

ORIGINAL RESEARCH ARTICLE

Assessing the quality and reliability of short video platforms as sources of information on depression among Chinese adolescents: a comparative study with data from Douyin, Bilibili, WeChat, and Xiaohongshu APPs

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Abstract

Objective: This study aims to systematically evaluate and compare the quality, reliability, and content characteristics of short videos regarding adolescent depression on four major Chinese social media platforms: Douyin, Bilibili, WeChat, and Xiaohongshu.

Methods: A cross-sectional study was conducted by retrieving videos using specific keywords related to adolescent depression between January 1, 2023, and March 4, 2025. A total of 600 videos (150 from each platform) were screened. Two independent raters assessed the videos using the Global Quality Score (GQS), the Journal of the American Medical Association (JAMA) benchmarking criteria, and the modified DISCERN tool. Statistical analyses, including the Kruskal-Wallis test and Spearman correlation, were employed to determine differences across platforms and factors influencing video quality.

Results: Douyin exhibited significantly higher scores in GQS, JAMA benchmarks, and modified DISCERN compared to other platforms ($P < 0.05$). Content produced by individual health professionals (81% of the sample) and healthcare organizations demonstrated superior quality and reliability compared to non-professional users ($P < 0.01$). While Bilibili videos had the longest duration, they did not achieve the highest quality scores. Engagement metrics (likes, comments, and shares) showed a significant positive correlation with video quality scores ($P < 0.05$).

Conclusion: The quality of information concerning adolescent depression on short video platforms is inconsistent. Douyin and content created by medical professionals currently provide higher-quality information. Platforms should strengthen identity verification for content creators, and medical professionals are encouraged to utilize these platforms more effectively to disseminate accurate mental health knowledge.

Keywords: adolescent, depression, short videos, information quality and reliability, social media



1. Introduction

Major depressive disorder has been identified as a significant contributing factor to health-related disability and a major component of the global burden of disease (Rice et al. 2019; Monroe and Harkness 2022; Anderson et al. 2024). It is estimated that approximately 4.7% of the worldwide population experiences a depressive episode within 12 months (Herrman et al. 2022). A proportion of cases of depression have their onset in childhood, with a subsequent sharp rise in prevalence during adolescence (Gunlicks-Stoessel et al. 2017). As demonstrated in the Global Burden of Disease 2019 report, the prevalence of depression among adolescents aged 10–14 years is 0.98%, compared to 2.69% in the 15–19 age group (Kieling et al. 2024). Furthermore, the report indicates that depressive symptoms have been detected in 19% of adolescents in 21 countries and territories (Lu, Lin, and Su 2024). In comparison with adult-onset major depression, adolescent MDD has been shown to have more detrimental developmental effects, including severe social dysfunction, poor academic performance, an increased risk of self-injurious behaviors, and suicide attempts (Zhou et al. 2015). Considering the considerable repercussions of depression on children and adolescents, the significance of early detection and intervention is indisputable (Mendelson and Tandon 2016; Diener et al. 2021).

The ubiquity of network technology has precipitated the gradual replacement of traditional paper-based media with electronic information, with individuals increasingly opting to source health-related details from online sources (Swire-Thompson and Lazer 2020; Ceretti et al. 2022). In recent years, the proliferation of short-form video platforms has precipitated a substantial augmentation in health-related video content (Gaş, Zincir, and Bozkurt 2019; Wang et al. 2024; Zeng et al. 2024). Without an effective censorship mechanism on short-form video platforms, users are free to upload content that does not lack false or misleading content, resulting in the overall video quality and credibility of the platforms being generally low (Grohol, Slimowicz, and Granda 2014; Lam, Jivraj, and Scholes 2020). This phenomenon has raised public concerns about the authenticity and reliability of the information conveyed in these videos (Ge et al. 2025; X. Liu et al. 2024). This situation increases the probability of users being exposed to incorrect health information, which may result in users making health-related decisions based on inaccurate information (Zhang et al. 2024; Chen et al. 2024). Even though many studies have analyzed the quality of various disease-related videos on well-established video-sharing platforms such as YouTube, exploring relevant content in emerging short-form video applications remains to be comprehensively investigated (Yilmaz et al. 2022; Helming et al. 2021; Barlas et al. 2023; Qi et al. 2025; Wang et al. 2026b). In 2021, WeChat (Tencent Holdings Ltd.) reached 1 billion monthly active users, while Douyin (the Chinese version of TikTok, developed by ByteDance) had over 1.6 billion monthly active users (Song et al. 2021; Guan et al. 2024; Luo et al. 2021). In addition, the free social media network Xiaohongshu has grown dramatically in China in recent years (Guan et al. 2024). Bilibili has amassed millions of monthly active users thanks to its rich content, accessibility, and engagement (Z. Liu et al. 2024). Despite the ease with which online information, including AI-generated content, can be accessed, users may encounter difficulties in evaluating its quality and accuracy (Osman et al. 2022; AlBloushi and Abouammoh 2023; Wang et al. 2026a). Assessing video quality, content, and accuracy is particularly important to the public.

Many studies have been conducted on the quality of online health information. However, these studies have generally found that a significant proportion of the content is low-quality and commercially oriented, potentially harming users (Zhu et al. 2019; Borkhetaria et al. 2024). This study examined many videos related to adolescent depression on platforms such as Douyin, Bilibili, WeChat, and Xiaohongshu; however, the quality of these messages has not been thoroughly evaluated. There remains a lack of research focusing on adolescent depression messages in video-based social media. To address this gap, this study analyzed the content of relevant videos on these platforms and assessed their accuracy and reliability.

2. Methods

2.1 Ethical Considerations

The study was conducted in accordance with the Declaration of Helsinki. The study protocol was reviewed and approved by the Medical Ethics Committee of the First Affiliated Hospital of the Air Force Medical University (Approval No. KY20242219-C-1). The requirement for individual informed consent was waived by the committee due to the retrospective nature of the study. We explicitly declare that all social media content used in this study (sourced from Douyin, Bilibili, WeChat, and Xiaohongshu) was publicly available at the time of data collection. Furthermore, all content was accessed and analyzed in strict compliance with the respective platforms' terms of service regarding user privacy and public data usage.

2.2 Search Strategy and Data Collection

This study utilized a cross-sectional design based on quantitative content analysis. The research was conducted at the Department of Psychiatry, Xijing Hospital, Fourth Military Medical University, Xi'an, China. We searched four short-form video platforms from January 1, 2023, to March 4, 2025: Douyin, Bilibili, WeChat, and Xiaohongshu. We created a new account to minimize the influence of personal recommendation algorithms. We used the keywords “青少年抑郁症”(adolescent depression), “青少年抑郁障碍”(adolescent depressive disorder), “青春期抑郁”(adolescent depression), and “青少年心理健康”(adolescent mental health) for our search. We specifically employed these precise disease-related terms rather than broad, separated keywords (e.g., 'adolescent' and 'depression') to simulate the exact search queries used by the public and to exclude irrelevant content (noise) unrelated to clinical depression. To address the need for a comprehensive dataset, these keywords were searched independently to ensure broad coverage. To simulate the typical information-seeking behavior of general users—who rarely look beyond the first few pages of results—we screened the top 150 videos sorted by comprehensive relevance (default algorithm ranking) for each platform, rather than retrieving all available content. Consequently, a total of 600 videos (150 per platform) were included in the final analysis. Our study focused on analyzing health information related to adolescent depression as presented to viewers on these platforms. Inclusion criteria were: (1) videos containing content on adolescent depression and (2) videos in Chinese. Exclusion criteria included: (1) duplicate content within the same platform. We defined 'duplicates' as videos with identical visual and audio components that appear multiple times within a single application (e.g., re-uploads or system errors). In these cases, only the version with the earliest upload date was retained to ensure data uniqueness; (2) advertisements; (3) videos containing irrelevant content (e.g., other psychiatric disorders such as anxiety disorders, bipolar affective disorders, schizophrenia, etc.); (4) lack of authorship; and (5) poor sound quality. For eligible videos, we recorded and analyzed features, including the number of likes, comments, favorites, shares, days since upload, video duration, video source, number of followers of the uploader, video presentation format, video content, and knowledge of various diseases and medical specialties. All extracted data were recorded in Excel (Microsoft Corp).

2.3 Classification of Videos

In this study, the videos were classified into four groups based on their sources, three groups based on content, seven groups based on knowledge of different diseases, four groups based on the form of the video presentation, and two groups based on various medical specialties. The sources of the videos were categorized as follows: (1) Individual health professionals, (2) Healthcare organizations, (3) Media agencies, and (4) Non-professional users. Video content was categorized into three types: (1) disease knowledge, (2) outpatient scenarios, and (3) personal experiences. The knowledge of different diseases was classified into seven categories: (1) treatment, (2) prevention, (3) incidence, (4) symptom, (5) definition, (6) posttreatment caveats, and (7) reexamination. Video presentation formats were classified as follows: (1) expert monologues, (2) dialogues, (3) visual pictures and literature, and

(4) vlogs of patients. The different medical specialties were classified into two categories: (1) Clinical medicine and (2) TCM.

2.4 Video Quality and Reliability Assessments

The Journal of the American Medical Association (JAMA) Benchmarking Criteria is a well-established tool for evaluating the reliability of information on health-related websites, consisting of four assessment dimensions: authorship, attribution, disclosure, and currency. The Global Quality Scale (GQS) is a 5-point Likert scale designed to subjectively assess the overall quality of a video, considering the flow and ease of use of the site, with scores ranging from 1 (poor quality) to 5 (good flow and quality). The modified DISCERN tool is widely recommended in the literature for measuring the reliability and quality of web-based resources and comprises five questions, each weighted at 1. This study extensively utilized the JAMA, GQS, and modified DISCERN scores. Details of the specific scores for GQS, JAMA, and modified DISCERN are shown in supplementary tables 1, 2, and 3.

The research team registered and logged into a new account for each video to minimize bias from personal recommendation algorithms. All videos were collected and downloaded by a single researcher (W-QL), and the order of the videos was randomized to reduce bias in rating. The videos were then assessed and scored by two qualified psychiatrists (M-SH and Z-DR) with extensive experience in the field. Before scoring, the raters reviewed the instructions for the JAMA, modified DISCERN, and GQS scores, and discussed the details to prevent cognitive bias. The Cohen's Kappa coefficient between the two raters was 0.67, indicating substantial agreement. In cases where the ratings of the two experts did not agree, an arbitrator (CM) was responsible for assigning the final score. Consensus was reached among all authors on the rating results.

2.5 Statistical Analyses

The data in this study were nonparametrically distributed; therefore, descriptive statistics were performed using the median and interquartile range (IQR). Between-group differences were assessed using the Kruskal-Wallis test, followed by multiple comparisons with Dunn's multiple comparison test. Relationships between quantitative variables were evaluated using Spearman correlation analysis. Poisson regression models were utilized to assess the effect of video variables on video quality. All analyses were performed using R version 4.4.2 (<http://www.R-project.org>, The R Foundation) and Empower software (www.empowerstats.com; X&Y Solutions, Inc., Boston MA); a two-tailed $P < 0.05$ was statistically significant.

3. Results

3.1 Video Characteristics

Based on keyword searches conducted for this study, 600 videos were collected for data extraction and analysis. Among these, 150 videos were sourced from each of Douyin, Bilibili, WeChat, and Xiaohongshu. The overall characteristics of these videos are presented in Table 1, revealing significant differences ($P < 0.05$) across platforms in terms of interactivity and content features. Douyin videos exhibited higher engagement metrics than other platforms, with median values of 13,000 likes, 1,119.5 comments, 3,579.50 saves, and 4,689 shares ($P < 0.001$). Bilibili videos were the longest, with a median duration of 234.5 seconds, while Xiaohongshu videos were the shortest, with a median duration of 37.50 seconds ($P < 0.001$). Regarding publication duration, Bilibili videos had the longest median at 370 days, and WeChat videos had the shortest at 60 days ($p < 0.001$). Regarding video quality scores, significant differences were observed across the four platforms for GQS, JAMA, and Modified DISCERN ($P < 0.05$).

3.2 Video Source and Content

As shown in Table 2 and Figure 2, the sources and content of videos related to adolescent depression are listed. Video uploaders were predominantly Individual health professionals (486/600, 81%) and Clinical medicine practitioners (333/600, 55.5%). Content primarily comprised disease knowledge (344/600, 57.33%) and personal experiences (186/600, 31%). Disease knowledge within the videos concentrated on treatment (208/600, 34.67%), symptoms (140/600, 23.33%), and prevention (93/600, 15.5%). Video demonstrations predominantly comprised visual imagery and literature (199/600, 33.17%) and expert monologues (216/600, 36%).

3.3 Video Quality and Reliability Assessments

As shown in Figure 3, the difference in GQS scores between Douyin and Bilibili was not statistically significant ($P > 0.05$), but Douyin's GQS score was significantly higher than that of Xiaohongshu ($P < 0.05$). JAMA scores indicated that the Douyin group was significantly higher than all other platforms (all $P < 0.05$). Moreover, Bilibili demonstrated significantly superior JAMA scores compared to WeChat and Xiaohongshu (all $P < 0.001$). Differences in the modified DISCERN scores were similarly pronounced, with Douyin performing markedly better than Bilibili ($P < 0.01$) and Xiaohongshu ($P < 0.05$). Despite Bilibili's relative advantage, its overall score remained lower than Douyin's. WeChat and Xiaohongshu generally scored lower, indicating a considerable proportion of videos failed to meet quality standards and lacked reliability. In summary, Douyin outperformed other platforms across the GQS, JAMA, and modified DISCERN scores.

This study further assessed video quality across different sources and content types using the GQS score, JAMA benchmark criteria, and Modified DISCERN score. Analysis revealed that videos published by healthcare organizations and individual health professionals significantly outperformed those by non-professional users across all scoring metrics (all $P < 0.01$). Notably, healthcare organizations also demonstrated substantially higher JAMA and Modified DISCERN scores compared to media agencies (all $P < 0.05$) (Figure 4). Regarding content, Outpatient scenarios videos achieved significantly higher JAMA scores than Personal experience videos ($P < 0.05$). Furthermore, Disease knowledge videos demonstrated superior quality to Personal experience videos in Modified DISCERN scores ($P < 0.05$) (Figure 5).

As shown in Figure 6, to examine whether different types of professionals influence video quality and reliability, we further categorized the professionals' videos into two groups. No significant differences were observed in the three-item ratings for either clinical physicians or traditional Chinese medicine practitioners (all $P > 0.05$).

3.4 Correlation Analysis and Poisson Regression Analysis

As the data did not conform to a normal distribution, Spearman's correlation analysis was employed to examine relationships between variables (Figure 7). Firstly, regarding video feature variables, all interaction metrics (likes, comments, saves, shares) exhibited significant and strong positive correlations ($r = 0.73\text{--}0.89$, all $P < 0.0001$). Additionally, the number of likes showed a weak positive correlation with the number of days since posting ($r = 0.10$, $P < 0.05$), whilst exhibiting a negative correlation with video duration ($r = -0.11$, $P < 0.01$). Secondly, regarding the quality assessment systems, the GQS, JAMA, and modified DISCERN scores all showed significant positive correlations with the four-engagement metrics (likes, comments, saves, shares) (all $P < 0.001$). Notably, the JAMA score exhibited unique characteristics: it showed significant positive correlations with follower count ($r = 0.11$), video duration ($r = 0.12$), and days since posting ($r = 0.12$) ($P < 0.01$); whereas GQS and modified DISCERN scores demonstrated no significant correlations with these three variables (all $P > 0.05$). Finally, Poisson regression analysis (Table 3) further assessed the influence of each variable. Results indicated that no video variable—including interaction metrics, publication date, or

duration—was an independent significant predictor of GQS, JAMA, or modified DISCERN scores (all $P > 0.05$).

4. Discussion

4.1 Principal Findings

This study is the first to evaluate comprehensively the content quality and information accuracy of videos related to adolescent depression on China's four major short video platforms (Douyin, Bilibili, WeChat, and Xiaohongshu). The results of this study show that Douyin is the most popular platform, while Bilibili's videos last longer. This study used GQS, JAMA Benchmarking Criteria, and the improved DISCERN tool to assess the quality and reliability of the videos. The results revealed that the overall quality of adolescent depression-related content across all four platforms was suboptimal, potentially attributable to the low entry barriers and insufficient video review mechanisms inherent to these platforms. Among the platforms, Douyin demonstrated superior content quality and reliability performance. Among these, Douyin's three scores were significantly higher than those of Xiaohongshu (all $P < 0.05$), while on the adjusted DISCERN and JAMA scores, Douyin was significantly higher than Bilibili (all $P < 0.05$).

By contrast, most videos on WeChat and Xiaohongshu exhibit poor quality and reliability. This disparity may stem from Douyin's superior video sources and content types: its material primarily originates from individual health professionals and focuses on disease knowledge, whereas Xiaohongshu relies more heavily on personal narratives. Furthermore, Douyin's video format, dominated by expert monologues, proves more conducive to conveying specialised, systematic information. Further analysis indicates that Douyin videos outperform other platforms on interactivity metrics such as likes, comments, and shares. This advantage may be attributed to its sophisticated algorithmic recommendation system and user engagement metrics.

4.2 Factors associated with video popularity

Among the substantial engagement metrics for related video content, a pronounced focus on adolescent depression is evident. Findings reveal substantial variations in engagement metrics across platforms, with Douyin demonstrating the highest interaction levels. Its median likes count reached 13,000, while the upper quartile span for certain videos peaked at 42,250 likes. These indicators—encompassing likes, comments, saves, and shares—reflect both the videos' popularity and public interest in this critical mental health issue (D'Arrigo et al. 2021; Easton et al. 2018). This study found that the number of videos uploaded by clinical medical practitioners (55.5%) and traditional Chinese medicine practitioners (44.5%) was comparable, constituting the bulk of professional content. Further analysis revealed no significant differences in quality and reliability ratings between videos produced by these two professional groups. Nevertheless, the high participation rate among TCM practitioners (nearly half) may be attributed to depression's unique nature as a psychosomatic disorder, potentially making the public more inclined towards TCM approaches (Guan et al. 2024). Current research further indicates that most videos (57.33%) originating from short-form video-sharing platforms aim to convey disease knowledge about depression, with content concerning treatment (34.67%) and symptoms (23.33%) predominating. Previous studies have highlighted that videos addressing depressive symptoms serve as vital tools for disseminating disease knowledge due to their visual nature and accessibility (Yang et al. 2023; Chao et al. 2023). Videos concerning treatment (such as psychotherapy and medication) are particularly useful and instructive, helping more people understand coping strategies (Zhu et al. 2024; Thapar et al. 2012). The findings of this study further substantiate the value of such content, demonstrating that videos conveying disease knowledge significantly outperform those based on personal experience in revised DISCERN scores. This indicates that videos focusing on symptoms and treatments are not only plentiful but also provide more reliable information, making them a crucial medium for disseminating accurate disease knowledge. However,

many patients underestimate the severity of depressive symptoms in adolescents and the importance of early intervention in clinical settings, leading to delays in effective treatment. Research indicates that untreated adolescent depression can result in deteriorating academic performance, impaired social functioning, and an increased risk of suicidal thoughts or even suicide attempts (Tibber and Silver 2022). Disseminating high-quality information on depression symptoms and treatment via short-form video platforms can effectively enhance awareness among patients and their families, enabling them to identify symptoms at an early stage and proactively seek professional assistance (Davies *et al.* 2013). Correlation analysis confirmed a significant and strong positive relationship between likes, comments, saves, and shares ($r = 0.73\text{--}0.89$, $P < 0.0001$). This indicates that increased numbers of likes and comments on a video correspond to a heightened probability of it being saved and shared. Furthermore, the number of followers an uploader possesses exhibits a significant positive correlation with both the volume of video shares ($r = 0.32$) and other engagement metrics. This indicates that a creator's follower base substantially influences the dissemination effectiveness of videos addressing adolescent depression.

4.3 Quality of short videos about adolescent depression

Firstly, short-form video platforms possess inherent limitations in disseminating complex medical knowledge, particularly concerning multidimensional disorders such as adolescent depression. This stems from the platforms' typical constraints of brief duration and unidirectional communication models. Our findings highlight a nuanced trade-off between platform characteristics—specifically video duration—and communication effectiveness. Platforms favoring short-form content, such as Douyin (median duration: 58.5s), demonstrated significantly higher user engagement compared to long-form platforms like Bilibili (median duration: 234.5s). This aligns with the negative correlation observed between video duration and likes ($r = -0.11$), suggesting that the concise, fast-paced nature of short videos caters better to the fragmented attention span of adolescent users, thereby facilitating broader dissemination of health information. Conversely, the long-video format offers theoretical advantages for information completeness. We observed a positive correlation between duration and JAMA scores ($r = 0.12$), indicating that longer formats allow creators more time to disclose authorship, credentials, and references. This aligns with the principle that medical education requires sufficient time to construct comprehensive knowledge frameworks (Ludmerer 2017; Kirch and Sadofsky 2021). However, length alone did not guarantee superior information quality; Bilibili's long videos scored lower in GQS and modified DISCERN than Douyin's short videos. This discrepancy suggests that content condensation by professional sources (predominant on Douyin) is more effective for quality assurance than merely extending duration. Short-form platforms force professionals to distill complex medical concepts into clear, "expert monologues", which may paradoxically reduce ambiguity and improve information uptake compared to unstructured, lengthy narratives often found on long-video platforms. It is therefore recommended to flexibly adjust video length according to content complexity, ensuring adequate explanation of key medical concepts while maintaining audience attention to enhance public health literacy. Secondly, our findings confirm the decisive role of professional sources. Data indicates that videos published by Individual health professionals and Healthcare organisations significantly outperform those by non-professional users across all quality metrics (GQS, JAMA, Modified DISCERN) ($P < 0.01$). Currently, platforms such as Douyin, Bilibili, WeChat, and Xiaohongshu have introduced verification mechanisms to validate medical practitioners' credentials. However, platforms have not entirely restricted non-professional uploaders, resulting in some medical videos still being provided by unqualified individuals. For instance, our data reveals that non-professional user videos account for 14.00% of Bilibili's content—the highest proportion among the four platforms—which may partly explain its lower overall quality score compared to Douyin. To address this, platforms should strengthen vetting of uploaders' credentials, particularly for content involving sensitive topics like mental health, to ensure information accuracy and reliability. Thirdly,

short videos primarily target the general public, requiring doctors to convey information concisely and clearly within limited timeframes (Hu et al. 2024). This study found that different presentation formats correlate closely with platform quality performance. The Douyin platform predominantly employs the ‘expert monologue’ format (accounting for 52.67%), which facilitates the systematic transmission of information. This aligns with its strong performance in JAMA and DISCERN ratings. In contrast, Xiaohongshu heavily relies on ‘visual images and text’ (44.00%) and ‘personal experience’ content (44.67%). This fragmented and subjective presentation may compromise depth and professionalism, resulting in lower scores across all quality metrics. To resolve this contradiction, professional creators are advised to draw upon the successful approach of ‘expert monologues’. This involves integrating case studies with medical knowledge to convey scientific information through more logical narratives within limited timeframes, rather than over-relying on visually dominant elements that lack depth.

4.4 Recommendations Based on Our Results

In comparison with videos of an entertaining nature, health-related content frequently encounters the challenge of inadequate appeal due to its complexity and professional nature. To enhance the impact of such videos, it is recommended that platforms prioritize Individual health professionals and Healthcare organizations with extensive influence as content creators, leveraging their professionalism and fan base to expand the dissemination of correct medical information. Concurrently, administrators of short-video platforms must strengthen the management of medical workers’ identity verification to ensure the reliability and professionalism of video content. In terms of video length, videos that are too short are difficult to provide sufficient depth of information and may even produce ambiguity. At the same time, too-long videos may affect viewers’ motivation to watch. Therefore, video creators must reasonably design the video duration to deliver high-quality and valuable information within a limited time. In addition, attracting more experts in related fields to join short video campaigns is crucial, as the public is more inclined to trust and pay attention to highly influential experts.

4.5 Practical Significance

Enhancing public awareness of adolescent depression is crucial for its early identification, prevention, and management. Short videos on the internet have emerged as a significant source of health-related information for the public. However, the quality of such videos varies considerably across different disorders, particularly in the context of adolescent depression. This study represents the first systematic evaluation of the quality and reliability of short videos on teenage depression, utilizing multiple assessment tools, including the JAMA score, GQS score, and modified DISCERN score. The analysis revealed that the quality of adolescent depression-related videos on platforms such as Douyin, Bilibili, WeChat, and Xiaohongshu remains limited. Based on these findings, this study recommends improving the popularity and quality of short videos on adolescent depression. By generating reliable and high-quality information sources, public understanding of teenage depression can be significantly enhanced.

4.6 Strengths and Limitations

This study offers several key strengths. First, focusing on China’s four largest short video platforms provides more robust and reliable results while avoiding the limitations associated with single-platform analyses. Second, the study employs a comprehensive approach, utilizing GQS and JAMA scores to evaluate video quality and a modified DISCERN tool to assess reliability, thereby enabling a multidimensional video content analysis. This is the first study in China to systematically examine the quality of short videos related to adolescent depression across four major social media platforms.

However, this study also has limitations. First, the video search was confined to Chinese platforms, which restricts the generalizability of the findings to other regions. Second, the assessment of

video quality relies primarily on subjective judgment. Although three researchers with high inter-rater consistency independently conducted the ratings, the potential for subjective bias cannot be eliminated. Third, the assessment of user engagement was based on quantitative metrics (e.g., the volume of comments) without analyzing the sentiment (positive vs. negative) of these interactions. Consequently, high engagement figures could potentially reflect controversy or criticism rather than endorsement or educational value. Future studies should employ sentiment analysis to better understand the nature of viewer interactions.

5. Conclusion

Medical professionals predominantly upload videos related to adolescent depression on short-video sharing platforms and primarily disseminate disease-related information through expert monologues. However, these videos' overall reliability and quality remain suboptimal and require significant improvement. Users should exercise caution and discernment when accessing such content on short-video platforms.

Abbreviations

TCM, traditional Chinese medicine; JAMA, Journal of the American Medical Association; GQS, Global Quality Scale.

Declarations

Author Contributions

Conceptualization: Siheng Ma and Chengwen Song. **Methodology:** Siheng Ma, Qilong Wang, and Xin Qi. **Data Curation:** Xixi Fan, Yuyu Zhang, Yayan Wang, Chen Wang, and Qian Wu. **Formal Analysis:** Siheng Ma, Qilong Wang, and Xin Qi. **Writing – Original Draft:** Siheng Ma, Qilong Wang, and Xin Qi. **Writing – Review & Editing:** Xixi Fan, Yuyu Zhang, Yayan Wang, Chen Wang, Qian Wu, Siheng Ma, and Chengwen Song. **Supervision:** Siheng Ma and Chengwen Song. Siheng Ma, Qilong Wang, and Xin Qi contributed equally as co-first authors. All authors reviewed and approved the final manuscript and agree to be accountable for its content.

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Ethics Approval and Informed Consent

The study was conducted in accordance with the Declaration of Helsinki. The protocol was reviewed and approved by the Medical Ethics Committee of the First Affiliated Hospital of the Air Force Medical University (Approval No. KY20242219-C-1). The committee waived the requirement for individual informed consent because the study was retrospective and used publicly available social-media content.

Consent for Publication

Not applicable. The manuscript contains no identifiable individual-level information or images.

Data Availability

The video-level extraction and rating dataset generated and analysed during this study is available from the corresponding author upon reasonable request, subject to applicable platform terms, privacy safeguards, and institutional requirements. The videos were publicly accessible on Douyin, Bilibili,

WeChat, and Xiaohongshu during the collection period; the search strategy and collection dates are reported in the Methods.

Conflicts of Interest

The authors declare that they have no competing interests.

Acknowledgments

Not applicable.

Declaration of Generative AI Use

Not applicable.

Clinical Trial Registration

Not applicable. This study was not a clinical trial.

Supplementary Materials

Supplementary Tables S1–S3 provide the criteria used to assess the quality and reliability of the videos: the Global Quality Score, the JAMA Benchmark Criteria, and the modified DISCERN instrument.

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Tables

Table 1. General characteristics and scoring of videos related to adolescent depression

Variables	Total (n = 600)	Douyin (n = 150)	Bilibili (n = 150)	WeChat (n = 150)	Xiaohongshu (n = 150)	P
Likes, median (IQR)	3,061.50 (1,096.00, 16,000.00)	13,000.00 (3,429.75, 42,250.00)	2,151.50 (1,009.00, 6,196.50)	1,285.50 (384.50, 10,750.00)	2,363.50 (1,285.00, 8,248.00)	< 0.001
Comments, median (IQR)	253.00 (58.00, 1,107.50)	1,119.50 (197.00, 6,146.50)	273.50 (73.25, 828.75)	104.00 (22.75, 603.00)	147.50 (37.75, 554.75)	< 0.001
Saves, median (IQR)	1,333.00 (354.75, 5,546.50)	3,579.50 (1,307.25, 8,866.75)	1,308.50 (449.25, 2,944.00)	926.00 (147.50, 11,000.00)	787.50 (285.25, 1,992.50)	< 0.001
Shares, median (IQR)	533.00 (95.00, 2,892.00)	4,689.00 (911.25, 19,000.00)	312.00 (122.75, 831.25)	1,022.00 (101.50, 4,237.75)	82.00 (31.25, 388.25)	< 0.001
Days since published, median (IQR)	137.00 (40.00, 355.50)	134.00 (44.00, 370.75)	370.00 (190.00, 600.00)	60.00 (10.25, 176.25)	100.00 (42.75, 200.25)	< 0.001
Duration, median (IQR)	64.00 (27.00, 164.00)	58.50 (28.25, 115.25)	234.50 (105.75, 612.00)	42.00 (17.00, 71.75)	37.50 (17.25, 80.50)	< 0.001
Fans, median (IQR)	46,955.50 (4,437.50, 270,500.00)	151,304.50 (22,631.75, 885,804.00)	64,500.00 (8,225.50, 220,250.00)	93,488.50 (18,675.25, 290,822.50)	4,498.00 (776.50, 15,750.00)	< 0.001
GQS score, n (%)						
1	3 (0.50)	2 (1.33)	0 (0.00)	0 (0.00)	1 (0.67)	0.007
2	120 (20.00)	27 (18.00)	26 (17.33)	25 (16.67)	42 (28.00)	
3	356 (59.33)	93 (62.00)	86 (57.33)	98 (65.33)	79 (52.67)	
4	119 (19.83)	28 (18.67)	36 (24.00)	27 (18.00)	28 (18.67)	
5	2 (0.33)	0 (0.00)	2 (1.33)	0 (0.00)	0 (0.00)	
JAMA score, n (%)						
1	29 (4.83)	1 (0.67)	1 (0.67)	12 (8.00)	15 (10.00)	0.014
2	357 (59.50)	93 (62.00)	69 (46.00)	96 (64.00)	99 (66.00)	
3	203 (33.83)	51 (34.00)	75 (50.00)	41 (27.33)	36 (24.00)	
4	11 (1.83)	5 (3.33)	5 (3.33)	1 (0.67)	0 (0.00)	
Modified DISCERN score, n (%)						
1	6 (1.00)	0 (0.00)	0 (0.00)	4 (2.67)	2 (1.33)	< 0.001
2	134 (22.33)	38 (25.33)	18 (12.00)	35 (23.33)	43 (28.67)	
3	374 (62.33)	104 (69.33)	107 (71.33)	87 (58.00)	76 (50.67)	
4	82 (13.67)	8 (5.33)	21 (14.00)	24 (16.00)	29 (19.33)	
5	4 (0.67)	0 (0.00)	4 (2.67)	0 (0.00)	0 (0.00)	

Abbreviations: JAMA, Journal of the American Medical Association; GQS, Global Quality Scale.

Table 2. Sources and content of videos related to adolescent depression

Variables	Total (<i>n</i> = 600), <i>n</i> (%)	Douyin (<i>n</i> = 150), <i>n</i> (%)	Bilibili (<i>n</i> = 150), <i>n</i> (%)	WeChat (<i>n</i> = 150), <i>n</i> (%)	Xiaohongshu (<i>n</i> = 150), <i>n</i> (%)	<i>P</i>
Video Source, <i>n</i> (%)						< 0.001
Individual health professionals	486 (81.00)	133 (88.67)	117 (78.00)	115 (76.67)	121 (80.67)	
Healthcare organizations	28 (4.67)	4 (2.67)	4 (2.67)	14 (9.33)	6 (4.00)	
Media agencies	28 (4.67)	4 (2.67)	8 (5.33)	13 (8.67)	3 (2.00)	
Non-professional users	58 (9.67)	9 (6.00)	21 (14.00)	8 (5.33)	20 (13.33)	
Different medical specialties, <i>n</i> (%)						0.007
Clinical medicine practitioner	333 (55.50)	90 (60.00)	87 (58.00)	91 (60.67)	65 (43.33)	
TCM practitioner	267 (44.50)	60 (40.00)	63 (42.00)	59 (39.33)	85 (56.67)	
Video content, <i>n</i> (%)						< 0.001
Disease knowledge	344 (57.33)	106 (70.67)	89 (59.33)	80 (53.33)	69 (46.00)	
Outpatient scenarios	70 (11.67)	15 (10.00)	13 (8.67)	28 (18.67)	14 (9.33)	
Personal experience	186 (31.00)	29 (19.33)	48 (32.00)	42 (28.00)	67 (44.67)	
Video presentation form, <i>n</i> (%)						< 0.001
Expert monologue	216 (36.00)	79 (52.67)	54 (36.00)	42 (28.00)	41 (27.33)	
Dialogue	77 (12.83)	20 (13.33)	19 (12.67)	22 (14.67)	16 (10.67)	
Visual pictures and literature	199 (33.17)	37 (24.67)	40 (26.67)	56 (37.33)	66 (44.00)	
Vlog of patients	108 (18.00)	14 (9.33)	37 (24.67)	30 (20.00)	27 (18.00)	
Different disease knowledge, <i>n</i> (%)						0.738
Treatment	208 (34.67)	58 (38.67)	54 (36.00)	52 (34.67)	44 (29.33)	
Prevention	93 (15.50)	25 (16.67)	22 (14.67)	22 (14.67)	24 (16.00)	
Incidence	56 (9.33)	10 (6.67)	21 (14.00)	11 (7.33)	14 (9.33)	
Symptom	140 (23.33)	32 (21.33)	27 (18.00)	42 (28.00)	39 (26.00)	
Definition	43 (7.17)	9 (6.00)	10 (6.67)	11 (7.33)	13 (8.67)	
Posttreatment caveats	29 (4.83)	7 (4.67)	9 (6.00)	6 (4.00)	7 (4.67)	
Reexamination	31 (5.17)	9 (6.00)	7 (4.67)	6 (4.00)	9 (6.00)	

Abbreviation: TCM, traditional Chinese medicine.

Table 3. Associations between video variables and GQS score, JAMA score, and modified DISCERN score

Video variables	Relative risk (95% CI)	P-value
GQS score		
Likes	1.000000004 (0.999998893, 1.000001116)	0.99
Comments	0.999997715 (0.999988268, 1.000007163)	0.64
Shares	1.000000363 (0.999998851, 1.000001874)	0.64
Saves	1.000001487 (0.999997980, 1.000004995)	0.41
Days since published	1.000017850 (0.999808590, 1.000227155)	0.87
Duration	0.999998961 (0.999874533, 1.000123405)	0.99
JAMA score		
Likes	1.000000493 (0.999999350, 1.000001637)	0.40
Comments	1.000006165 (0.999996970, 1.000015359)	0.19
Shares	0.999999022 (0.999997380, 1.000000664)	0.24
Saves	1.000000585 (0.999996622, 1.000004547)	0.77
Days since published	1.000090627 (0.999856139, 1.000325170)	0.45
Duration	1.000032714 (0.999897891, 1.000167554)	0.63
Modified DISCERN score		
Likes	1.000000181 (0.999999073, 1.000001289)	0.75
Comments	1.000001695 (0.999992545, 1.000010846)	0.72
Shares	0.999999729 (0.999998106, 1.000001352)	0.74
Saves	1.000000060 (0.999996394, 1.000003725)	0.97
Days since published	0.999992448 (0.999779443, 1.000205500)	0.94
Duration	0.999967692 (0.999836524, 1.000098877)	0.63

Figures

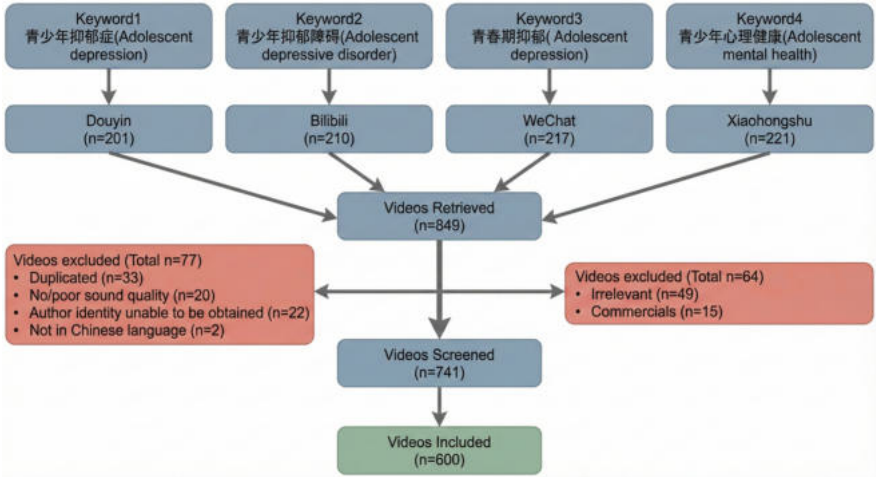


Figure 1. Search strategies for short videos of adolescent depression

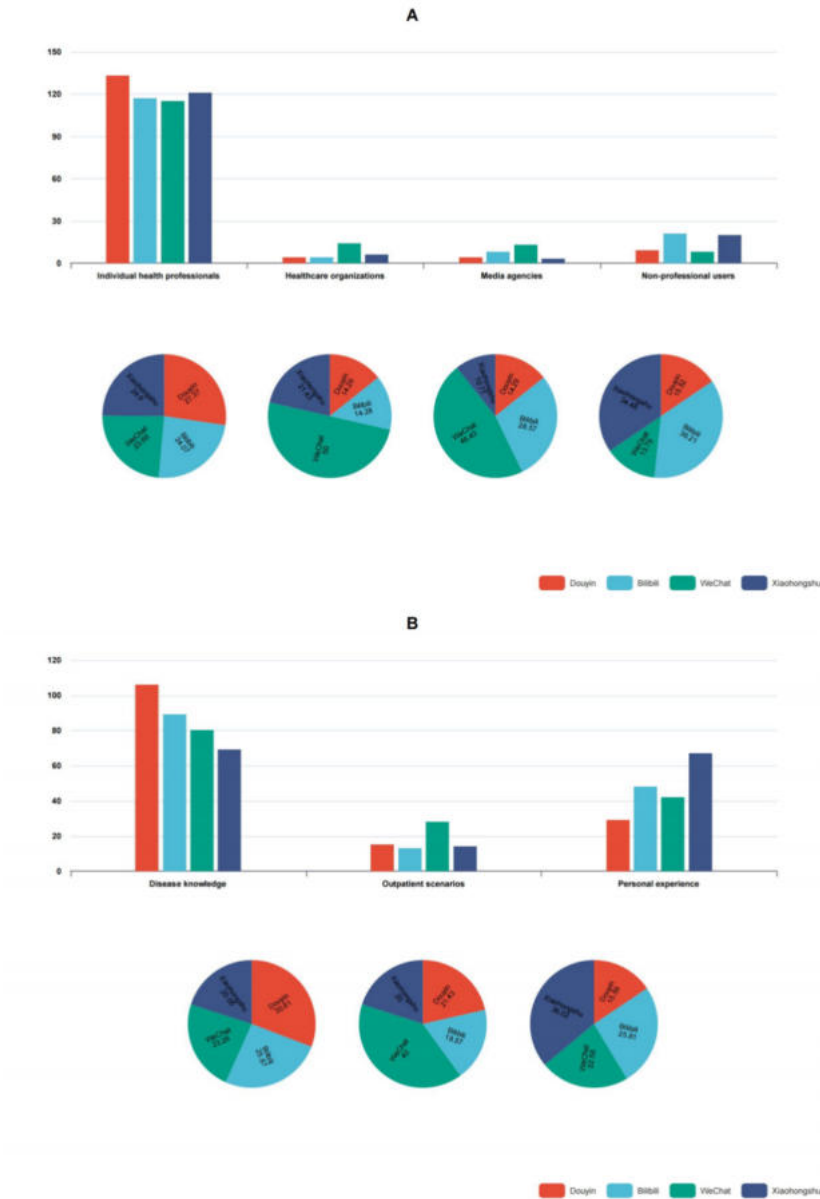


Figure 2. The number and percentage of adolescent depression videos from various sources and content types on Douyin, Bilibili, WeChat, and Xiaohongshu: (A) Sources of the videos; (B) Content types.

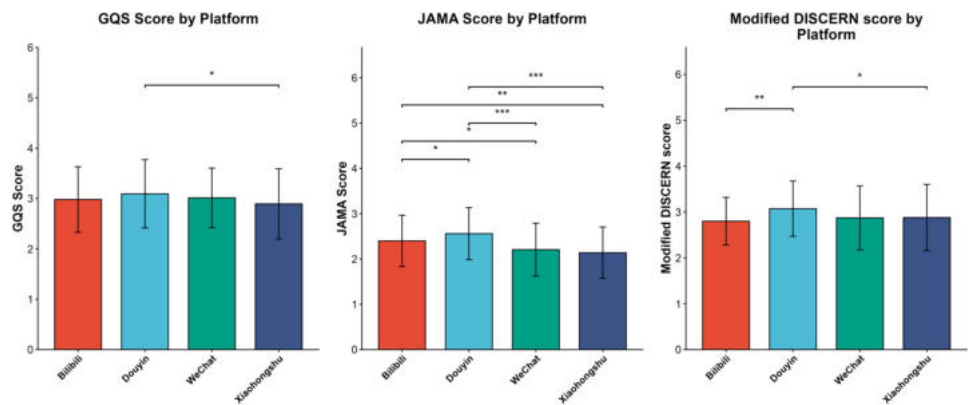


Figure 3. GQS score, JAMA score, modified DISCERN score, and corresponding AI score for short videos on adolescent depression across different platforms (Douyin, Bilibili, WeChat, and Xiaohongshu). * $P < 0.05$, ** $P < 0.01$. ns: not significant at $P \geq 0.05$.

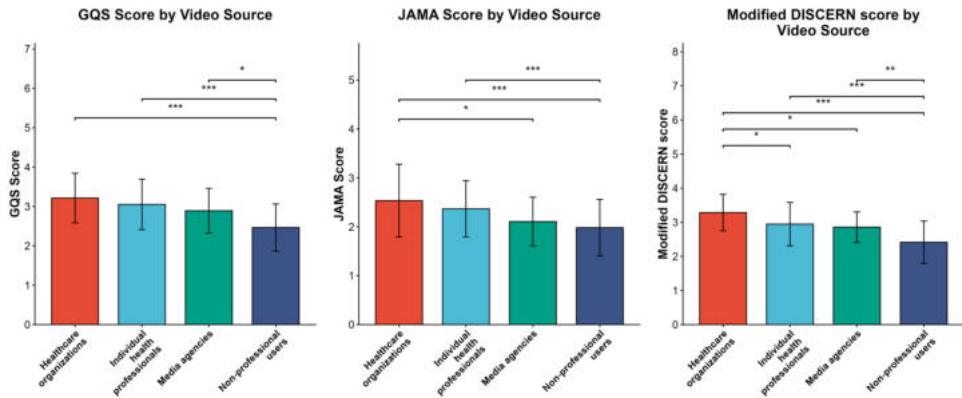


Figure 4. GQS score, JAMA score, and modified DISCERN score from different sources of videos related to adolescent depression. * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$. ns: not significant at $P \geq 0.05$.

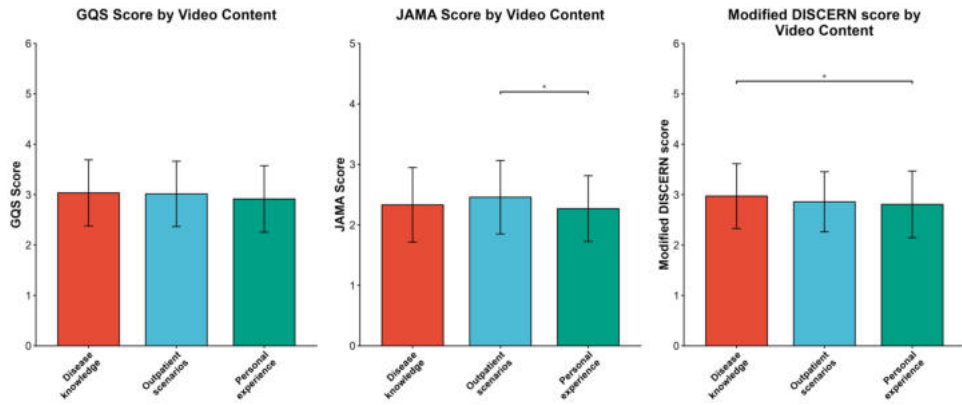


Figure 5. GQS score, JAMA score, and modified DISCERN score for adolescent depression-related videos with different content. * $P < 0.05$, ** $P < 0.01$. ns: not significant at $P \geq 0.05$.

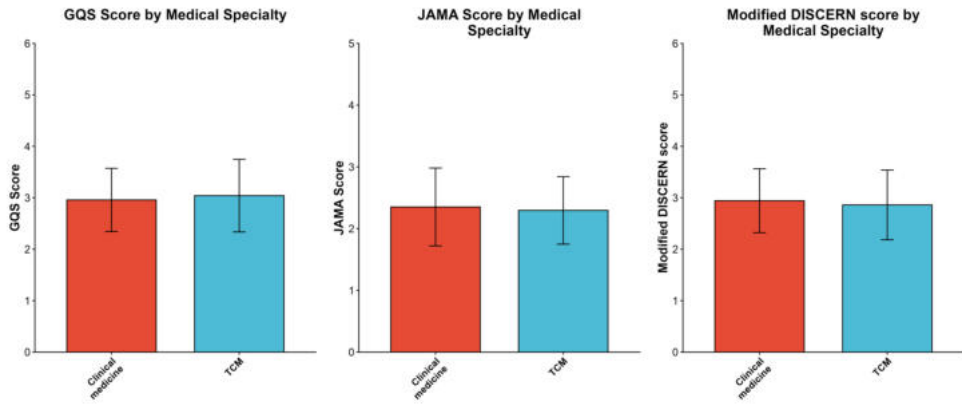


Figure 6. GQS score, JAMA score, and modified DISCERN score for adolescent depression-related videos from different medical specialties. * $P < 0.05$, ** $P < 0.01$. ns: not significant at $P \geq 0.05$.

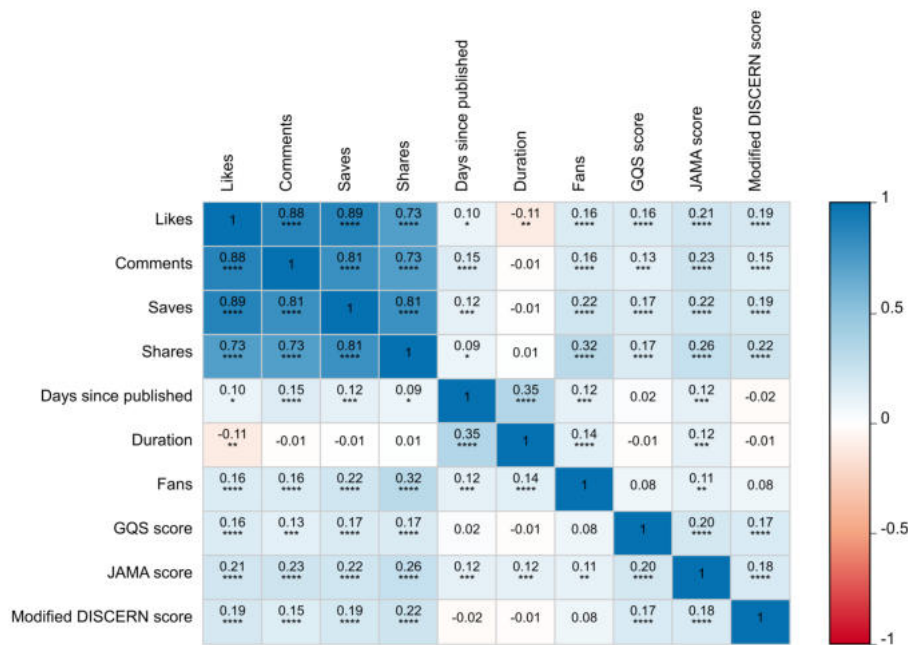


Figure 7. Spearman correlation analyses between video variables and between video variables and GQS scores, JAMA scores, and modified DISCERN scores. * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$, **** $P < 0.0001$.