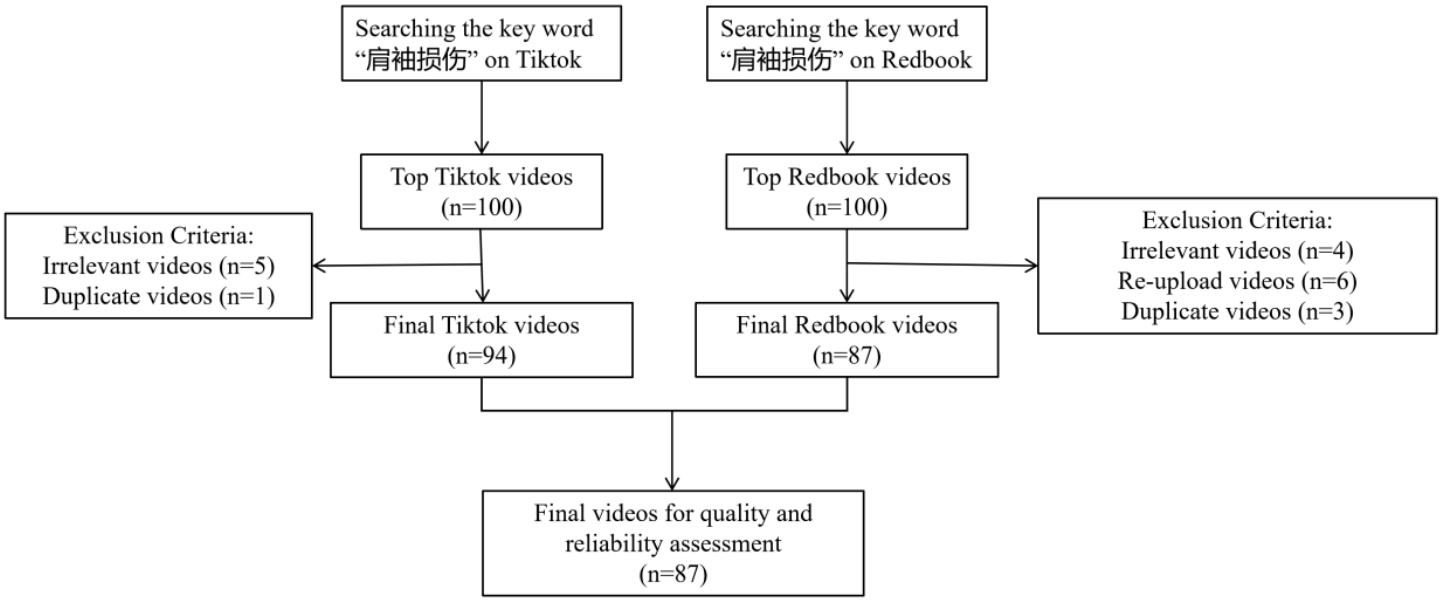


Figure 1

Search strategy and video filtering program.

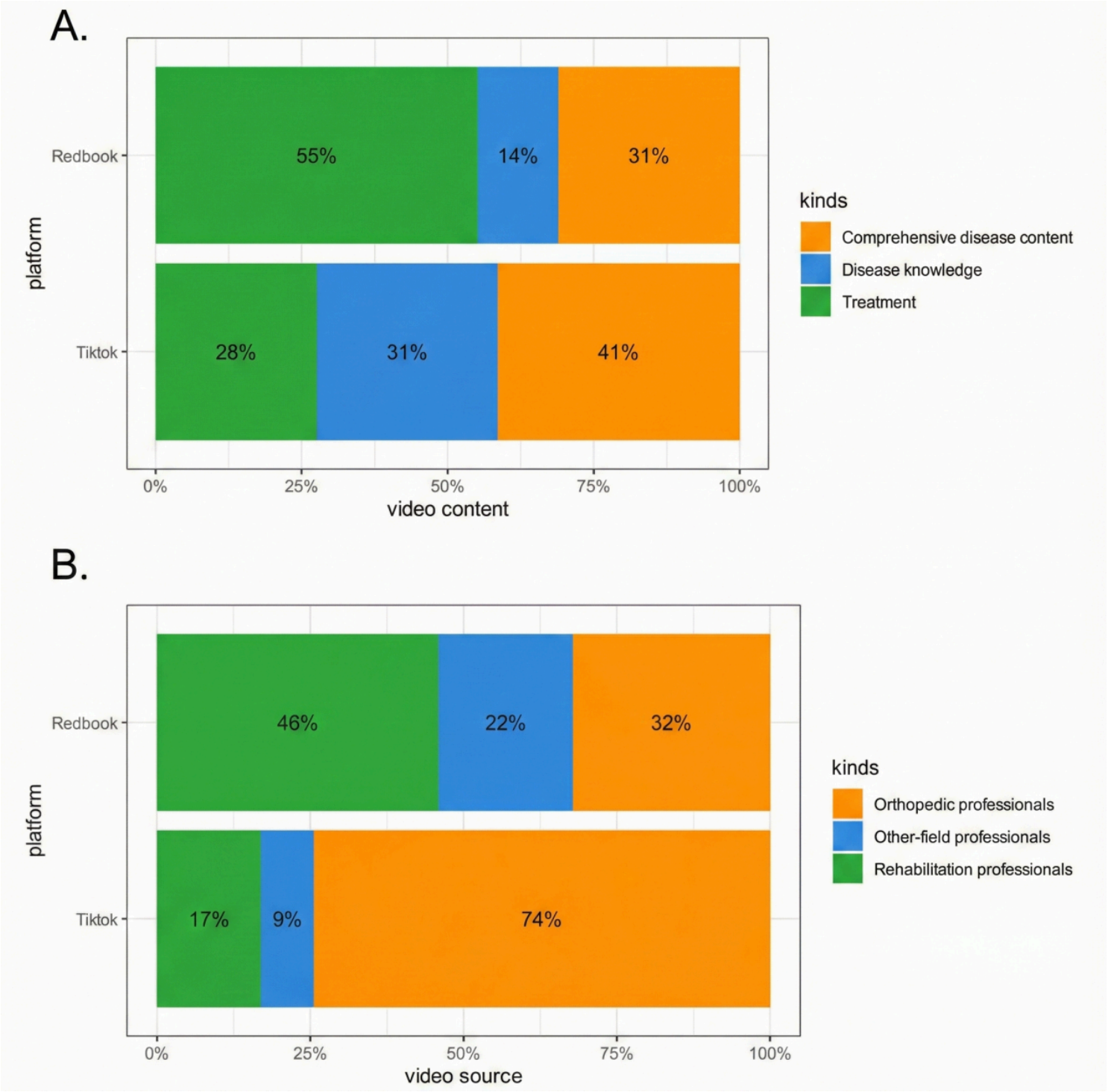


Figure 2

Comparison of video content and sources for rotator cuff tears videos on TikTok and Redbook platforms. A. Distribution of video content categories on TikTok and Redbook. B. Distribution of video uploader sources on TikTok and Redbook.

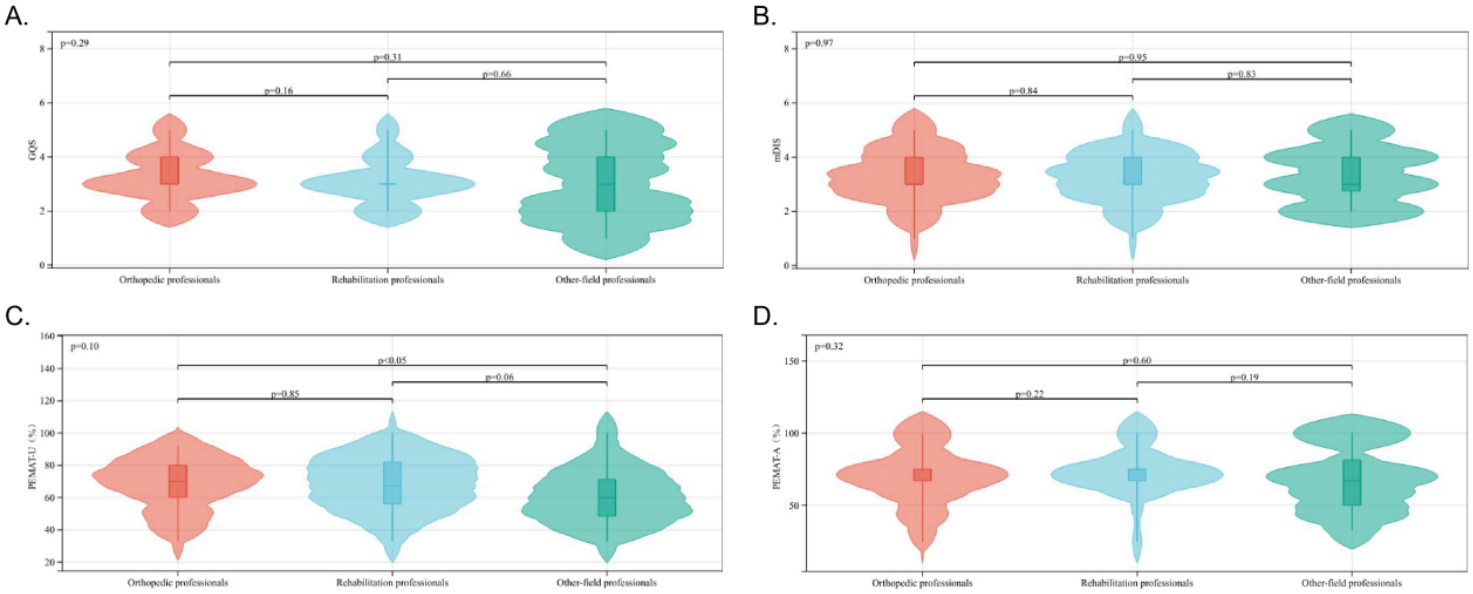


Figure 3

Quality and reliability scores of rotator cuff tears videos by uploader professionalism. A. GQS distribution across Orthopedic professionals, Rehabilitation professionals, and Other-field professionals. B. mDIS score distribution across uploader categories. C. PEMAT-U score distribution across uploader categories. D. PEMAT-A score distribution across uploader categories. GQS: Global Quality Score; mDIS: modified DISCERN tool; PEMAT: Patient Education Materials Assessment Tool.

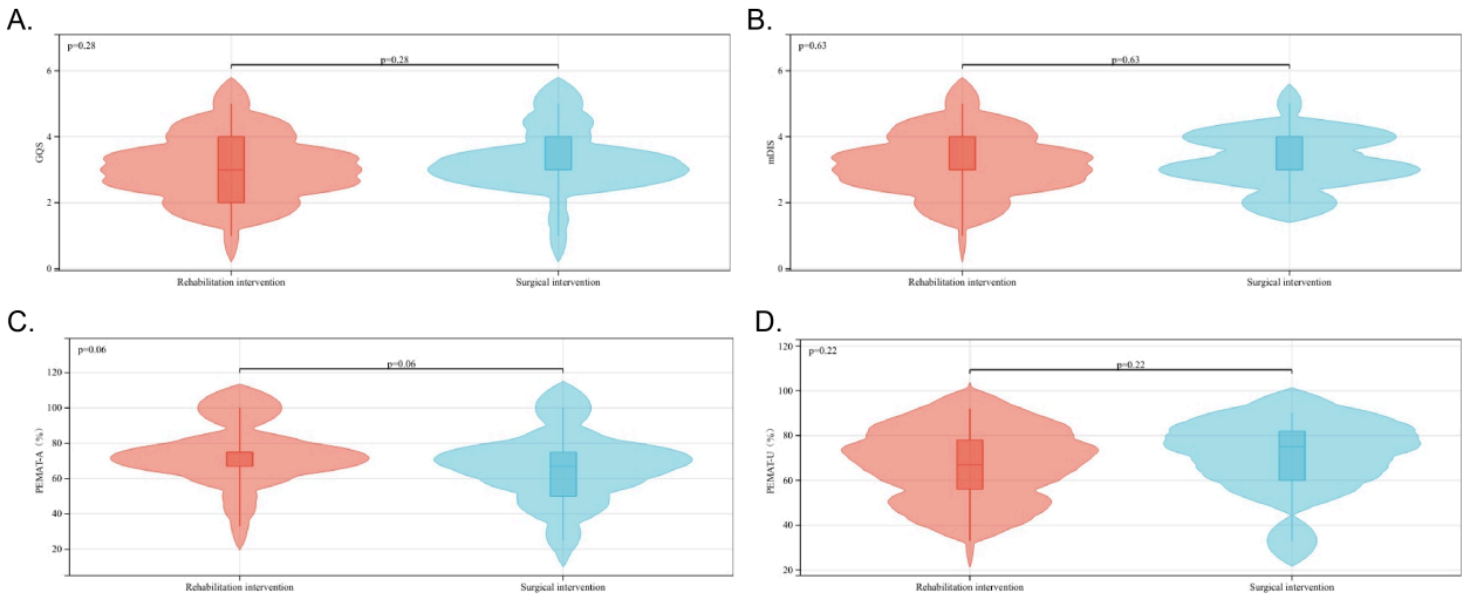


Figure 4

Quality and reliability scores of rotator cuff tears videos by treatment modality. A. GQS distribution for Surgical intervention and Rehabilitation intervention. B. mDIS score distribution for Surgical intervention and Rehabilitation intervention. C. PEMAT-U score distribution for Surgical intervention and Rehabilitation

intervention. D. PEMAT-A score distribution for Surgical intervention and Rehabilitation intervention. GQS: Global Quality Score; mDIS: modified DISCERN tool; PEMAT: Patient Education Materials Assessmen Tool.

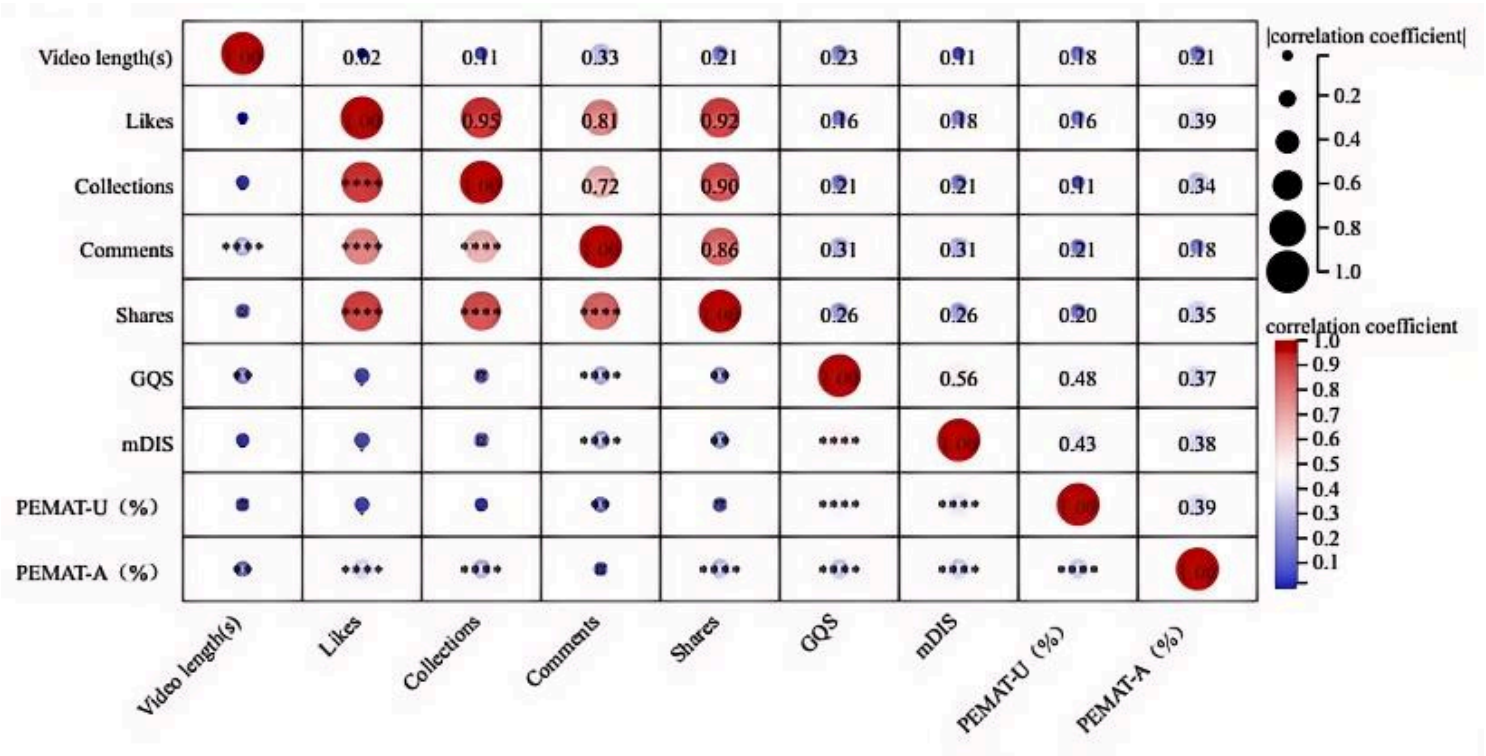


Figure 5

Spearman correlation matrix among video variables, quality, and reliability scores.

Supplementary Files

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- Tables.docx