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The Health Rumour-Refuting Short Videos on Douyin: A Content and Quality Analysis

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ABSTRACT

Short video platforms such as Douyin have become increasingly important in China as channels for disseminating public health information. However, while these platforms can facilitate the rapid spread of accurate health messages, they also contribute to the viral dissemination of misinformation. In response, many health rumour-refuting videos have been produced to correct misleading claims and promote scientifically validated knowledge. This study conducted a content analysis of 100 health rumour-refuting videos with high user engagement on Douyin, aiming to examine their thematic characteristics, source credibility, and interaction patterns. Videos were categorized by blogger type: doctors, official media, unofficial media, and individual. Moreover, videos were evaluated using DISCERN and GQS instruments to assess the quality and reliability of the content. The descriptive results showed that doctors were responsible for the majority of video production, while official media accounts achieved the highest engagement levels, particularly in terms of likes and comments. Regression analyses further confirmed that videos published by official media and certified doctors attracted significantly more user interaction. The findings suggest that combining professional authority with emotional content may enhance the effectiveness of online health communication. This study provides empirical evidence to guide future digital health strategies. It highlights the need for improved platform governance and collaborative efforts across sectors to counteract the harmful effects of health misinformation online.

Keywords: *Health rumour-refuting, user engagement, health information, misinformation, social media.*

INTRODUCTION

In recent years, short video platforms have become essential for the public to obtain health information. Take Douyin as an example. As of 2023, its monthly active users have exceeded 750 million, and the page views of health-related content on the platform have continued to grow, indicating that social media is gradually becoming an essential medium for the dissemination of medical knowledge and the improvement of health literacy (CNNIC, 2023). Short videos have rapidly gained popularity due to their intuitive and easy-to-understand features, especially demonstrating significant potential in disseminating medical expertise. However, this dissemination model is also accompanied by obvious risks. The platform content is highly fragmented and entertainment-oriented, and the review mechanism is not yet sound, making false or misleading health information more likely to spread rapidly among users and posing challenges to public health cognition and behaviour (Brennen et al., 2020).

Health rumour-refuting videos refer to short video content to correct online health rumours and clarify false health information. Professionals with medical backgrounds, official institutions, or certified bloggers usually produce such videos. The core goal is disseminating authoritative health knowledge based on scientific evidence (Elhariry et al., 2024). Although

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this type of content performs well regarding information accuracy and credibility, its visibility and interaction rate are often not high, making it difficult to stand out among the entertaining content preferred by the recommendation mechanism (Kuo & Chen, 2025). Even high-quality health videos released by doctors make it challenging to achieve the dissemination effect of non-professional creators (Bell et al., 2023). The more professional and rational the content is, the more limited its dissemination effect may be (Gong et al., 2024). This contradiction also raises a core question: In the current social media ecosystem, what kind of creator identity, content characteristics, and presentation methods can help enhance the dissemination effect and user participation of health rumour-refuting videos? There is still a lack of systematic empirical research regarding the rumour-refuting content on short video platforms, especially in the context of the Chinese Douyin platform. Understanding the interaction mechanism among publisher type, information content, and user behaviour is still relatively weak.

This study uses the diffusion of innovation theory as the theoretical basis to respond to the above research gap. It systematically explores the dissemination characteristics and user interaction behaviours of health rumour-refuting videos on the Douyin platform. According to the theoretical model proposed by Rogers (2003), whether information is widely adopted depends on factors such as its relative advantages, complexity, testability, observability, and dissemination channels. This study regards health rumour-refuting videos as an innovative form of digital health intervention. The identity of the publisher represents the credibility of the communication source. The information structure and expression method affect the audience's cognitive processing of the information, while the user interaction behaviour reflects the willingness to adopt the communication path. This theory has been widely used in the digital age to explain the diffusion mechanisms of health technologies, public health initiatives, and information reception behaviours (Chou et al., 2013).

Therefore, this study systematically analyses health rumour-refuting videos posted by different types of entities on the Douyin platform using quantitative content analysis. It focuses on examining how different information sources and structural qualities relate to user engagement metrics, including likes, comments, and shares. This research offers theoretical and practical implications by revealing the content and structural characteristics that influence the dissemination of reliable health information. These findings contribute to platform-level content governance, support public health education, and inform communication strategies for health professionals engaging with social media.

LITERATURE REVIEW

Health Misinformation on Social Media

The rise of short video platforms has greatly facilitated health knowledge dissemination and provided a new channel for spreading misinformation. Misinformation often has the characteristics of fragmentation, emotionality, and easy interaction and is more likely to spread rapidly, driven by recommendation algorithms (Brennen et al., 2020). Lundy (2023) pointed out that in public health emergencies such as COVID-19, health misinformation spreads faster and has broader coverage than factual content. Furthermore, Lewandowsky et al. (2012) pointed out that even if the information has been corrected, its influence may persist, and this persistent influence effect is particularly prominent in social media. Zhang et al. (2024) found that although doctors post most health videos, approximately 10% of the content still contains errors or misleading information. It often triggers emotional comments and cognitive biases from users, highlighting that short video platforms have potential and

structural concerns in the health information system.

Credibility and Source Effects

In social media, the publisher's identity is an important factor influencing users' trust. Videos released by professional entities, such as doctors and hospitals, usually perform better regarding information accuracy and structural rigor (Elhariry et al., 2024). However, this advantage does not necessarily translate into communication effectiveness. Gupta et al. (2024) pointed out that the number of likes and shares of videos posted by professional publishers is generally lower than that of entertaining content posted by internet celebrities or non-professional users. Especially on the algorithm-driven TikTok and Douyin platforms, users prefer videos with emotional stimulation or entertainment characteristics, and professional videos may be marginalized instead (Stephan et al., 2024). Nyhan and Reifler (2010) also cautioned that users may not necessarily correct their original cognition even if authoritative information is exposed. This also indicates that a more effective interaction mechanism needs to be established between the publisher's identity and the communication methods.

User Engagement Patterns

On short video platforms, user interaction behaviours such as likes, comments, and shares represent the content's popularity and directly affect the platform's recommendation mechanism. Platforms generally adopt the logic of high interaction with high exposure. The more content interaction there is, the higher the exposure rate (Kuo & Chen, 2025). Therefore, even if the content is scientifically reliable, entering the recommendation chain without sufficient user interaction may still be challenging. This mechanism encourages the dissemination of emotional and entertaining content and squeezes out rational expression and authoritative knowledge. Lalani and Laine (2023) pointed out that when users watch short videos, they mostly rely on heuristic decisions, such as cover images, titles, or emotional cues, rather than systematically evaluating the content logically.

Platform Governance

Although platforms have launched governance tools such as rumour-refuting labels and professional certifications to improve the quality of information, the current governance mechanisms mostly rely on post-event reviews and user reports, lacking systematic preventive strategies (Xin et al., 2021). Meanwhile, the platform's profit model still centres on advertising and user activity, resulting in the recommendation system tending towards content with high interactivity and strong dissemination, even if its authenticity is questionable. Some professional publishers have actively corrected misinformation through video splicing, but algorithmic mechanisms and information flow density still limit their influence (Sharevski et al., 2024). Li and Shi (2024) also pointed out that in underdeveloped areas of China, the rate of users' exposure to professional health content is significantly low, and the regional differences in platform content distribution have further widened the information gap.

METHODOLOGY

This study investigates health rumour-refuting videos on Douyin, emphasizing the correction of misinformation. The keyword "健康辟谣" (health rumour-refuting) was selected as it is prevalently employed by authoritative entities (e.g., certified medical professionals, official

health media, governmental health agencies) in Chinese digital communication channels to label misinformation-correcting content (Aduragba et al., 2023). Data were collected on September 6, 2024, utilizing Douyin's built-in sorting algorithm to identify videos sorted by the highest number of Likes, indicative of viewer engagement. A Python-based data extraction method was applied to obtain the top 100 videos from 423 available entries. This threshold was chosen due to diminishing relevance and user engagement beyond this point, reflecting general browsing behaviours documented in prior research (Wang et al., 2021). All analysed videos were in Mandarin Chinese.

The study employed a quantitative content analysis framework to assess health rumour-refuting videos' characteristics and dissemination patterns systematically. A non-probability purposive sampling strategy was employed to select relevant videos based on platform-defined popularity metrics. The analysis included descriptive statistics, Pearson correlation, and multiple linear regression to explore associations between content features (e.g., DISCERN score, GQS score, publisher type) and user engagement indicators (e.g., likes, shares, comments). All statistical procedures were performed using SPSS version 28.0.

Data Extraction and Coding

Metadata was manually extracted from each of the 100 selected Douyin videos and their associated publisher profiles. Variables captured included the main health topic addressed in the video, the date of publication, the publisher's account type classification, and the number of followers at the time of collection. Engagement indicators, including the number of Likes, shares, comments, and saves, were recorded to measure user interaction. The presence or absence of identity verification in the publisher's profile was also noted. Video features were extracted directly from the public Douyin profile of each video and content creator. For each profile, identifiable personal or institutional information was recorded to determine transparency.

Two independent coders with training in health communication were involved in the coding process. Before formal coding, they participated in a structured calibration session using a subset of 10 randomly selected videos to align their interpretation of the DISCERN (Charnock et al., 1999) and GQS (Bernard et al., 2007) criteria. The remaining 90 videos were then randomly divided and independently coded by the two coders. Data analysis and scoring calculations were conducted using Microsoft Excel. Inter-coder reliability was evaluated using Cohen’s kappa, yielding values of 0.81 for DISCERN and 0.77 for GQS, indicating substantial agreement. Discrepancies were resolved through discussion between the coders, and a third researcher with expertise in health communication adjudicated unresolved cases.

Publisher accounts were classified into four categories adapted from prior research on video-based health communication in China: doctors, individuals (non-doctors), official media, and non-official media (Gong et al., 2023). Drawing from established classification frameworks in previous studies that systematically analysed health-related content across diverse media platforms (Liu et al., 2017; Xu et al., 2014). Doctor accounts were verified medical professionals, identified through platform certification or professional credentials in the profile. Official media accounts referred to state-owned or institutional news agencies with verified badges. Non-official media included health content aggregators or semi-professional teams without governmental affiliation. Individual accounts were non-professional users without medical training or media affiliation. The videos are divided into seven categories: health and fitness rumours, disease treatment, sexual and reproductive health, medicine, healthcare policy, diet and nutrition, and general topics. This classification

framework was designed to reflect the audience's diverse health information needs and assess the thematic breadth of health communication content on Douyin.

Research Tool

This study used DISCERN (The DISCERN Instrument for Evaluating Consumer Health Information) (Charnock et al., 1999) and Global Quality Score (GQS) (Bernard et al., 2007) to evaluate the content quality of Douyin health rumour-refuting videos. The DISCERN instrument evaluates the reliability of health information through 16 questions rated on a 5-point Likert scale. This study adopted a modified version of the DISCERN instrument, retaining only the first eight items. First, the complete DISCERN tool includes several items (9–15) assessing the completeness of treatment information, such as discussing risks, benefits, and alternatives. However, this research focused not on the clinical depth of treatment guidance but on the credibility, clarity, and transparency of information presented in short-form videos, dimensions already covered in items 1–8. Second, the short video platforms such as Douyin present inherent limitations in terms of time and content depth. Videos are rarely intended to offer comprehensive treatment options but instead aim to correct misinformation or promote general health awareness. Therefore, applying the full DISCERN scale would create an unrealistic evaluative standard and introduce content instrument misalignment. Third, from a methodological standpoint, streamlining the instrument improved coding efficiency and inter-coder reliability, which is particularly critical when analysing large volumes of brief, user-generated content. This adaptation is consistent with prior research that applied reduced DISCERN frameworks in digital health contexts to prioritize source reliability over treatment completeness (Shan et al., 2022). This approach also helped optimize coding efficiency, given the large number of videos. Each question was scored on a scale from 1 (low) to 5 (high), resulting in a total score range of 8 to 40.

The GQS (Global Quality Score) assessed each video's quality, clarity, and production value. It employs a 5-point Likert scale in which a score of 1 represents poor quality, and 5 represents excellent quality. Applying GQS in short videos emphasizes simplicity, audio-visual design, and perceptual authority. In addition, the brevity of Douyin's videos was evaluated, focusing on how well the information is conveyed under strict time and visual constraints. The instrument is widely used in health informatics research to evaluate the educational value of digital content (Bernard et al., 2007). The GQS and DISCERN tools were combined to provide a holistic evaluation of both the informational quality and presentation standard of health-related videos on Douyin.

Ethical Considerations

This study does not include clinical data, human specimens, or experimental animals. All data utilised in this research was only sourced from publicly available Douyin videos, thus ensuring the protection of personal privacy. Furthermore, this research does not include any direct user engagement and does not need ethical approval or trial registration. All data reported in this study were anonymised, and the actual names of account details were not revealed.

RESULTS

Descriptive Statistical Analysis

Among the 100 most-liked health rumour-refuting videos, the publication timeline shows a steady increase in high-engagement content. Specifically, five videos were published in 2022,

18 in 2023, and the majority, 77 videos, in 2024. This trend indicates a growing public interest in health-related content, likely driven by an increasing demand for reliable health information. A total of 100 health rumour-refuting videos were analysed, encompassing various content types and blogger categories. Figures 1 and 2 present the detailed distribution. Diet and nutrition videos are the most prevalent, making up 26% (26 videos) of the sample. Disease treatment videos rank second, accounting for 23% (23 videos), closely followed by sexual and reproductive health videos at 22% (22 videos). Health and fitness rumour-refuting videos account for 12%, while comprehensive videos represent 11%. Videos focusing on medications and medical policy are less common, comprising 5% and 1% of the sample. Regarding blogger types, doctors dominate as the primary content creators, producing 84% of the videos (84 videos). Official media contributed 6% (6 videos), while personal bloggers and non-official media published 8% (8 videos) and 2% (2 videos), respectively. This distribution is partly a result of the purposive sampling strategy, which selected videos based on platform-defined interaction metrics. However, it also reflects audience preferences within Douyin, where users tend to engage more with doctor-produced health content.

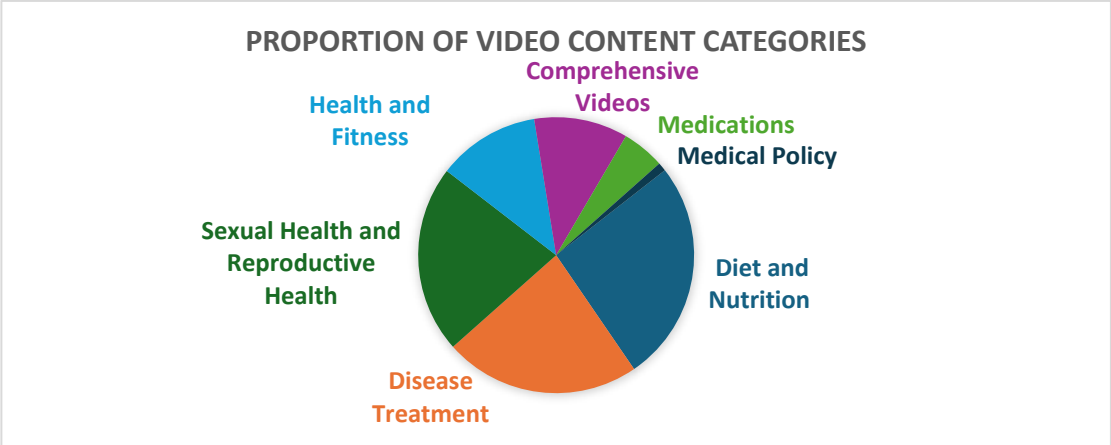

Figure 1: Proportion of video content categories

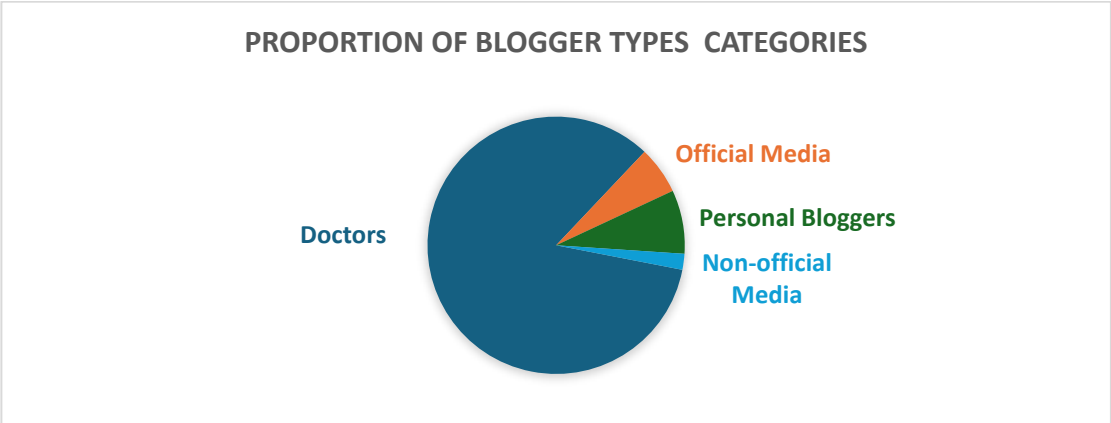

Figure 2: Proportion of blogger types categories

Different Blogger Types on the Information Reliability and Production Quality of Health Rumour-Refuting Videos

Descriptive and regression analyses were conducted to examine how different blogger types affect health rumour-refuting videos' perceived reliability and production quality. Descriptive

analysis revealed that the average DISCERN score across all videos was 26.19 (out of 40), indicating a generally high level of information reliability. Videos posted by doctors averaged 26.02, slightly lower than those from individuals (27.13), official media (27.29), and unofficial media (27.50), though the differences were minor. Regarding video production quality, the overall average GQS score was 3.44, with doctors' videos scoring 3.35, individuals 3.63, official media 4.00, and unofficial media 5.00, suggesting that unofficial and official media produced higher-quality videos in terms of presentation. A detailed summary of the average scores by blogger type is presented in Table 1. Different types of bloggers show significant differences in engagement indicators. Especially for personal blog videos, the number of likes and comments is much higher than that of other groups. It reflects that even in highly interactive samples, the distribution of attention on social media platforms is still highly uneven, which is a relatively common phenomenon in the algorithm-driven content-dissemination environment.

Table 1: Average engagement metrics, DISCERN scores, and GQS scores by blogger

Blogger	Average Likes	Average Saves	Average Shares	Average Comments	Average GQS	Average DISCERN
Doctors	25988.07	3716.95	14499.59	2217.60	3.34	26.02
Official Media	20909.63	4412.50	36291.88	3208.13	3.63	27.13
Personal Bloggers	369979.67	10845.83	19565.17	14734.00	4.00	26.83
Non-official Media	12616.50	1770.50	29922.50	2489.50	5.00	27.50

Two multiple linear regression analyses assessed how different blogger types influence the perceived information reliability and production quality of health rumour-refuting videos. In both models, the blogger type was dummy-coded, with doctors as the reference category. For DISCERN scores, the model was not statistically significant ($F(3, 96) = 0.372$, $p = .773$), and no blogger type differed significantly from doctors, suggesting relatively uniform information reliability across groups. For GQS scores, the model approached significance ($F(3, 96) = 2.373$, $p = .075$), and unofficial media videos demonstrated significantly higher production quality than those posted by doctors ($B = 1.655$, $p = .029$). These findings suggest that while perceived reliability is consistent, production quality may vary by blogger type. However, the small number of videos from specific categories, such as unofficial media, may limit the generalizability of the results. Table 2 presents the results of the regression analyses for both DISCERN and GQS scores.

Table 2: Summary of regression results for DISCERN and GQS scores by blogger type

Blogger Type	B (DISCERN)	SE (DISCERN)	p (DISCERN)	B (GQS)	SE (GQS)	p (GQS)
Doctor (ref)	–	–	–	–	–	–
Individual	1.10	1.367	0.42	0.28	0.39	0.47
Official media	0.81	1.56	0.60	0.66	0.44	0.14
Unofficial media	1.48	2.64	0.58	1.66	0.74	0.03

Multiple Linear Regression Analysis: The Influence of Blogger Type on User Engagement

Multiple linear regression was conducted using dummy-coded blogger types to predict user engagement metrics, including likes, saves, shares, and comments. Doctors served as the reference category in all models. The results showed that official media significantly outperformed other blogger types in generating likes ($\beta = 343{,}992$, $p < 0.001$) and comments ($\beta = 12{,}516.39$, $p < 0.001$). While individual bloggers showed a marginally positive share trend

(β = 21,792.28, p = 0.074), the effect was not statistically significant. No significant effects were observed for unofficial media across engagement metrics. As the baseline group, doctors exhibited moderate engagement levels, receiving an average of 25,988 likes, 4,911 saves, 34,454 shares, and 3,671 comments. These values serve as a baseline for interpreting the relative influence of other blogger types. The regression models explained a small proportion of the variance in engagement outcomes, with adjusted R^2 values ranging from 0.006 (shares) to 0.121 (likes), highlighting the blogger type's limited but interpretable role in shaping engagement. Such low explanatory power is not uncommon in social media research, where user engagement is often driven by factors such as content theme and algorithmic exposure. Detailed results are presented in Table 3.

Table 3: Multiple linear regression results for blogger type predicting user engagement behaviours

Blogger Type	**Likes (β, p)**	**Saves (β, p)**	**Shares (β, p)**	**Comments (β, p)**
Doctor (ref)	–	–	–	–
Individual	-5,078.45, p = 0.95	695.55, p = 0.82	21,792.28, p = 0.07	990.52, p = 0.76
OfficialMedia	343,992, p < 0.001	7,128.88, p = 0.05	5,065.57, p = 0.71	12,516.39, p < 0.001
UnofficialMedia	-13,371.57, p = 0.93	-1,946.45, p = 0.75	15,422.91, p = 0.51	271.89, p = 0.96

DISCUSSION

The Importance and Impact of Authoritative Sources in Health Rumour-Refuting Videos on Social Media

Our findings demonstrate how blogger type shapes both the perceived credibility and user engagement of health rumour-refuting videos on Douyin. Official media and certified doctors both ranked highly in information quality metrics (DISCERN and GQS), affirming their roles as trusted content sources. Official media significantly outperformed other blogger types in engagement metrics such as likes and comments, suggesting stronger public recognition and algorithmic visibility of institutionally backed content. This finding aligns with prior research showing that institutional content generally enjoys higher credibility and benefits from algorithmic amplification mechanisms prioritizing authoritative sources (Strekalova & Krieger, 2017). Authoritative figures such as doctors and official media often possess verified identities and domain expertise, which are heuristic cues for trustworthiness on social media (Meinert, 2020). In information-saturated environments, these cues help users quickly discern reliable sources, increasing the likelihood of passive engagement behaviours such as likes and saves (Wang et al., 2021).

However, a notable finding was observed: while doctors enjoy high credibility, their videos received lower active engagement, such as shares and comments. This gap between perceived authority and audience interaction suggests that trust alone does not guarantee behavioural engagement. One possible explanation is the formal and information-dense presentation style commonly adopted by doctor-generated content, which often features technical language, definitive claims, and minimal narrative framing. This authoritative and formal tone may increase engagement's perceived social or cognitive cost, discouraging viewers from commenting or sharing. Users may feel less inclined to respond when content leaves little room for debate or personal input, particularly when it is produced by experts or institutions (Bell et al., 2025).

In contrast, individual bloggers, often lacking professional credentials, frequently employ narrative styles, conversational tones, and emotionally resonant language that reduce perceived interactional risk and enhance personal relevance (Irfan et al., 2024). Prior studies suggest that emotional tone and personalized messaging serve as peripheral cues in persuasion, particularly in fast-paced digital environments where users often rely on heuristic rather than systematic processing (Rivera et al., 2020; Lamot et al., 2024). Content that fosters emotional resonance and reflects lived experience can facilitate active participation, even without formal authority (Hou, 2023).

These mechanisms may explain why less credible sources sometimes outperform expert sources in online visibility and social media virality. Importantly, the observed credibility–engagement gap highlights a fundamental tension between health information's scientific rigor and digital platforms' stylistic demands. The platform architecture of Douyin and similar short video services privileges content that is entertaining, emotionally salient, and quickly consumable. In such environments, medically accurate but emotionally neutral content may be disadvantaged regarding user visibility and interaction (Jerin et al., 2024). Even though our dataset's doctor- and media-generated videos had higher GQS scores, suggesting superior production quality, their neutral tone and lack of affective framing may have constrained deeper engagement. This phenomenon reinforces the need for healthcare communicators to consider message content, delivery style, and effective framing when designing digital interventions. From the perspective of diffusion of innovations theory (Rogers, 2003), authoritative sources such as doctors and official media act as trusted change agents, but their effectiveness also depends on message compatibility, observability, and communicative style. This finding supports the argument that credibility and engagement operate along different dimensions, both of which must be addressed for effective digital health communication. Integrating emotional appeal with authoritative information may be essential in bridging the gap between trust and behaviour. As Li and Shi (2024) suggest, emotional and personalized communication strategies should not be viewed as alternatives to scientific credibility but as complementary elements that enhance message receptivity and public engagement.

Future studies are encouraged to develop content analysis frameworks or use computational techniques to systematically examine affective tone, stylistic devices, and narrative framing in health videos. Such approaches could clarify the role of emotional expressiveness as a moderator between blogger type and user engagement. As Huang and DiStaso (2020) argue, understanding how affective and stylistic variables interact with credibility cues can lead to more robust communication models and inform the design of more persuasive health messaging strategies. In the evolving health communication, the challenge is not merely to produce credible content, but to do so in ways that resonate, engage, and inspire sharing, particularly on algorithmically curated, attention-driven platforms.

Challenges in the Quality of Health Rumour-Refuting Videos

The quality of video content plays an important role in shaping how users perceive health information and whether they choose to engage with it. Studies have shown that clear, well-organised videos boost audience trust and promote more significant interaction (Kong et al., 2021). However, despite this recognition, many health rumour-refuting videos continue to

suffer from problems such as vague titles, repetitive messaging, and inconsistent presentation, all of which can weaken credibility and reduce communication effectiveness (Zhang & Clough, 2020). Furthermore, this research revealed that although several videos performed in terms of the scientific quality of their content, other health rumour-refuting videos were ineffective in delivering information because of unclear titles or repetitive content. This "clickbait" phenomenon significantly erodes users' confidence in videos and obstructs the spreading of health-related information that dispels rumours. This phenomenon may be due to publishers' need to accommodate the platform's algorithms. Social media platforms often apply click-through rate and watching time as criteria for determining the extent of video promotion. Consequently, some producers resort to ambiguous or exaggerated titles to boost click-through rates, which is frequently opposed to accurate video content. Zhang and Clough (2020) discovered that although attractive titles may initially generate clicks. If the content does not satisfy user expectations, trust will decline considerably, impacting the video's total engagement rate. While catering to platform algorithms may result in a quick increase in reading quantity. This approach, particularly in health communication, has the potential to erode users' trust in information sources and make viewers miss chances to get accurate health information in the long term.

Platform Responsibility: Optimise the Dissemination of Health Rumour-Refuting Information

Social media platforms play a central role in shaping the visibility and reach of health content through their recommendation algorithms. While platforms like Douyin have introduced verification systems to label medical professionals and trusted sources (Tangcharoensathien et al., 2020), our findings highlight persistent structural issues: videos created by certified doctors, despite demonstrating high DISCERN and GQS scores, often receive lower interactive engagement. Conversely, non-professional bloggers sometimes achieve wide exposure and user interaction through emotionally framed but scientifically weak content.

One explanation for this phenomenon lies between authoritative health content and the engagement-based logic of recommendation systems. Scientific videos often lack the emotional resonance or stylistic familiarity that drives algorithmic success. Therefore, even when content is verified or factually accurate, it may remain underexposed in the platform ecosystem (Kite et al., 2016). These observations underscore the structural limitations of social media as a channel for public health communication. Unlike traditional top-down dissemination, social media operates within a participatory and algorithmic environment, in which credibility competes with virality. In such a context, the ability of authoritative sources to effectively reach audiences is shaped less by informational quality and more by the emotional and stylistic properties of their content (Asiri et al., 2024). Most platforms prioritise engagement-based metrics, such as click-through rates, view duration, and interaction frequency, to drive content recommendations. This structure tends to amplify emotionally charged or sensational content over fact-based health information, leading to algorithmic suppression of corrective health messaging (Aduragba et al., 2023). As a result, high-quality yet less emotionally stimulating health rumour-refuting content risks being deprioritised (Kuo & Chen, 2025). This misalignment reflects what Diffusion of Innovations Theory terms a failure in observability and compatibility: credible content may exist, but remains insufficiently visible or aligned with platform norms of virality, reducing its adoption potential. Tang et al. (2023) proposed that platforms prioritise health rumour-refuting videos that professionals have validated. This approach helps limit the spread of incorrect videos while ensuring audiences receive scientifically correct and reliable health information.

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Furthermore, platform-level content review plays a complementary role in ensuring the scientific accuracy of health information. Meyer et al. (2024) underscore the importance of such systems, though existing review mechanisms may still fall short in filtering out misleading videos. Addressing these structural challenges requires platforms not only to refine their recommendation logic but also to enhance verification and review practices.

These findings prove that reducing the burden of health misinformation cannot solely depend on content creators or audiences. Platforms must assume responsibility as structural actors that shape the health information ecosystem. This involves refining algorithmic logic to balance engagement with content credibility better, strengthening verification systems to support user trust, and ensuring that design does not disadvantage professionally vetted health content. Without such structural accountability, even the most credible rumour-refuting videos may fail to achieve the reach and influence needed to promote public health.

LIMITATIONS

While this study offers valuable insights into the dissemination and user interaction of health rumour-refuting videos, several limitations should be noted. First, the data were primarily derived from health rumour-refuting videos on a single platform, Douyin. Consequently, the findings may only partially represent the dynamics of other social media platforms, as differences in recommendation algorithms and user behaviour patterns may influence the results. Future research should include multiple social media platforms to improve the generalizability of these findings. Second, the sample primarily consisted of videos created by healthcare professionals, while the representation of other blogger types, such as personal and media bloggers, was limited. This imbalance restricts the analysis of performance across different blogger categories. To address this, future studies should include a more balanced sample of bloggers to enable a comprehensive evaluation. Expanding the sample size would also strengthen the representativeness of the conclusions. Third, this study did not adjust engagement metrics based on the number of followers or reach. As a result, the higher engagement observed in some blogger types may partly reflect their larger audience size rather than the intrinsic appeal or effectiveness of the content. Future research should consider normalizing user engagement by follower count to provide a more accurate assessment of content performance. These limitations highlight the need for broader studies to deepen our understanding of the factors influencing disseminating health rumour-refuting content on social media. Fourth, although this study explores the potential influence of emotional and personalised communication in the discussion, it did not systematically code or quantify such stylistic features in the video content. The theoretical analysis was based on observed engagement patterns and prior literature, rather than direct content analysis. Future research should incorporate structured content coding of emotional tone, narrative style, or language personalisation to more accurately assess how communication style affects user engagement with health-related videos.

IMPLICATIONS FOR PRACTICE, POLICY, AND RESEARCH

Based on the results of this study, the following suggestions are put forward: The quality of health rumour-refuting information should be improved to ensure that the content is accurate and authoritative. The scope of information dissemination should be expanded to improve coverage. The presentation and dissemination of information should be optimised to meet the needs of different user groups.

Enhancing Credibility through Identity Certification and Content Review

Social media platforms should establish a certification system and provide certification marks for medical professionals to improve the ability to identify reliable health rumour-refuting content more effectively. These logos can verify the identity of official media and certified medical professionals. They become a reference for users to judge the reliability of information sources. This study found that video content with recognised identities tends to receive more interactions due to users' social trust in authoritative sources. Similarly, Tang et al. (2023) found that certification mechanisms effectively reduce the spread of misinformation, especially in the health field. This is consistent with the findings of this study, indicating that certification systems can help improve the credibility of information. However, the certification system is insufficient to verify the accuracy of information. Xue and Taylor (2023) pointed out the need for platform review procedures in conflicts with health misinformation. As a result, social media platforms should optimise the certification system and the assessment and review system to ensure the quality and trustworthiness of health information.

Targeted Information Delivery through Algorithmic Optimisation

To minimize the impact of health misinformation, social media platform develops algorithms and data science teams to target health rumour dissemination models based on user behaviour data, interest preferences, and social network relationships through optimisation algorithms (Xue & Taylor, 2023). This model identifies user groups vulnerable to misinformation and prioritises refuting videos to them. This strategy can effectively refute health rumours and significantly reduce the spread of misinformation. By combining content distribution with the specific needs of users, platforms can further improve the efficiency and effectiveness of information delivery.

Strengthening Cross-Sector Collaboration for Wider and Faster Reach

To expand the reach and authority of health communication, collaboration between social media platforms and trusted institutions such as medical organisations, government agencies, and NGOs is essential (Yang et al., 2022). This cross-institutional collaboration can not only enhance the authority of health information but also quickly respond to the spread of misinformation during public health emergencies, effectively reducing its negative impact on public health. Future research should focus on the key role of user groups in information diffusion, especially on decentralised platforms, and on which user groups significantly impact health information dissemination. Social networks' structural characteristics and dissemination paths play a vital role in information diffusion. Health information dissemination may be concentrated in specific levels or networks on platforms dominated by different social circles. Further research can also explore how these findings can be applied to the entire field of health information dissemination to more effectively promote public health.

CONCLUSION

This study conducted a systematic content analysis of health rumour-refuting videos on Douyin. Focusing on the impact of video content type and blogger type on user engagement. The findings show that authoritative sources, such as official media and doctors, promote user trust and interaction. At the same time, individual bloggers also significantly impact user engagement through emotional expression and personalised content. This shows that health

information dissemination needs to consider both authority and diversity to meet the needs of different users. The findings provide insights into the specific characteristics of health rumour-refuting videos and offer valuable guidance for broader health communication strategies.

This study applies the Diffusion of Innovations framework to a new context to examine how perceived credibility and content style jointly shape engagement behaviours. The results show that informational authority alone may foster passive trust, but stylistic relatability is often necessary to stimulate active interaction. This insight contributes to a deeper understanding of health information adoption in fragmented, emotionally charged digital environments.

This study suggests that platforms need to implement an effective recommendation and review system to prioritise promoting reliable and evidence-based health information. At the same time, the study also pointed out that cooperation with medical institutions, government departments, and other relevant parties is essential to expanding the coverage of health information and improving its credibility. In addition, this study inspires future research and recommends exploring more strategies to help users conveniently obtain reliable health information, thereby more effectively promoting public health.

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