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Quality Assessment of Hypertension and Diabetes-related Health Information on Douyin Platform

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Abstract: ***Background:*** ***Hypertension and diabetes, as two of the most prevalent chronic diseases contributing to the global disease burden, exert a profound influence on patient self-management efficacy, which is heavily dependent on the quality of available treatment information. Increasingly, patients and the general public are turning to digital platforms—particularly short-video applications—as primary sources of health-related guidance. Douyin has emerged as a critical information source for individuals with chronic conditions. However, the quality of its health-related content remains systematically underevaluated, raising concerns about its reliability and clinical utility.*** ***Objective:*** ***This study aims to systematically evaluate the quality of hypertension- and diabetes-related treatment information disseminated on Douyin and to identify key determinants influencing the credibility and accuracy of such audiovisual material.*** ***Methods:*** ***This cross-sectional content analysis collected the top 100 most-viewed videos about hypertension and diabetes on Douyin. Videos were classified by uploader type, presence of references, uploader verification status, and whether they discussed traditional Chinese medicine. Video quality was evaluated using the DISCERN instrument with guideline supplements to assess information quality, accuracy, and completeness. Correlation analysis examined relationships between video length, likes, comments, favorites, shares and quality scores.*** ***Results:*** ***Overall, the quality of hypertension- and diabetes-related videos on Douyin was suboptimal, with mean total DISCERN scores of 35.55 (SD=3.32) and 33.83 (SD=2.53), respectively. Significant differences in DISCERN scores and total scores were observed between videos with and without referenced sources for both conditions (P<0.05). For diabetes content, statistically significant differences were found in completeness and accuracy scores between videos discussing traditional Chinese medicine (TCM) therapies versus those that did not (P=0.01). Hypertension videos showed a significant correlation between video duration and total score (P<0.05). However, no significant correlations were found between total scores and engagement metrics (shares, likes, comments, or favorites) for either condition (all P>0.05).*** ***Conclusions:*** ***Our study yielded two principal findings: First, video duration demonstrated a measurable correlation with content quality, with longer videos exhibiting more comprehensive coverage of disease definitions, treatment modalities, and associated risks, whereas shorter videos frequently suffered from informational fragmentation and omission of critical content. Second, while TCM-themed videos have proliferated rapidly, they consistently displayed quality deficiencies including incomplete information and questionable accuracy - achieving high dissemination volumes despite low reliability. Notably, Douyin's current professional verification system failed to ensure content quality, as verified and non-verified accounts showed no significant differences in information quality, revealing systemic shortcomings in the platform's credential verification processes, ongoing oversight mechanisms, and user guidance protocols.***

Keywords: Hypertension, Diabetes, Video, Cross-sectional study, Quality evaluation.

1. Introduction

Hypertension remains a leading risk factor for cardiovascular diseases, with the global number of affected individuals doubling from 650 million in 1990 to 1.28 billion in 2019 [1]. As a major contributor to the global disease burden, hypertension affects over 1 billion adults worldwide, with its prevalence rising significantly [2]-[3]. In low-income countries, only one-third of individuals are aware of their hypertensive status, and merely 8% achieve adequate blood pressure control [4]. In China, the adult hypertension prevalence stands at 38.1%, with treatment and control rates of 34.6% and 12.0% [5], respectively. Similarly, diabetes has emerged as one of the fastest-growing chronic diseases globally. According to the International Diabetes Federation (IDF) [6], the global number of adults aged 20-79 with diabetes is estimated to be 589 million in 2024, a figure projected to rise to 853 million by 2050, furthermore, diabetes was responsible for an estimated 3.4 million deaths globally in 2024. This condition poses a substantial public health challenge. China bears the highest diabetes burden, with over 118 million cases—accounting for 22% of the global diabetic population [7]. National data reveal an 11.2% prevalence among Chinese adults, yet only 49.0% receive treatment, and a mere 25.8% achieve optimal glycemic control [8]. The notably low treatment and adherence rates may be associated with limited public knowledge about these conditions [9]. Patients with hypertension and diabetes typically have diverse information needs regarding their chronic diseases, including fundamental disease knowledge, treatment efficacy, management of complications, and strategies for blood pressure or glycemic control. However, they often encounter significant challenges in accessing relevant, comprehensible health information [10]. For diagnosed patients, treatment-related information remains a primary concern. Additionally, many express a strong desire to participate more actively in therapeutic decision-making, which could contribute to alleviate disease-related anxiety and uncertainty [11].

The rapid development of the internet over the past three decades has significantly expanded patients' access to medical consultation and health education resources [12]. Studies indicate that individuals with chronic conditions are increasingly relying on social media platforms to obtain disease-related information, including diagnostic and therapeutic guidance [13]. As a health communication and education tool, the internet demonstrates substantial potential

[14]-[15]. It has emerged as both a cost-effective component of chronic disease management [16]-[17] and a vital resource for health behavior change interventions and programs [18]-[19]. Empirical evidence demonstrates that over three-quarters of relevant studies confirm the utilization of social media platforms to facilitate self-care practices, with the majority of these studies reporting positive outcomes associated with such usage [20]. Existing research reveals a substantial increase in the adoption of online health information seeking among adult internet audiences over the past two decades, with prevalence rates escalating from 40% to over 80% [21]-[24]. This phenomenon has become remarkably prevalent, establishing online health information seeking as a normative behavior in contemporary society. Notably, population-based studies indicate that individuals with disabilities, chronic conditions, or poorer health status demonstrate significantly higher propensity for online health information seeking compared to the general population [25]-[30].

Despite its numerous advantages, social media exhibits inherent limitations in health communication. Since its inception, the quality of online health information has remained a persistent concern. While social media provides novel avenues for public health education, its information dissemination process contains fundamental flaws. Within social media-based health communication environments, there exists significant potential for both miscommunication and misinformation. A critical issue involves the frequent distortion and exaggeration of research findings in media articles, which contributes to public confusion regarding scientific reports, propagation of misinformation, and erosion of trust in evidence-based medicine [30]. Furthermore, social media platforms have enabled pseudo-experts and non-specialist influencers to disseminate opinions and misinformation within the healthcare domain [31]. The potential consequences of believing and acting upon such unverified information could be severe, potentially compromising patient safety and public health outcomes. This phenomenon underscores the critical need for systematic quality assessment of health-related content circulating on social media platforms. Rigorous evaluation mechanisms are essential to distinguish evidence-based medical information from misleading or dangerous claims.

One of the most visited social media platforms is TikTok, a short video platform with approximately 2.05 billion audiences in 2024 [32], including 2.05 million active audiences and TikTok has around 1.69 billion monthly active audiences. Due to internet regulations, its services are not available in China [33], in contrast, Douyin (China's Tik Tok) has over 750 million daily active audiences and is one of the most popular applications in China. A report on health science content on Douyin shows that as of March 2023, the number of audiences viewing daily health science content exceeded 200 million [34]. Douyin contains many videos about hypertension and diabetes; however, there is less research on their quality. To address this gap, the current study aims to systematically evaluate the quality of information in videos related to hypertension and diabetes on Douyin.

2. Methods

Using the Chinese keywords "高血压" (hypertension) and "糖尿病" (diabetes) as search terms, we systematically retrieved content from Douyin between October 7 and 12, 2024. Our search captured the top 100 videos recommended by Douyin's ranking algorithm for each condition. We collected and extracted the following metadata for each video: publication date, uploader name, uploader type, uploader verification status, video duration, number of shares, likes, comments, and favorites. All data were recorded in an Excel spreadsheet for subsequent analysis.

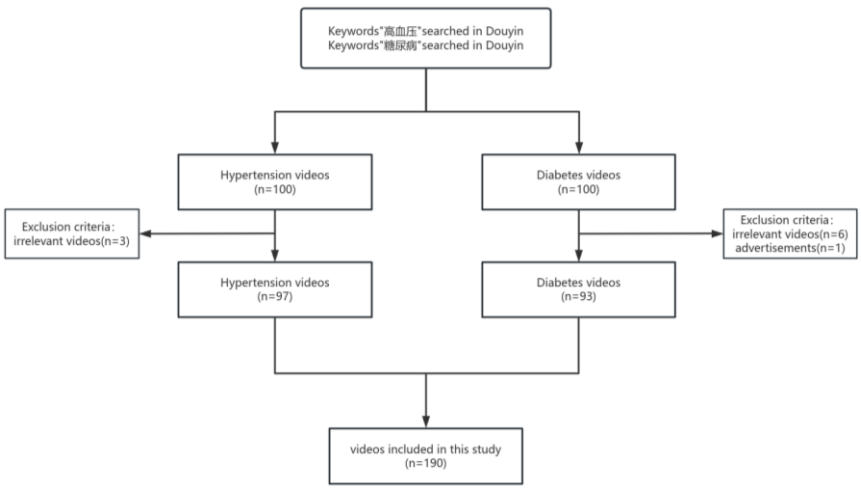

Figure 1: Search strategy for videos on hypertension and diabetes

2.1 Measures

This study systematically evaluated the quality and accuracy of hypertension-related and diabetes-related health education videos on Douyin. We assessed video quality using the DISCERN instrument for reliability and specificity of health information [35], and evaluated content accuracy against the Chinese Guidelines for Hypertension Prevention and Treatment (2024 Revision) [36] and Chinese Guidelines for DiabetesPrevention and Treatment (2024 Revision) [37]. Two independent researchers scored each video, with inter-rater reliability measured by intraclass correlation coefficients (ICC), interpreted as: 0.00-0.20 (poor), 0.21-0.40 (fair), 0.41-0.60 (moderate), 0.61-0.80 (substantial), and >0.80 (almost perfect agreement) [38]. The final analysis integrated both assessment results while examining inter-rater score

differences and correlations.

2.2 Discern Instrument

To ensure scientific rigor in assessing information quality, we employed the validated DISCERN instrument, which enables evaluation of written treatment choice information quality. This tool comprises 16 items scored on a 1-5 scale, yielding total scores ranging from 16-80 [39]. The assessment includes three components: 1) Items 1-8 evaluate information reliability (maximum 40 points); 2) Items 9-15 assess treatment specificity (maximum 35 points); and 3) Item 16 provides an overall quality rating (maximum 5 points). Based on established criteria [40], we classified DISCERN scores as: 63-80 (excellent), 51-62 (robust), 39-50 (fair), 27-38 (poor), and 16-26 (very poor). Two researchers independently scored all videos, with inter-rater reliability measured by intraclass correlation coefficients (ICC).

2.3 Supplementary Assessment of the Guide: Accuracy and Completeness of Audiovisual Material

To complement the subjective nature of the DISCERN instrument [39], we conducted additional evaluations of medical accuracy and completeness with reference to the Chinese Guidelines for Hypertension Prevention and Treatment (2024 Revision) [36] and Chinese Guidelines for DiabetesPrevention and Treatment (2024 Revision) [37]. Accuracy was assessed using a 5-point Likert scale (5=completely correct, 4=more correct than incorrect, 3=equally correct and incorrect, 2=more incorrect than correct, 1=completely incorrect) [41]. Completeness was evaluated based on guideline-derived components: treatment tarobtains, lifestyle interventions (diet/exercise), pharmacological treatments, device-based/technological interventions, risk factor management, and special population considerations [42]. Each component present scored 1 point (range 0-6). Two researchers independently rated all videos, with inter-rater reliability assessed by ICC.

Using the aforementioned methodology, we systematically evaluated the quality of hypertension- and diabetes-related health education videos on Douyin. We established a systematic quality assessment protocol integrating hypertension/diabetes guidelines and the DISCERN instrument through three key steps: (1) calculating mean scores for both DISCERN dimensions (treatment option reliability and specificity); (2) evaluating content accuracy and completeness; and (3) aggregating these four metrics to generate each video's total quality score. The videos were categorized according to four criteria: (1) uploader type (classified as healthcare professionals, general audiences, science communicators, or news/media organizations), (2) presence of references (present or absent), (3) uploader verification status (verified or unverified), and (4) content related to traditional Chinese medicine (TCM-related or non-TCM-related).

We utilized Excel 2021 (Microsoft Corp) for data collection and SPSS software (version 25.0; IBM Corp) for statistical analysis. Data were presented as appropriate frequencies and percentages or means and standard deviations. For assessment scores, we calculated intraclass correlation coefficients (ICC) to determine inter-rater reliability. The Mann-Whitney U test was employed to identify statistically significant differences between two independent groups, while the Kruskal-Wallis test was used for comparisons among more than two groups. Spearman's rank correlation analysis assessed relationships between total quality scores and engagement metrics (likes, shares, comments, favorites) as well as video duration. A threshold of $p<0.05$ was established for statistical significance.

3. Statistical Analysis

3.1 Characteristics of the Videos

Our study analyzed the top 100 ranked videos for each condition on Douyin, yielding 190 eligible videos (97 hypertension-related, 93 diabetes-related). The majority were uploaded by healthcare professionals (hypertension: 87/97, 89.7%; diabetes: 89/93, 95.7%), followed by science communicators (hypertension: 4/97, 4.1%; diabetes: 2/93, 2.2%), general audiences (hypertension: 3/97, 3.1%; diabetes: 1/93, 1.1%), and news/media organizations (hypertension: 3/97, 3.1%; diabetes: 1/93, 1.1%). References were provided in 23.7% (23/97) of hypertension videos and 9.7% (9/93) of diabetes videos. Nearly all uploaders were verified (hypertension: 96/97, 99.0%; diabetes: 92/93, 98.9%). Traditional Chinese medicine content comprised 3.09% (3/97) of hypertension videos and 40.86% (38/93) of diabetes videos.

Regarding user engagement metrics, the median number of shares was 23,000 for hypertension videos (range: 198-187,000) and 10,000 for diabetes videos (range: 49-117,000). For likes, the median counts were 62,000 (range: 796-423,000) and 23,000 (range: 353-290,000), respectively. Comment counts showed medians of 1,536 (range: 68-15,000) for hypertension content versus 498 (range: 8-5,897) for diabetes content. The median number of favorites was 18,000 (range: 230-345,000) for hypertension videos compared to 12,000 (range: 105-232,000) for diabetes videos. For video duration, hypertension-related content had a median length of 119 seconds (range: 23-301), while diabetes-related videos averaged 50 seconds (range: 20-335).

Table 1: Classification of videos.

Characteristic	*Value of Hypertension*	*Value of Diabetes*
Uploading source		
Health professionals	87(89.69)	89(95.70)
General users	3(3.09)	1(1.08)
Science communicators	4(4.12)	2(2.15)
News or media organizations	3(3.09)	1(1.07)
Reference source		
Yes	23(23.71)	9(9.68)
No	74(76.29)	84(90.32)
Uploader authentication		
Yes	96(98.97)	92(98.92)
No	1(1.03)	1(1.08)
Related to TCM		
Yes	3(3.09)	38(40.86)
No	94(96.91)	55(59.14)
Number of shares	23000(198-187000)	10000(49-117000)
Number of likes	62000(796-423000)	23000(353-290000)
Number of comments	1536(68-15000)	498(8-5987)
Number of items collected	18000(230-345000)	12000(105-232000)
Video length	119(23-301)	50(20-335)

3.2 Discern Scores

The DISCERN-based quality assessment revealed generally low-quality scores for both hypertension- and diabetes-related videos. No videos achieved an "excellent" rating. Among the 190 videos analyzed, 15 were rated as "very poor" and 174 as "poor", with only 1 video rated as "fair". Specifically, for hypertension videos, 7.2% (7/97) were "very poor", 91.8% (89/97) "poor", and 1.0% (1/97) "fair". For diabetes videos, 8.6% (8/93) were "very poor" and 91.4% (85/93) "poor". The mean DISCERN scores were 30.74 (SD=3.12; median=31.00) for hypertension videos and 29.54 (SD=2.36; median=29.50) for diabetes videos. Inter-rater reliability (ICC) ranged from 0.56-0.94 for hypertension videos and 0.51-0.97 for diabetes videos, indicating acceptable consistency. Overall, while both conditions' videos were predominantly rated as "poor", hypertension videos showed slightly higher quality scores than diabetes videos.

Comparative analysis of DISCERN scores demonstrated higher performance in Part 1 (items 1-8, information reliability) than Part 2 (items 9-15, treatment specificity) for both conditions. Hypertension videos achieved mean scores of 15.62 (SD=1.88) for reliability and 12.74 (SD=2.18) for specificity. Corresponding scores for diabetes videos were 15.75 (SD=1.80) and 11.60 (SD=1.47), respectively.

Analysis of individual DISCERN items revealed distinct scoring patterns. For hypertension videos, the highest-scoring Part 1 item was "Is it balanced and unbiased?" (mean=2.95, SD=0.64), while the lowest was "Does it refer to areas of uncertainty?" (mean=1.07, SD=0.24). Diabetes videos showed similar results, with the highest Part 1 score for "Does it achieve its aims?" (mean=2.93, SD=0.51) and the lowest again for uncertainty coverage (mean=1.06, SD=0.22). In Part 2, hypertension videos scored highest on "Does it describe what would happen if no treatment is used?" (mean=2.09, SD=0.82) and lowest on treatment risk description (mean=1.48, SD=0.59). Diabetes videos performed best on shared decision-making support (mean=1.91, SD=0.62) and worst on treatment risk description (mean=1.41, SD=0.51).

3.3 Guidelines: Accuracy and Completeness of the videos

Regarding content quality assessment, both conditions demonstrated higher accuracy scores than completeness scores, with inter-rater reliability (ICC) ranging from 0.81 to 0.92, indicating acceptable consistency. For accuracy evaluation, mean scores were 3.32 (SD=0.64) for hypertension videos and 3.24 (SD=0.61) for diabetes videos. Completeness scores were significantly lower, averaging 1.48 (SD=0.78) for hypertension content and 1.05 (SD=0.51) for diabetes content. Notably, no video achieved the maximum completeness score of 6 points.

Table 2: DISCERN scores for Douyin videos about Hypertension.

DISCERN Items	*Mean Score (SD)*	*Median*	*Intraclass Correlation Coefficient (ICC)*
Part 1: Credibility of information			
Q1: Are the aims clear?	2.58(0.56)	2.50	0.81
Q2: Does it achieve its aims?	2.68(0.52)	3.00	0.69
Q3: Is it relevant to patient?	2.68(0.69)	3.00	0.82
Q4: Is it clear what sources of information were used to compile?	1.32(0.66)	1.00	0.90
Q5: Is it clear when the information used or reported was produced?	1.12(0.29)	1.00	0.56
Q6: Is it balanced and unbiased?	2.95(0.64)	3.00	0.81
Q7: Does it provide details of additional sources of support and information?	1.21(0.48)	1.00	0.65
Q8: Does it refer to areas of uncertainty?	1.07(0.24)	1.00	0.70
1-8 score	15.62(1.88)	15.00	-
Part2: Concreteness of treatment information			
Q9: Does it describe how each treatment works?	1.68(0.56)	2.00	0.81
Q10: Does it describe the benefits of each treatment?	2.03(0.57)	2.00	0.84
Q11: Does it describe the risks of each treatment?	1.48(0.59)	1.00	0.87
Q12: Does it describe what would happen if no treatment is used?	2.09(0.82)	2.00	0.94
Q13: Does it describe how the treatment choices affect overall quality of life?	1.94(0.72)	2.00	0.92
Q14: Is it clear that there may be more than one possible treatment choice?	1.75(0.50)	2.00	0.88
Q15: Does it provide support for shared decision-making?	1.78(0.49)	2.00	0.83
9-15 score	12.74(2.18)	13.00	-
Part3: Overall subject quality			
Q16: Based on the answers to all of the above questions, rate the overall quality of it as a source of information about treatment choices.	2.38(0.48)	2.00	0.69
Sum Score of discern	30.74(3.12)	31.00	0.92
Completeness scores	1.48(0.78)	1.00	0.86
Accuracy scores	3.32(0.64)	3.00	0.92
Combined Completeness and Accuracy Scores	4.81(0.94)	5.00	0.91
Total scores	35.55(3.32)	36.00	0.93

3.4 Overall Quality

The evaluation results demonstrated consistently inferior scores across all assessment metrics. First, the mean DISCERN instrument scores were 30.74 (SD=3.12) for hypertension videos and 29.54 (SD=2.36) for diabetes videos, with hypertension content showing marginally better performance. Second, the combined completeness and accuracy scores were 4.81 (SD=0.94) for hypertension versus 4.29 (SD=0.85) for diabetes. Third, the overall quality assessment yielded mean scores of 35.55 (SD=3.32) for hypertension-related content compared to 33.83 (SD=2.53) for diabetes-related content, maintaining the pattern of slightly superior quality in hypertension videos.

Table 3: DISCERN scores for Douyin videos about diabetes.

DISCERN Items	*Mean Score (SD)*	*Median*	*Intraclass Correlation Coefficient (ICC)*
Part 1: Credibility of information			
Q1: Are the aims clear?	2.77(0.63)	3.00	0.80
Q2: Does it achieve its aims?	2.93(0.51)	3.00	0.74
Q3: Is it relevant to patient?	2.90(0.61)	3.00	0.81
Q4: Is it clear what sources of information were used to compile?	1.11(0.36)	1.00	0.85
Q5: Is it clear when the information used or reported was produced?	1.09(0.33)	1.00	0.71
Q6: Is it balanced and unbiased?	2.82(0.69)	3.00	0.85
Q7: Does it provide details of additional sources of support and information?	1.07(0.27)	1.00	0.69

Q8: Does it refer to areas of uncertainty?	1.06(0.22)	1.00	0.65
1-8 scores	15.75(1.80)	15.50	
Part2: Concreteness of treatment information			
Q9: Does it describe how each treatment works?	1.49(0.51)	1.50	0.81
Q10: Does it describe the benefits of each treatment?	1.60(0.55)	2.00	0.88
Q11: Does it describe the risks of each treatment?	1.41(0.51)	1.00	0.80
Q12: Does it describe what would happen if no treatment is used?	1.71(0.52)	2.00	0.85
Q13: Does it describe how the treatment choices affect overall quality of life?	1.73(0.55)	2.00	0.97
Q14: Is it clear that there may be more than one possible treatment choice?	1.74(0.50)	2.00	0.86
Q15: Does it provide support for shared decision-making?	1.91(0.62)	2.00	0.92
9-15 scores	11.60(1.47)	11.50	
Part3: Overall subject quality			
Q16: Based on the answers to all of the above questions, rate the overall quality of it as a source of information about treatment choices.	2.19(0.44)	2.00	0.51
Sum Score of discern	29.54(2.36)	29.50	0.90
Completeness scores	1.05(0.51)	1.00	0.83
Accuracy scores	3.24(0.61)	3.00	0.81
Combined Completeness and Accuracy Scores	4.29(0.85)	4.00	0.84
Total scores	33.83(2.53)	33.50	0.89

3.5 Hypertension: Comparison of Uploader Type, Reference Literature, Verification Status of Uploader and Related to TCM

No significant differences were found among uploader types for DISCERN scores (P=0.63), combined completeness and accuracy scores(P=0.64), or total scores (P=0.43). Videos with references showed significantly higher DISCERN (P<0.001) and total scores (P=0.001) than those without references. Neither uploader verification status nor TCM content showed significant associations with any quality metrics.

3.6 Diabetes: Comparison of Uploader Type, Reference Literature, Verification Status of Uploader and Related to TCM

The comparative analysis yielded four key findings: First, no statistically significant differences were observed among the four uploader types in DISCERN scores (P=0.16), combined completeness and accuracy scores (P=0.36), or total quality scores (P=0.12). Second, videos providing references demonstrated significantly higher quality than non-referenced content in both DISCERN scores (P=0.002) and total scores (P=0.002), with referenced videos showing superior performance across all three metrics. Third, uploader verification status showed nosignificant associations with any quality measures. Finally, TCM-related content showed a statistically significant difference in completeness-accuracy scores (P=0.01) compared to non-TCM content.

Table 4: Characteristics of videos related to hypertension.

Characteristic	*Score,mean(SD)*			*P value*		
	DISCERN scores	Combined Completeness and Accuracy Scores	Total scores	P (DISCERN scores)	P (Combined Completeness and Accuracy Scores)	P (Total scores)
Uploading source				0.63	0.64	0.43
Health professionals(N=87)	30.75(3.20)	4.80(0.88)	35.56(3.38)			
General users(N=3)	29.33(2.93)	4.83(1.04)	34.17(3.62)			
Science communicators(N=4)	31.88(2.39)	5.25(1.04)	37.13(3.15)			
News or media organizations(N=3)	30.17(1.53)	4.33(2.31)	34.50(1.00)			
Reference source				0.000	0.49	0.001
Yes(N=23)	32.85(3.51)	4.70(0.82)	37.54(3.43)			
No(N=74)	30.08(2.69)	4.84(0.98)	34.93(3.05)			
Uploader authentication				0.12	0.39	0.12
Yes(N=96)	30.79(3.10)	4.82(0.94)	35.60(3.29)			
No(N=1)	25(0)	4(0)	29(0)			
Related to Traditional Chinese Medicine				0.49	0.18	0.24
Yes(N=3)	29.83(1.76)	4.00(1.00)	33.83(0.76)			
No(N=94)	30.77(3.15)	4.84(0.93)	35.60(3.35)			

Table 5: Characteristics of diabetes-related videos.

Characteristic	*Scores,mean(SD)*			*P value*		
	DISCERN scores	Combined Completeness and Accuracy Scores	Total scores	P (DISCERN scores)	P (Combined Completeness and Accuracy Scores)	P (Total scores)
Uploading source				0.16	0.36	0.12
Health professionals(N=89)	29.54(2.35)	4.28(0.87)	33.83(2.50)			
General users(N=1)	32(0)	5(0)	37(0)			
Science communicators (N=2)	27.00(2.12)	4.00(0.00)	31.00(2.12)			
News or media organizations(N=1)	31(0)	5(0)	36(0)			
Reference source				0.002	0.55	0.002
Yes(N=9)	32.17(2.83)	4.39(0.78)	36.56(2.73)			
No(N=84)	29.26(2.14)	4.28(0.87)	33.54(2.34)			
Uploader authentication				0.19	0.34	0.17
Yes(N=92)	29.51(2.36)	4.28(0.86)	33.79(2.51)			
No(N=1)	32(0)	5(0)	37(0)			
Related to Traditional Chinese Medicine				0.14	0.01	0.73
Yes(N=38)	29.99(2.26)	4.03(0.73)	34.02(2.36)			
No(N=55)	29.15(2.41)	4.51(0.90)	33.66(2.68)			

3.7 Hypertension: Correlation Between Total Score and Video Length, Number of Shares, Number of Likes, Number of Comments and Number of Favorites

The analysis revealed a statistically significant correlation between video duration and total quality scores (P<0.05). However, no significant correlations were observed between total scores and engagement metrics, including shares (P>0.05), likes (P>0.05), comments (P>0.05), and favorites (P>0.05). These results indicate that higher-quality audiovisual material does not necessarily correspond to greater viewer engagement.

Table 6: The correlation between quality evaluation and the number of likes and comments.

	Video length	*Number of shares*	*Number of likes*	*Number of comments*	*Number of favorites*	*The average of the total score*
Video length	1.000					
Number of shares	.034	1.000				
Number of likes	.155	.862**	1.000			
Number of comments	.275**	.744**	.847**	1.000		
Number of favorites	.117	.837**	.778**	.633**	1.000	
The average of the total score	.223*	.002	.034	-.016	.044	1.000

**. At the 0.01 level (double tail), the correlation was significant.
*. At the 0.05 level (double tail), the correlation was significant.

3.8 Diabetes: Correlation Between Total Score and Video Length, Number of Shares, Number of Likes, Number of Comments and Number of Favorites

A significant correlation was observed between video duration and favorite counts (P<0.05). No significant correlations were found between total quality scores and engagement metrics, including shares (P>0.05), likes (P>0.05), comments (P>0.05), and favorites (P>0.05). These findings are consistent with the results observed for hypertension-related audiovisual material.

Table 7: The correlation between quality evaluation and the number of likes and comments.

	Video length	*Number of shares*	*Number of likes*	*Number of comments*	*Number of favorites*	*The average of the total score*
Video length	1.000					
Number of shares	-.155	1.000				
Number of likes	-.023	.917**	1.000			
Number of comments	.049	.874**	.899**	1.000		
Number of favorites	-.241*	.914**	.901**	.761**	1.000	
The average of the total score	-.050	.126	.105	.077	.169	1.000

*. At the 0.05 level (double tail), the correlation was significant.
**. At the 0.01 level (double tail), the correlation was significant

4. Discussion

4.1 Video Quality Scores are Low, High Quality Videos are Rare, and TCM Related Therapies are on the Rise

A study shows that 72% of the public use at least one social media platform [43], highlighting its significant role in daily life. As Douyin becomes increasingly popular, an increasing number of healthcare professionals are leveraging this platform to share their expertise, making iteasier for patients to access medical information. Health education content on the Douyin platform comes in various forms, covering areas such as disease prevention, health management, and nutritional advice. Its short video format has the advantage of rapid dissemination and broad audience reach, quickly attracting user attention. However, due to low barriers to content creation and inadequate review mechanisms, a large amount of low-quality or even misleading information is spread. While Douyin serves as an critical source of health information, the quality of health information within it is relatively low.

This paper's discern score for hypertension is 30.74, which is similar to a study showing an discern score of 31.22 (SD 8.46) for hypertension [42]; the discern score for diabetes is 29.54 (2.36), and one study reported a range of 40.00 (SD 7.11) -50.64 (SD 4.61) for diabetes [44]. The score in the present investigation falls below this range, possibly due to differences in sample selection and subjective variations in measurement methods. During the research process, it was revealed that 40.86% (38/93) of videos related to diabetes introduced traditional Chinese medicine treatments. The latest guidelines for hypertension and diabetes also include content on TCM treatmen [36]-[37]. Videos related to TCM treatments do not differ significantly from Western medical treatments in terms of discern scores, but they are less comprehensive and accurate. Most videos about TCM treatments only introduce the usage and dosage of certain herbs without mentioning the risks associated with the therapy. In recent years, short videos on TCM have developed rapidly, but there are issues such as inconsistent content quality and inaccurate information. To ensure the scientific dissemination of TCM knowledge, a review mechanism needs to be established, with clear standards and procedures to strictly control the content of TCM theories, diagnostic methods, and drug usage, preventing misleading audiences. Communicators should maintain a professional spirit, ensuring that the content is complete and accurate, and when introducing treatment methods, they should specify indications, contraindications, and risks, avoiding exaggeration or taking things out of context.

4.2 The Patient Needs do Not Match the Audiovisual Material, and the Content is One-sided

The completeness scores averaged 1.48 (SD=0.78) for hypertension videos and 1.05 (SD=0.51) for diabetes videos, indicating most content addressed only isolated aspects of these conditions. This is problematic as chronic diseases require comprehensive management approaches [45]. The observed content fragmentation often emphasized single factors while neglecting integrated care principles, potentially leading to suboptimal self-management practices. For instance, while effective diabetes management requires coordinated medication, diet, exercise, and glucose monitoring, most videos focused narrowly on individual components. This oversimplification of complex medical information appears designed to accommodate limited user attention spans rather than provide systematic guidance.

Some videos emphasize “eating certain foods can lower blood pressure” without mentioning other key factors such as exercise and blood pressure monitoring. Patients may focus more on quick symptom relief methods while neglecting the necessity of long-term management. The immediacy of short videos exacerbates this tendency. Platform reviews often concentrate on information accuracy but lack assessment of content completeness and systematicness. A video that only mentions “exercise for lowering blood sugar” without explaining the intensity and precautions still passes review. Currently, there is a lack of standardized content frameworks for chronic disease management in medical short videos, leaving creators without guidelines. Some individuals lack medical knowledge, and low-quality, simplistic, and one-sided medical videos can easily cause user anxiety, leading to over-medicalization and increased distrust between doctors and patients. Therefore, it is necessary to establish an access mechanism for medical short videos, clearly defining the qualifications required for institutions and individuals. At the same time, operational supervision should be strengthened, and a responsibility traceability system should be improved to ensure content safety and compliance. Platforms need to enhance the professional capabilities of their reviewers to accurately identify non-compliant content and collaborate with authoritative medical institutions to produce high-quality short videos. Industry associations should develop production standards to guide practitioners in producing scientifically reliable content.

Analysis of DISCERN scores identified two consistently low-scoring items across both conditions: “Does it refer to areas of uncertainty?” and “Does it describe the risks of each treatment?” This indicates content creators frequently emphasize treatment certainty while omitting inherent clinical uncertainties, and highlight therapeutic benefits while minimizing associated risks. Potential reasons include creators’ concerns about causing patient anxiety through comprehensive risk disclosure, coupled with inadequate attention to patients’ rights to informed decision-making. Such insufficient risk communication compromises health education completeness and may lead to unrealistic treatment expectations. We recommend establishing standardized risk disclosure protocols that employ visual aids and plain language to present balanced efficacy-risk information, while providing guidance on managing clinical uncertainties, thereby enhancing both scientific validity and practical value of health education materials.

4.3 Whether or Not the Reference Literature Affects the Quality of Audiovisual Material

The study revealed that videos with references demonstrated significantly higher DISCERN and total scores compared to non-referenced content for both conditions. Appropriate citation of references enhances video authority, credibility, and precision by providing verifiable sources and contextual evidence [46]. This practice not only increases immediate perceived trustworthiness but also improves long-term educational value. We recommend content creators systematically incorporate references from authoritative sources to enhance content quality and dissemination impact.

4.4 The Type of Uploader Does Not Affect the Quality of the Video, and Whether It is Authenticated Does Not Affect the Quality of the Video Information

The study found no significant association between uploader types and video quality, potentially because both hypertension and diabetes are common chronic conditions with well-established clinical pathways [47]. The Chinese Guidelines for Hypertension Prevention and Treatment [36] and Diabetes Prevention and Treatment [37] have developed highly standardized knowledge frameworks. Consequently, both healthcare professionals and general audiences can ensure basic information quality by citing authoritative guidelines and using standardized terminology, while non-professional creators may achieve professional-level content quality by emulating the style of medical professionals or authoritative media sources.

Douyin has a professional field verification mechanism, providing user identity/qualification verification services for individuals, institutions, and corporate entities. After the account holder's review is approved, they can obtain the corresponding identity, which is marked as authoritative in search results and providen priority display. Among the 190 samples studied, only 1.05% (2/190) of accounts were not verified, but there was no significant difference in audiovisual material quality between verified and unverified accounts. This verification is essentially an identity identification service rather than a content quality audit mechanism. The verification criteria are primarily based on credentials (such as medical practice certificates, business licenses), and do not directly assess the scientific accuracy or precision of audiovisual material. Currently, health-related short videos often suffer from severe homogenization and insufficient practicality. Excessive competition leads content creators to focus on form over substance, neglecting core content quality improvements, resulting in audiovisual material that is disconnected from audiences’ actual health needs. Some highly shared videos also exhibit issues of fragmentation and partiality.

4.5 The Number of Likes Does Not Mean High-caliber Audiovisual Material

Correlation analysis revealed no significant associations between total quality scores and engagement metrics (likes, comments, shares, or favorites; all $P>0.05$), consistent with existing literature [42], indicating that popularity does not necessarily reflect content quality [48]. This discrepancy may stem from viewers engaging with content based on entertainment value or topicality rather than scientific merit. Notably, video duration showed condition-specific patterns: a weak positive correlation with total scores for hypertension content ($P<0.05$), suggesting longer videos may allow more comprehensive information, while diabetes videos exhibited a weak negative correlation between duration and favorites ($P<0.05$), potentially reflecting the platform’s preference for concise content. These findings demonstrate that video quality depends on multiple factors beyond mere dissemination metrics. Content creators should therefore balance scientific rigor with practical utility while adapting to audiences’ information consumption patterns.

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