Quality and Dissemination of Uterine Fibroid Health Information on TikTok and Bilibili: A Cross-Sectional Study

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Submitted to: JMIR Formative Research
on: March 28, 2025

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Abstract

Background: The rise of short-video platforms, such as TikTok (Douyin in China) and Bilibili, has significantly influenced how health information is disseminated to the public. However, the quality, reliability, and effectiveness of health-related content on these platforms, particularly regarding uterine fibroids, remain underexplored. Uterine fibroids are a common medical condition that affects a substantial proportion of women worldwide. While these platforms have become vital sources of health education, misinformation and incomplete content may undermine their efficacy.

Objective: This study aims to address these gaps by evaluating the quality and dissemination effectiveness of uterine fibroid-related health information on TikTok and Bilibili.

Methods: A total of 200 uterine fibroid-related videos (100 from TikTok and 100 from Bilibili) were selected through a keyword search. The videos were evaluated by two trained gynecological experts using the Global Quality Score (GQS) and a modified version of the DISCERN tool (mDISCERN). Additionally, the Patient Education Materials Assessment Tool for Audio/Visual Materials (PEMAT-A/V) was employed to assess the understandability and actionability of the videos. Statistical analyses, including the Mann-Whitney U test, Spearman rank correlation, and stepwise regression analysis, were used to assess differences between platforms and identify predictors of video quality.

Results: The results indicated that TikTok outperformed Bilibili in terms of user engagement metrics such as likes, comments, shares, and followers (all $P < .001$). However, Bilibili videos were generally longer than those on TikTok ($P < .001$). The overall quality and reliability of the videos on both platforms were suboptimal, with median GQS scores of 3 (range: 1-5) for TikTok and Bilibili. The median modified DISCERN scores were also low: 2 (range: 1-4) for TikTok and 2 (range: 1-3) for Bilibili, with no significant differences between the two platforms ($P = 0.62$ for GQS, $P = 0.18$ for mDISCERN). Both platforms scored similarly on understandability (median PEMAT-U = 77%) and actionability (median PEMAT-A = 67%). Videos uploaded by medical professionals on TikTok had significantly higher quality scores compared to those uploaded by non-professionals. A moderate positive correlation was observed between the GQS and mDISCERN scores ($r = 0.41$, $P < .01$), indicating an interrelationship between quality and reliability. Stepwise regression analysis identified "completeness score," "source," and "PEMAT scores" as significant predictors of video quality.

Conclusions: This study highlights the generally low quality of uterine fibroid-related health information on short-video platforms, although TikTok showed better performance in terms of engagement and quality. The involvement of medical professionals was found to enhance video quality. These findings underscore the need for improved oversight of health content on social media platforms and greater involvement of healthcare professionals to ensure the dissemination of accurate and reliable health information.

(JMIR Preprints 28/03/2025:75120)

DOI: https://doi.org/10.2196/preprints.75120

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Keywords: uterine fibroids; videos quality; TikTok; Bilibili；Global Quality Score; GQS; modified DISCERN;mDISCERN;PEMAT- A/V; Spearman correlation analysis;Stepwise Regression Analysis.

1. **Introduction**

Uterine fibroids are the most prevalent benign tumors of the female reproductive system, affecting approximately 70% of women of reproductive age worldwide, particularly women of color, with an increasing incidence rate[1].Approximately 30% of uterine fibroids manifest clinical symptoms, predominantly including abnormal uterine bleeding, compression symptoms affecting surrounding organs and tissues (such as constipation and urinary frequency), pelvic pain, and infertility[2].Furthermore, uterine fibroids exert a significant impact on women's reproductive health, influencing fertility potential and pregnancy outcomes[3].Primary risk factors for the condition include age, race, endogenous and exogenous hormonal factors, obesity, uterine infections, and lifestyle factors (including diet, caffeine and alcohol consumption, physical activity, stress, and smoking)[4].Ultrasound is the preferred imaging modality, supplemented by MRI when necessary[5].Principal treatment modalities include pharmacological therapy, surgical intervention, and interventional procedures; surgical options comprise hysterectomy, myomectomy, uterine artery embolization, and focused ultrasound surgery[5].Individualized and long-term management is paramount.

With the burgeoning ubiquity of the internet and the expanding reach of digital information, the internet has become a prevalent public resource for acquiring health knowledge and investigating personal health conditions[6].As early as 2005, research indicated that the internet constituted one of the primary sources for adolescents seeking health information[7].With advancements in technology, short videos centered on patients' diseases have been used in medical education, garnering positive evaluations[8].Online short videos, as an emerging form of video media, have achieved substantial dissemination reach[9].The public and healthcare professionals can engage in dialogue on health issues via social media, potentially enhancing health outcomes[10].However, misinformation and disinformation on social media amplify the risks inherent in digital health communication, posing a challenge to the efficacy of public health measures[11].

Short-video platforms such as TikTok, Kwai, and Bilibili have emerged as vital conduits for the public to access health information.Douyin, launched in 2016 by the Chinese company ByteDance, is a short video social platform, with its international version known as TikTok[9].As of 2023, Douyin and TikTok collectively boast over 1.5 billion monthly active users worldwide, establishing them as one of the most popular short video applications globally[12]. Bilibili, a leading youth culture community and comprehensive video platform in China, was founded in 2009. Initially centered on ACG (animation, comics, and games) content, it has since evolved into a cultural ecosystem encompassing a diverse array of domains.Certain researchers have investigated the quality and impact of videos pertaining to various diseases on short video platforms such as TikTok and Bilibili.For instance, adolescent vision health[13]、lung cancer[14]、Liver Cancer[15]、brain tumor[16]、breast cancer[17]、heart failure[18]、thyroid nodules[19]、gallstone disease[20]、Chronic Obstructive Pulmonary Disease[21],etc.Topics such as the female reproductive system,oral contraceptives[22]、contraception-related videos[23]and cervical cancer[24]have also been subjects of related studies, however, research specifically addressing videos on uterine fibroids remains scarce. Misinformation concerning reproductive health may undermine health outcomes, erode trust in medical systems, and precipitate misguided policy restrictions[25].

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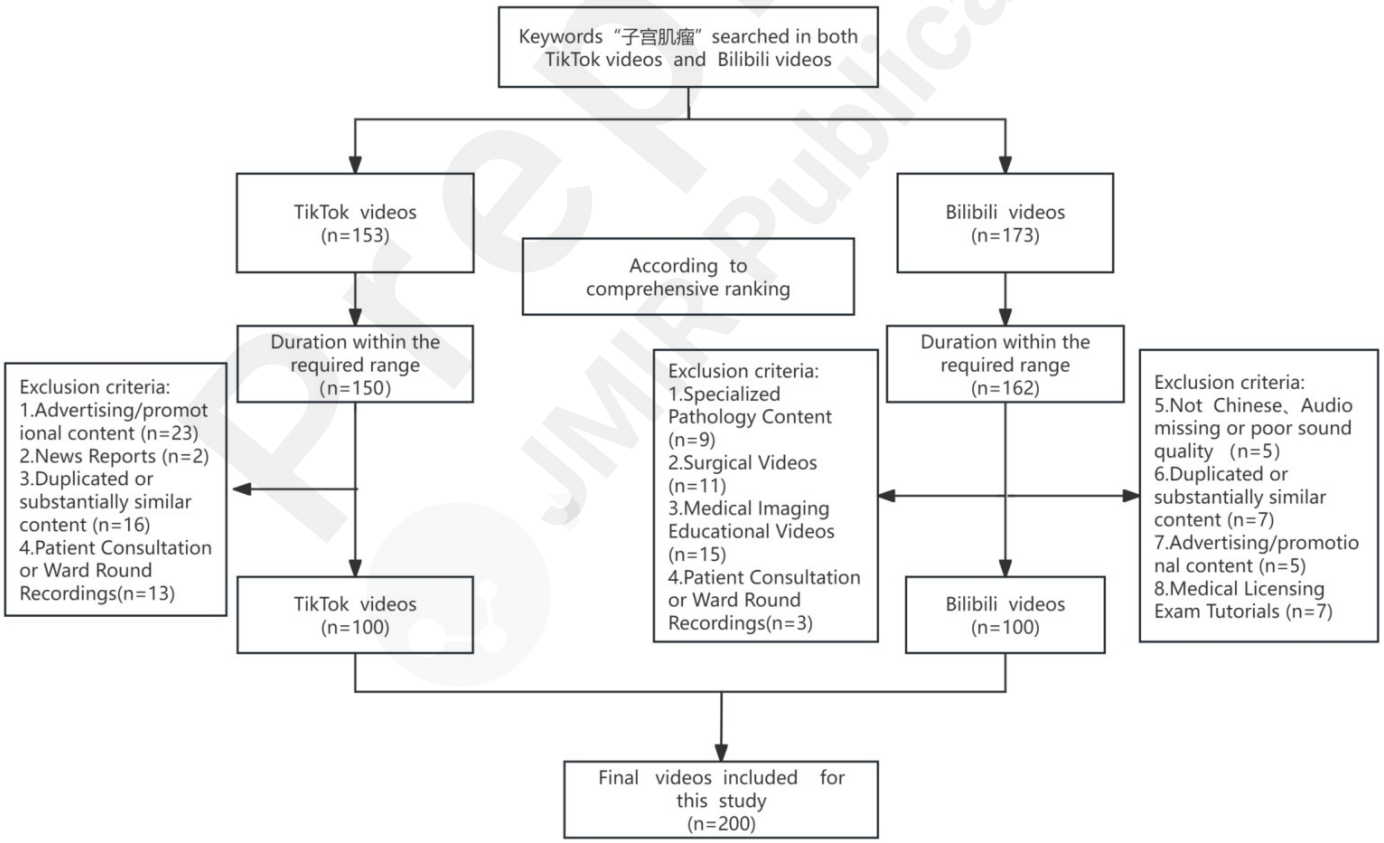
This study aims to assess the quality, reliability, and dissemination efficacy of health information on uterine fibroids across TikTok and Bilibili platforms. By analyzing differences between platforms and publisher types, it provides a scientific foundation for improving the dissemination of uterine fibroids-related health information.

2. Materials and Methods

2.1 Data Collection and Screening

In this cross-sectional study, new accounts were registered on the TikTok and Bilibili platforms between March 3 and March 7, 2025. Video searches were conducted using the Chinese keyword "□□□" (uterine fibroids), and the top 100 comprehensively ranked relevant videos from each platform were selected (Figure 1). **Inclusion criteria** included videos addressing uterine fibroids, presented in Chinese, with durations ranging from 20 seconds to 15 minutes. **Exclusion criteria** encompassed videos unrelated to uterine fibroids, duplicates or substantially similar videos, promotional advertisements, news reports, surgical or pathology-specific videos, outpatient consultation or ward round recordings, medical exam instructional videos, non-Chinese language videos, videos with missing audio or poor sound quality, and those uploaded by users with unverified identities. Ultimately, 200 videos were included (100 from TikTok and 100 from Bilibili). The analysis was restricted to the top 100 videos per platform, as prior studies have demonstrated that videos beyond this threshold exert no significant influence on the analysis[15,26].

Figure 1. Flowchart for Searching Short Videos on Uterine Fibroids.



2.2 Data Collection Content

The uploader's identity, follower count, video duration, number of likes, comments, favorites, and shares were recorded. All extracted data were documented in Excel (Microsoft Corp).

Platforms were designated as 1 = TikTok and 2 = Bilibili. Videos were categorized into four groups based on source and five groups based on content. Video sources were classified as follows: (1) Professional individuals, including gynecologists, radiologists, and oncologists; (2) Non-professional individuals, encompassing practitioners of traditional Chinese medicine, physicians from other disciplines, individuals with medical backgrounds, and those without medical backgrounds; (3) Professional institutions; and (4) Non-professional institutions. Video content was classified by theme as follows: (1) Disease-related knowledge, (2) Etiology, (3) Symptoms, (4) Treatment, and (5) Prevention and prognosis.

2.3 Quality Assessment Tools

- **Global Quality Score (GQS)**: Ranging from 1 to 5 points, with higher scores indicating superior quality[27]this metric evaluates accuracy, authority, completeness, and educational value (Table 1).

- **Modified DISCERN Tool**: Comprising five questions adapted from the original DISCERN tool, it is employed to assess the reliability of health information[28] evaluating clarity, relevance, traceability, scientific basis, and impartiality. Each dimension is scored 1 point for "yes" and 0 points for "no" (Error: Reference source not found).

- **Patient Education Materials Assessment Tool (PEMAT)**[29] Utilizing the PEMAT tool for audiovisual materials (PEMAT-A/V) with an automated scoring form, this assesses the understandability and actionability of videos.

Table 1. Description of the global quality score(5-point scale)for evaluating the quality of the videos with uterine fibroids information.

Score	Description
1	Poor quality,poor flow of the site,most information missing,and it is useless for patients.
2	Generally poor quality and flow,the content logic is poor, although some information is listed, more important information is still missing, and the use of patients is very limited.
3	Moderate quality,suboptimal flow,some important information is adequately discussed, somewhat useful for patients.
4	Good quality and flow,the video logic is clear and smooth,most of the relevant information is listed,useful for patients.
5	Excellent quality and flow,the video logic is clear, and the content is very smooth, very useful for patients.

Table 2. Modified DISCERN quality criteria for assessing the reliability of video. (1 point for answer ‘yes’, 0 point for answer ‘no’)

Reliability Score
1. Is the video clear, concise, and understandable?
2. Are valid sources cited?
3. Is the content presented balanced and unbiased?
4. Are additional sources of content listed for patient reference?

5. Are areas of uncertainty mentioned?

2.4 Statistical Analysis

Data analysis was performed using SPSS 27.0 (IBM Corp, Armonk, NY). Descriptive statistics were presented as median and interquartile range (IQR). The Mann-Whitney U test was employed to compare quality differences between platforms (TikTok vs. Bilibili), publisher, and across video content categories. Spearman's rank correlation coefficient (ρ) and stepwise regression analysis were calculated to evaluate the association between quality scores and engagement metrics (likes, shares, comments). Cohen's kappa coefficient (κ) was utilized to assess inter-rater reliability among experts. Statistical significance was set at $P < .05$ for all tests.

2.5 Ethical Statement

This study did not utilize clinical data, human specimens, or laboratory animals. All information was derived from publicly released videos on TikTok and Bilibili platforms, with no data involving personal privacy issues. Furthermore, this research did not involve any interaction with users; therefore, ethical review was not required.

3. Results

3.1 Videos characteristics

The overall characteristics of the videos are summarized in Table 3. TikTok videos exhibit significantly higher numbers of likes, comments, favorites, shares, and publisher follower counts compared to Bilibili videos (all P <.001), whereas Bilibili videos are notably longer in duration than TikTok videos ($P < .001$).

The median Global Quality Score (GQS) for TikTok videos is 3 (range: 1-5), with a median modified DISCERN (mDISCERN) score of 2 (range: 1-4). For Bilibili videos, the median GQS and mDISCERN scores are 3 (range: 1-5) and 2 (range: 1-3), respectively, showing no statistically significant differences between the two platforms ($P = 0.62$ for GQS, $P = 0.18$ for mDISCERN).

Inter-rater agreement between the two evaluators was quantified using Cohen's κ. According to the criteria proposed by Landis and Koch, a κ value > 0.8 indicates excellent agreement, values between 0.6 and 0.8 denote substantial agreement, values between 0.4 and 0.6 reflect moderate agreement, and values < 0.4 suggest poor agreement[30]. The Cohen's κ values for GQS and mDISCERN scores were 0.727 and 0.725, respectively, indicating substantial inter-rater agreement.

The median PEMAT-U (understandability) score for TikTok videos is 77% (range: 42%-93%), with a median PEMAT-A (actionability) score of 67% (range: 0-100%). For Bilibili videos, the median PEMAT-U and PEMAT-A scores are 77% (range: 46%-100%) and 67% (range: 0-100%), respectively, with no statistically significant differences between the platforms ($P = 0.47$ for PEMAT-U, $P = 0.77$ for PEMAT-A).

Table 3.Characteristics of the videos in TikTok and Bilibili.

Variable	TikTok (n=100)，median (IQR)	Bilibili (n=100), median (IQR)	Wilcoxon rank-sum test	
			z score	P value
Likes	431（23-105000）	44（0-14000）	-7.68	<.001
Comments	35（1-5947）	4（0-1622）	-6.50	<.001
Collections	129（3-52000）	30（0-3128）	-5.71	<.001
Shares	72（0-46000）	14（0-8003）	-4.95	<.001
Duration	66（20-481）	138（31-899）	-7.20	<.001

Followers	115000（651-9063000）	14000（10-10356000）	-6.76	<.001
GQS	3（1-5）	3（1-5）	-0.49	0.62
mDIS	2（1-4）	2（1-3）	-1.35	0.18
PEMAT-U	77%（42%-93%）	77%（46%-100%）	-0.72	0.47
PEMAT-A	67%（0-100%）	67%（0-100%）	-0.29	0.77

Table 4, Error: Reference source not found and Table 6,along with , illustrate the sources and content types of videos on TikTok and Bilibili. On TikTok, professional individuals uploaded the majority of videos, accounting for 83% (83/100), a significantly high proportion, followed by non-professional individuals (16/100, 16%) and professional institutions (1/100, 1%). Regarding video content on TikTok, the majority focused on treatment (48/100, 48%), followed by disease knowledge (31/100, 31%), prevention and prognosis (11/100, 11%), etiology (5/100, 5%), and symptoms (5/100, 5%). On Bilibili, professional individuals accounted for 52% of video sources (52/100), a proportion significantly lower than on TikTok, while non-professional individuals comprised 39% (39/100). This disparity is closely linked to the publisher verification policies of the two platforms: TikTok enforces stricter credential verification for medical personnel and imposes rigorous restrictions on medical advertisements and pharmaceutical promotions. On Bilibili, content pertaining to disease knowledge (32%), treatment (31%), and prevention and prognosis (30%) is represented in roughly equal proportions.

Table 4.Characteristics of the videos across sources in TikTok and Bilibili

Variable	Professional individuals		Non-Professional individuals		Professional institutions		Non-Professional institutions	
	TikTok (n=83)	Bilibili (n=52)	TikTok (n=16)	Bilibili (n=39)	TikTok (n=1)	Bilibili (n=3)	TikTok (n=0)	Bilibili (n=6)
Likes， median (IQR)	445 （23-10500）	30 （0-8661）	434 （25-16000）	53 （0-14000）	386	16 （13-338）		74 （7-309）
Comments， median (IQR)	27 （1-5947）	3 （0-297）	139 （11-1436）	6 （0-1622）	288	2 （1-28）		4 （0-103）
Collections， median (IQR)	119 （4-52000）	16 （0-2077）	204 （3-29000）	69 （0-3128）	68	10 （7-350）		36 （12-207）
Shares， median (IQR)	63 （4-46000）	13 （0-1863）	90 （0-8870）	54 （0-8003）	204	29 （4-240）		9 （4-290）
Duration， median (IQR)	65 （20-202）	108 （31-899）	76 （40-481）	219 （33-794）	41	117 （100-564）		295 （280-665）
Followers， median (IQR)	116000 （651-9063000）	14000 （10-226000）	89500 （15000-5518000）	6369 （30-10356000）	16000	2580 （261-73000）		191000 （71000-191000）
GQS， median (IQR)	3（2-5）	3（2-5）	2（1-3）	2（1-5）	2	3（3-5）		3（3-4）
mDIS， median (IQR)	2（1-4）	2（1-3）	2（1-3）	2（1-3）	2	3（2-3）		2（2-3）
PEMAT-U， median (IQR)	77% （42%-92%）	77% （62%-92%）	76% （50%-93%）	69% （46%-100%）	85%	77% （69%-100%）		92% （77%-92%）
PEMAT-A， median (IQR)	67% （0-100%）	67% （0-100%）	33% （0-75%）	67% （0-100%）	67%	75% （0-100%）		0 （0-33%）

Table 5.Characteristics of the videos across content in TikTok

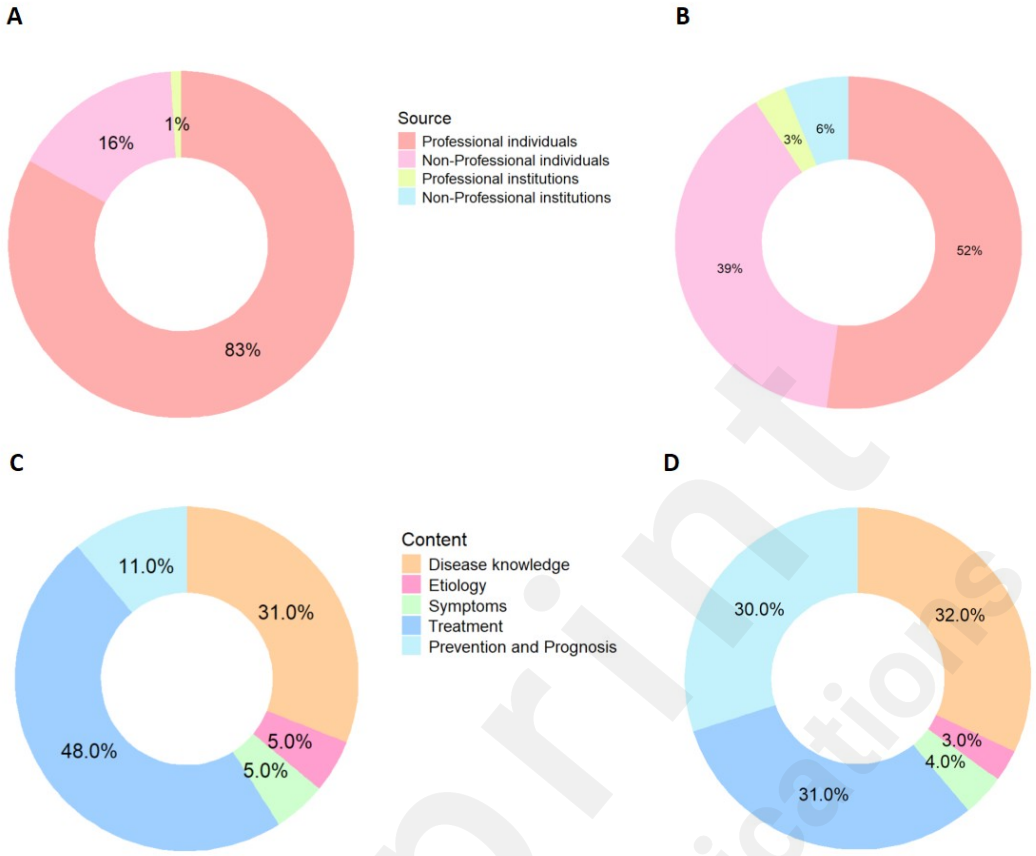
Variable (TikTok)	Disease knowledge (n=31)	Etiology (n=5)	Symptoms (n=5)	Treatment (n=48)	Prevention and Prognosis (n=11)
Likes, median (IQR)	544 (25-18000)	337 (227-16000)	245 (108-417)	417 (23-52000)	721 (226-105000)
Comments, median (IQR)	27 (2-4167)	41 (8-1436)	4 (3-21)	36 (1-1571)	51 (1-5947)
Collections, median (IQR)	131 (3-21000)	177 (43-29000)	40 (17-117)	122 (4-34000)	276 (55-52000)
Shares, median (IQR)	72 (0-7923)	258 (72-8870)	19 (4-71)	58 (7-19000)	162 (32-46000)
Duration, median (IQR)	77 (34-234)	54 (44-99)	54 (35-66)	57 (20-202)	75 (33-481)
Followers, median (IQR)	184000 (651-9063000)	228000 (27000-2262000)	419000 (14000-697000)	75000 (1369-3270000)	1327000 (1933-6486000)
GQS, median (IQR)	4 (2-5)	2 (2-3)	3 (2-5)	3 (1-4)	3 (2-4)
mDISS, median (IQR)	2 (1-4)	2 (2-2)	2 (2-3)	2 (1-4)	2 (1-3)
PEMAT-U, median (IQR)	77% (55%-85%)	83% (69%-92%)	85% (62%-92%)	69% (42%-93%)	83% (54%-92%)
PEMAT-A, median (IQR)	67% (0-100%)	33% (0-67%)	67% (0-100%)	67% (0-100%)	67% (33%-100%)

Table 6.Characteristics of the videos across content in Bilibili

Variable (Bilibili)	Disease knowledge (n=32)	Etiology (n=3)	Symptoms (n=4)	Treatment (n=31)	Prevention and Prognosis (n=30)
Likes, median (IQR)	113 (0-14000)	8661 (68-9399)	2 (0-49)	31 (0-547)	37.5 (0-14000)
Comments, median (IQR)	8 (0-1622)	297 (9-479)	0 (0-3)	3 (0-64)	3.5 (0-546)
Collections, median (IQR)	85 (0-2216)	607 (46-2077)	2.5 (0-17)	15 (0-235)	32.5 (0-3128)
Shares, median (IQR)	46 (0-2438)	1170 (4-8003)	1.5 (0-12)	9 (0-197)	20 (0-1507)
Duration, median (IQR)	222 (54-794)	297 (145-373)	93 (58-139)	128 (33-899)	102.5 (31-656)
Followers, median (IQR)	18444 (20-2135000)	226000 (191000-2137000)	184.5 (18-18000)	14000 (10-412000)	7129 (261-10356000)

GQS median (IQR)	3 (1-5)	4 (3-4)	3.5 (2-4)	3 (1-5)	3 (1-4)
mDISCERN median (IQR)	2 (1-3)	3 (3-3)	2 (2-2)	2 (1-3)	2 (1-3)
PEMAT-U median (IQR)	77% (62%-100%)	92% (77%-92%)	69% (69%-85%)	77% (58%-72%)	69% (46%-92%)
PEMAT-A median (IQR)	33% (0-100%)	33% (0-67%)	50% (0-67%)	67% (0-100%)	67% (0-100%)

Figure 2.Percentage of videos on uterine fibroid from different sources and with different contents in TikTok and Bilibili. (A) Sources of TikTok videos. (B) Sources of Bilibili videos. (C) Content types of TikTok videos. (D) Content types of Bilibili videos.



3.2 Video content distribution

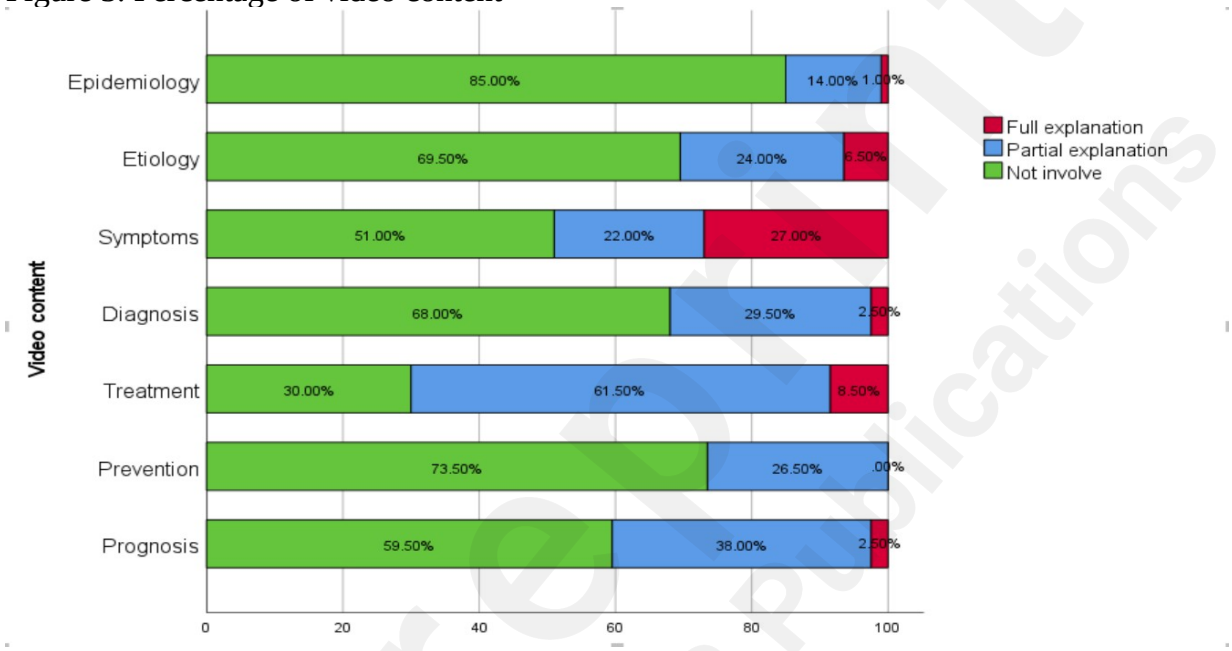
We further analyzed the content discussed in the included short videos (Table 7) and evaluated their completeness (Appendix S1: Uterine Fibroid Completeness Scoring Table) across seven domains: epidemiology, etiology, symptoms, diagnosis, treatment, prevention, and prognosis. Each domain was scored from 0 to 2 points, with a total possible score of 14 points. A subdomain mentioned once received 1 point (partial explanation), more than three mentions received 2 points (complete explanation), and no mention received 0 points. The scores for each domain are presented in Figure 3.We found that the treatment of uterine fibroids was the most frequently discussed topic, addressed in 70% of the total 200 videos (61.5% partial explanation, 8.5% complete explanation). On TikTok, 77% of videos provided partial or full explanations of treatment, compared to 63% on Bilibili. Symptoms followed as the second most common topic, appearing in 49% of the total videos. Etiology and diagnosis of uterine fibroids also garnered relative public interest, with similar proportions (30.5% vs. 32%). However, few videos offered detailed health information on the epidemiology of uterine fibroids, with only 12% of TikTok videos providing partial (11%) or full (1%) explanations. Notably, no videos provided a detailed explanation of prevention strategies for uterine fibroids.

Table 7.Completeness of video content.

Video content	Not involve (0 points)			Partial explanation (1 point)			Full explanation (2 points)		
	TikTok	Bilibili	Total	TikTok	Bilibili	Total	TikTok	Bilibili	Total
Epidemiology,n(%)	88(88)	82(82)	170(85)	11(11)	17(17)	28(14)	1(1)	1(1)	2(1)
Etiology,n(%)	70(70)	69(69)	139(69.5)	27(27)	21(21	48(24)	3(3)	10(10)	13(6.5)

					)				
Symptoms,n(%)	49(49)	53(53)	102(51)	21(21)	23(23)	44(22)	30(30)	24(24)	54(27)
Diagnosis,n(%)	70(70)	66(66)	136(68)	29(29)	30(30)	59(29.5)	1(1)	4(4)	5(2.5)
Treatment,n(%)	23(23)	37(37)	60(30)	66(66)	57(57)	123(61.5)	11(11)	6(6)	17(8.5)
Prevention,n(%)	81(81)	66(66)	147(73.5)	19(19)	34(34)	53(26.5)	0(0)	0(0)	0(0)
Prognosis,n(%)	62(62)	57(57)	119(59.5)	37(37)	39(39)	76(38)	1(1)	4(4)	5(2.5)

Figure 3. Percentage of video content



Videos covered the seven predefined content domains of the completeness scoring to varying degrees (Table 8,). Non-professional institutions scored highest in the "symptoms" (mean: 1.50) and "prognosis" (mean: 0.83) domains but recorded a score of 0 in the "prevention" domain, indicating a complete absence of prevention-related information from this source. Professional individuals performed well in the "treatment" (mean: 0.83) and "symptoms" (mean: 0.75) domains but scored lowest in "epidemiology" (mean: 0.10), suggesting limited coverage in this area. Professional institutions achieved higher scores in the "etiology" and "symptoms" domains (mean: 0.75) but scored lower in "prevention" and "prognosis" (mean: 0.25), possibly due to a focus on academic rigor at the expense of practical utility. The mean score for "symptoms" from non-professional institutions (1.50) was significantly higher than that of other sources, likely because their content aligns more closely with public needs.Figure 5 illustrates the distribution of total completeness scores across different video sources, with only 10 videos scoring 7 or higher and the highest score reaching 11. Overall, professional institutions demonstrated markedly superior and more consistent completeness scores compared to other groups. In contrast, non-professional individuals exhibited greater variability in scores, potentially reflecting the heterogeneity and diversity within this group in fulfilling the task.

Table 8.Completeness of video content across sources.

source of videos	Epidemiology mean(SD)	Etiology mean(SD)	Symptoms mean(SD)	Diagnosis mean(SD)	Treatment mean(SD)	Prevention mean(SD)	Prognosis mean(SD)
Professional individuals	0.10(0.32)	0.27(0.54)	0.75(0.86)	0.35(0.51)	0.83(0.58)	0.21(0.41)	0.45(0.57)
Non-Professional individuals	0.27(0.49)	0.58(0.66)	0.71(0.81)	0.29(0.53)	0.71(0.53)	0.44(0.50)	0.35(0.48)
Professional institutions	0.25(0.50)	0.75(0.96)	0.75(0.96)	0.50(1.00)	0.50(1.00)	0.25(0.50)	0.25(0.50)
Non-Professional institutions	0.50(0.55)	0.50(0.84)	1.50(0.84)	0.67(0.52)	0.67(0.82)	0.00(0.00)	0.83(0.41)

Figure 4.Multi-dimensional content quality assessment using radar charts.

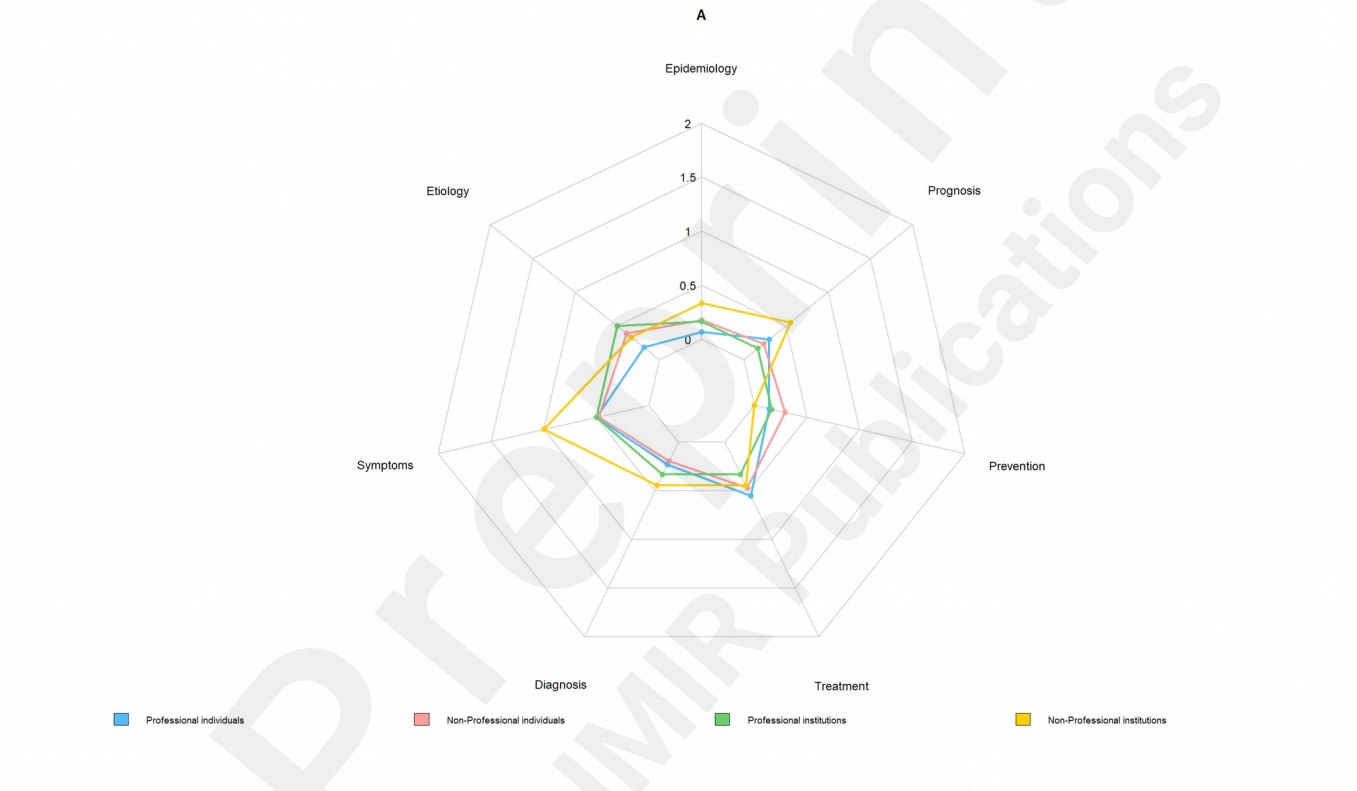
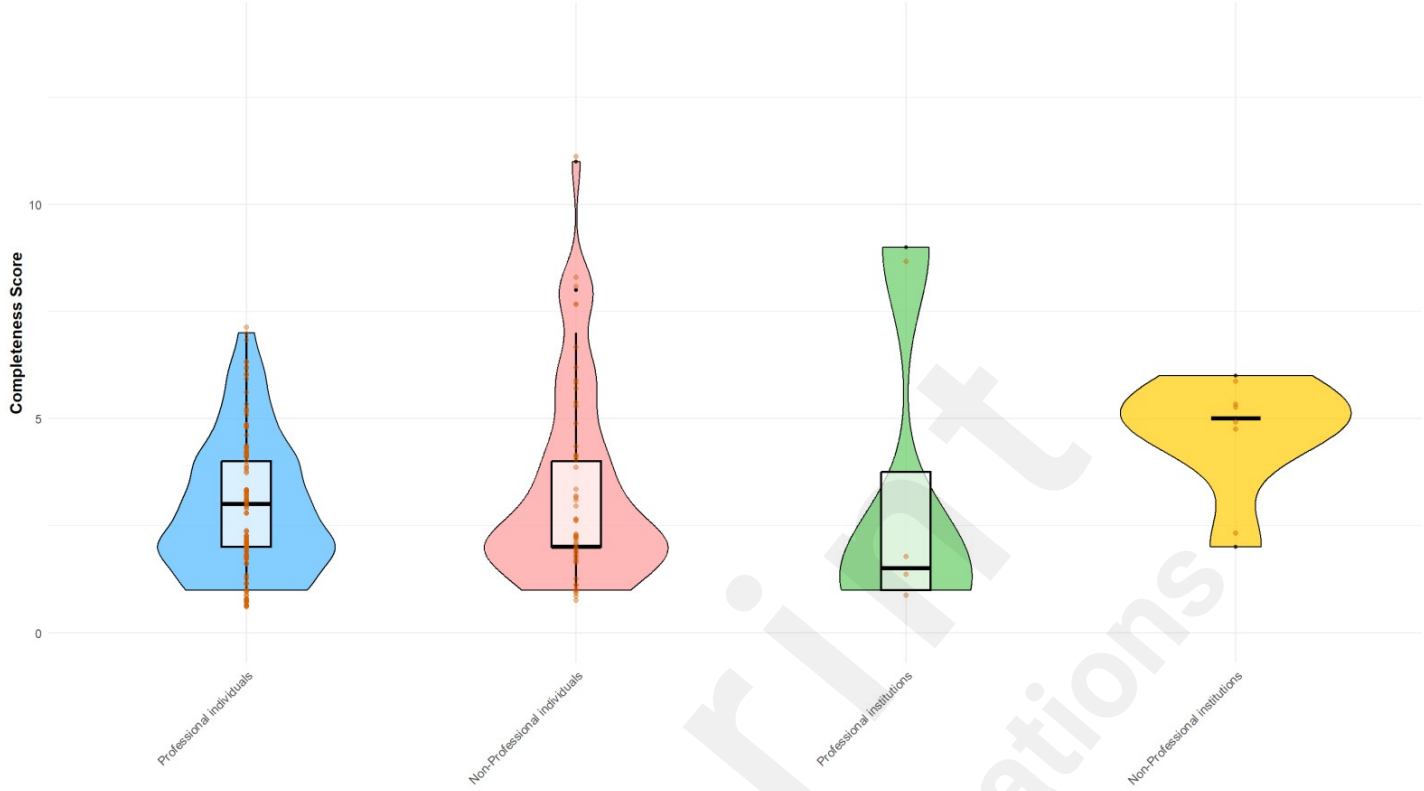


Figure 5.Probability density distribution comparison of content integrity composite scores.



3.3 Video Quality and Reliability Assessments

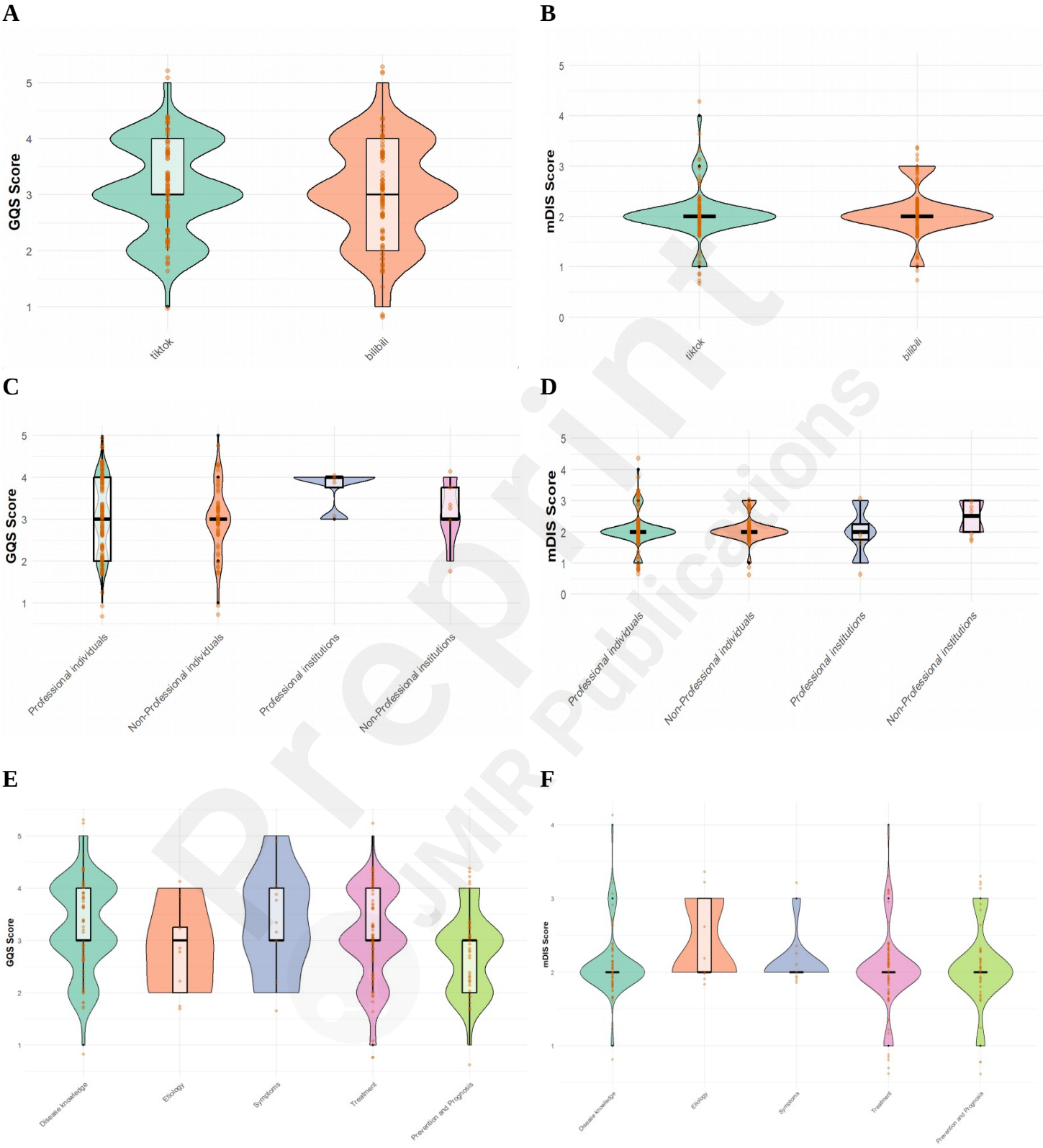
The GQS and mDISCERN scores were compared across different platforms, video sources, and content types. The GQS scores for TikTok and Bilibili (Figure 6A) are predominantly clustered around 3, indicating moderate video quality. Although Bilibili videos exhibit a concentration of higher scores, a greater number of videos are clustered at the lower end, which drags down the overall quality level. The mDISCERN scores (Figure 6B) reveal moderate reliability for both platforms. There is no significant difference in quality and reliability between the two platforms, with TikTok slightly outperforming Bilibili.

Regarding video sources, GQS scores for professional individuals and professional institutions show a concentration of higher scores, reflecting superior quality. Non-professional institutions, however, achieve a median GQS score of 4 (Figure 6C), significantly higher than other groups (professional groups and non-professional individuals, both at 3), and a median mDISCERN score of 3 (Figure 6D), surpassing the median of 2 for other groups. This suggests that content from non-professional institutions excels in both quality and reliability, challenging the traditional assumption that professional sources consistently dominate. However, this finding is tempered by the limited number of videos from non-professional institutions, rendering it unrepresentative of the broader dataset. The score distribution for non-professional individuals displays considerable variability, underscoring the heterogeneity in content quality and reliability within this group.

In terms of content domains, the GQS scores for disease knowledge (Figure 6E) exhibit a concentration of high scores with low dispersion, indicating high quality and strong information authority. Similarly, in mDISCERN scores (Figure 6F), disease knowledge demonstrates greater reliability, outperforming other categories.

Figure 6. GQS and mDISCERN Scores (A)Comparison of Global Quality Scores (GQS) between TikTok and Bilibili videos.(B)Comparison of modified DISCERN (mDISCERN) scores between TikTok and Bilibili videos.(C)GQS

scores across different video sources.(D)mDISCERN scores across different video sources.(E)GQS scores across different content categories.(F)mDISCERN scores across different content categories.



3.4 Video Understandability and Actionability

A comparison of Patient Education Materials Assessment Tool for Users (PEMAT-U) (understandability) scores across video sources on different platforms (Figure 7A) reveals that

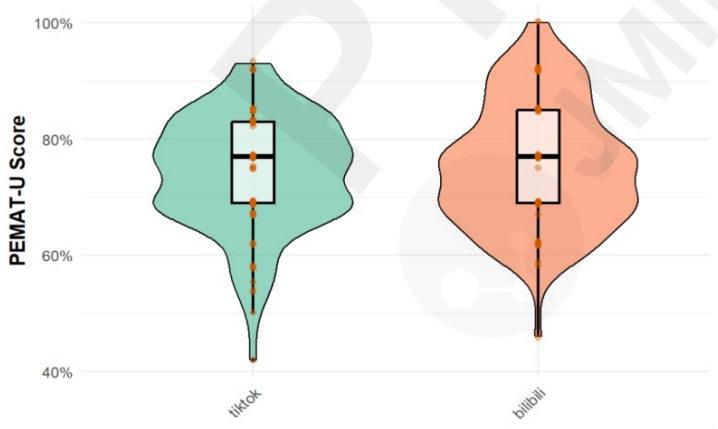
TikTok videos exhibit a concentration of higher scores, outperforming Bilibili in understandability. Although the highest understandability score was derived from Bilibili.This, combined with the shorter duration of TikTok videos, suggests that their content is concise, with strong visual aids. However, lower scores stem from oversimplification and insufficient information completeness. In terms of PEMAT-A (actionability) scores (Figure 7B), TikTok similarly surpasses Bilibili.

Regarding understandability across video sources, non-professional individuals demonstrate a stronger advantage (Figure 7C), likely due to their use of more colloquial language, while professional individuals show significant variation the scores ranged from a minimum of 42% to a maximum of 100%. For actionability, professional individuals, non-professional individuals, and professional institutions all have a median score of 67%, with no notable differences; however, professional institutions exhibit marked polarization. In contrast, videos from non-professional institutions consistently show lower actionability, indicating poor feasibility (Figure 7D).

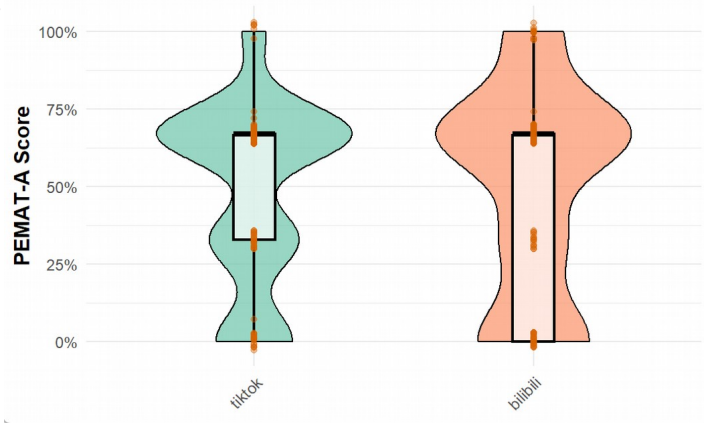
Concerning video content, the "symptoms" domain achieves the highest understandability, while the "prevention and prognosis" domain scores lower(Figure 7E). Overall, no understandability scores fall below 42%, whereas actionability scores include a notable proportion of low values, even reaching 0%(Figure 7F).

Figure 7.Comparative Analysis of Video Understandability and Actionability A PEMAT-U scores of videos across platforms. (B)PEMAT-A scores of videos across platforms. (C)PEMAT-U scores of videos across sources. (D)PEMAT-A scores of videos across sources. (E)PEMAT-U scores of videos across content categories . (F)PEMAT-A scores of videos across content categories.

A

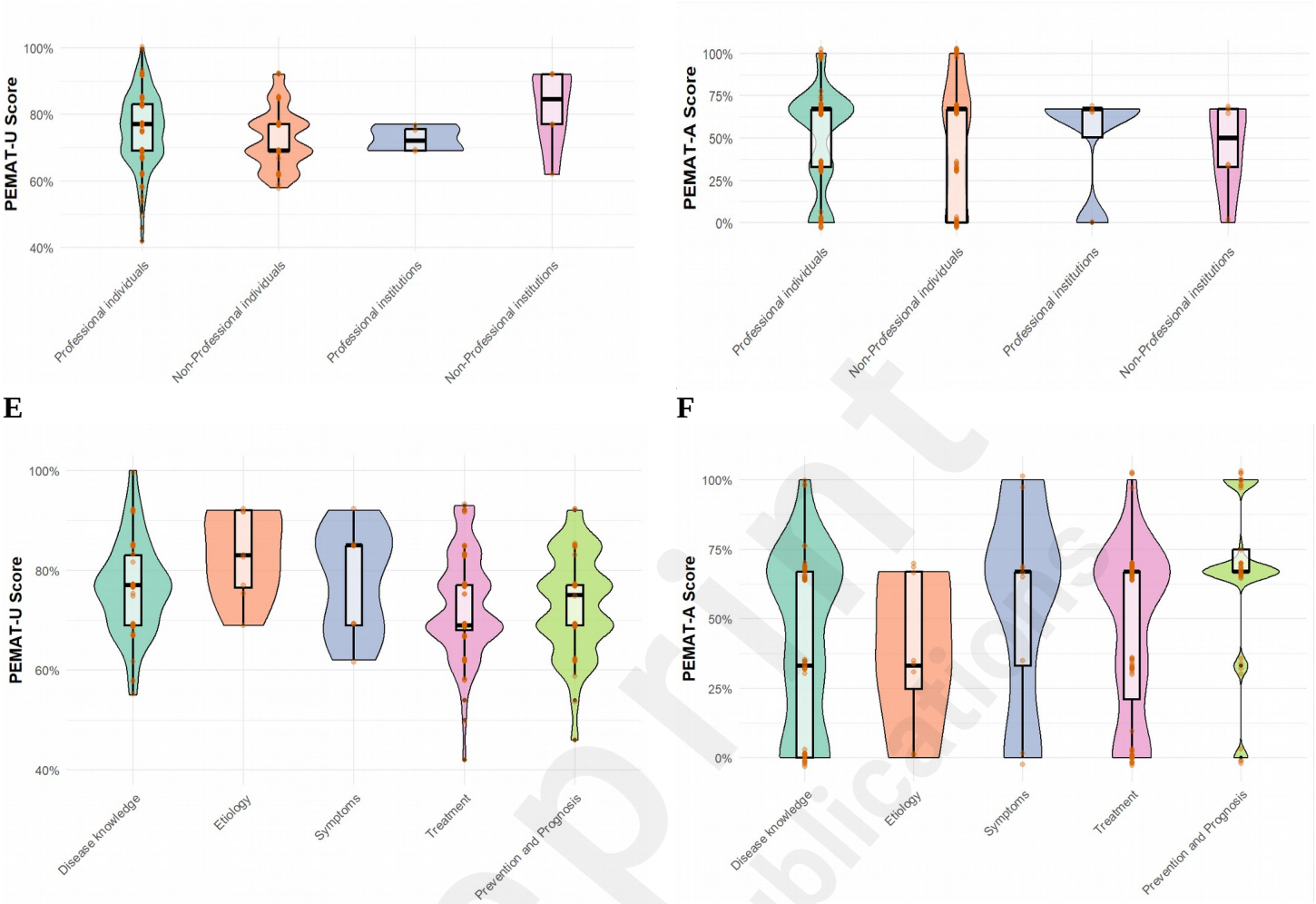


B



C

D



3.5 Correlation and Stepwise Regression Analysis

Spearman rank correlation analysis was employed to assess the relationships between quality scores, interaction data, and video content, as shown in Figure 8. The results indicate strong positive correlations between likes and comments, favorites（0.88<*r*<0.94）, and shares, while follower count exhibits moderate to strong positive correlations with interaction data（0.45<*r*<0.63）. The correlation between GQS and mDISCERN scores is $r = 0.41$, with a significance level of $P < .01$, suggesting a moderate positive relationship between the two. This finding implies that higher quality scores may be associated with improved content distribution characteristics. Etiology demonstrates weak positive correlations（0.19<*r*<0.27） with interaction data (likes, comments, favorites, and shares), indicating that viewers may have a heightened interest in etiological content. Video interaction metrics exhibit only a slight positive correlation with both GQS and mDISCERN scores（0.05<*r*<0.10）.

Video understandability (PEMAT-U) shows weak positive correlations with quality (GQS) and reliability (mDISCERN), with specific r-values of 0.21 and 0.29,suggesting that content with higher quality scores tends to exhibit greater user-friendliness, reflecting a stronger alignment between content design and user needs. The actionability of videos, as assessed by the Patient Education Materials Assessment Tool for Audiovisual Materials (PEMAT-A), shows only a moderately low positive correlation with the prevention domain（*r*=0.30）, while exhibiting a weak negative correlation with diagnosis（*r*=-0.14）. Additionally, other negative correlations among video

parameters were identified, such as those between prevention and treatment（*r*=-0.38）, symptoms（*r*=-0.18）, diagnosis（*r*=-0.17）, and prognosis（*r*=-0.21）, as well as between etiology and treatment（*r*=-0.21）.

Stepwise regression analysis for GQS yielded four models, each incorporating additional predictors (Table 9 andTable 10). The final model (Model 4), which included "completeness score," "source," PEMAT-U, and PEMAT-A as predictors, demonstrated the highest predictive power. Tolerance values for the predictors ranged from 0.895 to 0.964, and variance inflation factor (VIF) values ranged from 1.000 to 1.118, indicating the absence of multicollinearity. All models exhibited statistical significance in F-tests ($P < .001$).

Similarly, stepwise regression analysis for mDISCERN also generated four models, each with progressively more predictors (Table 11and Table 12). The final model (Model 4), incorporating PEMAT-U, "completeness score," "treatment," and "epidemiology," displayed the greatest predictive capacity. VIF values remained below 2 across all models, confirming the absence of significant multicollinearity. All models were statistically significant in F-tests ($P < .001$).

Figure 8. Correlation analysis.

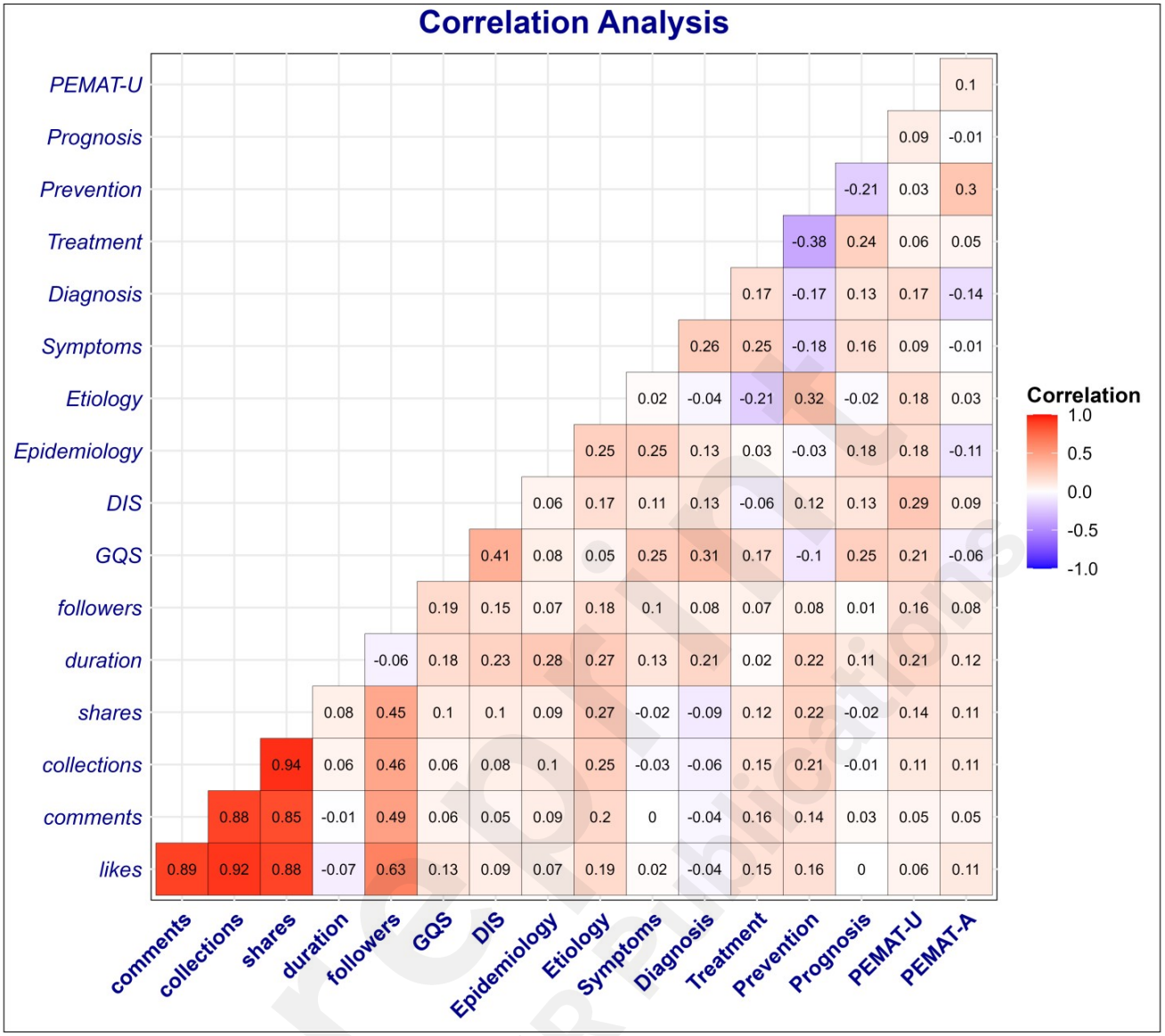


Table 9.Stepwise regression analysis（GQS）

Model	Predictors included	R^2	Adjusted R^2	SE of the estimate	F change	P value	ANOVA	
							F	P
1	Constant and Completeness score	0.133	0.129	0.799	30.44	<.001	30.44	<.001
2	Constant, Completeness score and Source	0.213	0.205	0.763	20.095	<.001	26.735	<.001
3	Constant,Completeness score,Source and PEMAT-U	0.251	0.239	0.747	9.709	0.002	21.848	<.001

4	Constant,Completeness score,Source,PEMAT-U and PEMAT-A	0.273	0.259	0.737	6.217	0.014	18.346	<.001

Table 10.Stepwise regression coefficients, statistical significance, and collinearity assessment(GQS).

Model	Predictors	Unstandardized coefficients		Standardized coefficients	t	*P*	95% CI for B		Collinearity statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	2.554	.110		23.228	<.001	2.338	2.771		
	Completeness score	.168	.030	.365	5.517	<.001	.108	.228	1.000	1.000
2	(Constant)	2.992	.143		20.867	<.001	2.709	3.275		
	Completeness score	.191	.030	.415	6.462	<.001	.133	.249	.970	1.031
	Source	-.362	.081	-.288	-4.483	<.001	-.521	-.203	.970	1.031
3	(Constant)	1.841	.395		4.661	<.001	1.062	2.620		
	Completeness score	.167	.030	.363	5.582	<.001	.108	.226	.906	1.103
	Source	-.396	.080	-.315	-4.969	<.001	-.553	-.239	.952	1.051
	PEMAT-U	.017	.005	.203	3.116	.002	.006	.028	.904	1.106
4	(Constant)	1.982	.394		5.028	<.001	1.204	2.759		
	Completeness score	.169	.030	.368	5.732	<.001	.111	.228	.905	1.104
	Source	-.430	.080	-.342	-5.385	<.001	-.588	-.273	.923	1.083
	PEMAT-U	.018	.005	.219	3.389	<.001	.008	.029	.895	1.118
	PEMAT-A	-.004	.002	-.154	-2.475	.014	-.007	-.001	.964	1.038

Table 11.Stepwise regression analysis（mDISCERN）

Model	Predictors included	R^2	Adjusted R^2	SE of the estimate	*F* change	*P* value	ANOVA	
							F	*P*
1	Constant and PEMAT-U	0.09	0.086	0.469	19.648	<.001	19.648	<.001
2	Constant, PEMAT-U and Completeness score	0.113	0.104	0.464	5.077	0.025	12.565	<.001
3	Constant,PEMAT-U, Completeness score and Treatment	0.131	0.118	0.461	4.019	0.046	9.844	<.001

4	Constant,PEMAT-U, Completeness score, Treatment and Epidemiology	0.152	0.135	0.456	4.86	0.029	8.744	<.001

Table 12.Stepwise regression coefficients, statistical significance, and collinearity assessment(mDISCERN).

		Unstandardized coefficients		Standardized coefficients			95% CI for B		Collinearity statistics	
Model	Predictors	B	Std.Error	Beta	t	*P*	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.993	.246		4.035	<.001	.508	1.479		
	PEMAT-U	.014	.003	.300	4.433	<.001	.008	.021	1.000	1.000
2	(Constant)	1.023	.244		4.193	<.001	.542	1.505		
	PEMAT-U	.012	.003	.256	3.669	<.001	.006	.019	.922	1.085
	Completeness score	.042	.018	.157	2.253	.025	.005	.078	.922	1.085
3	(Constant)	1.084	.244		4.442	<.001	.603	1.566		
	PEMAT-U	.012	.003	.252	3.632	<.001	.006	.019	.921	1.086
	Completeness score	.058	.020	.221	2.897	.004	.019	.098	.763	1.311
	Treatment	-.124	.062	-.147	-2.005	.046	-.246	-.002	.821	1.218
4	(Constant)	1.025	.243		4.213	<.001	.545	1.505		
	PEMAT-U	.013	.003	.260	3.781	<.001	.006	.019	.918	1.089
	Completeness score	.087	.024	.330	3.655	<.001	.040	.134	.534	1.872
	Treatment and Epidemiology	-.154	.063	-.183	-2.453	.015	-.277	-.030	.783	1.278
		-.221	.100	-.177	-2.205	.029	-.419	-.023	.671	1.491

4. Discussion

4.1 Principal Findings

This study reveals that the quality of health-related content on uterine fibroids across short video platforms is generally inadequate, aligning with previous research on liver cancer[15].No significant quality differences were observed between TikTok and Bilibili, although TikTok showed a slight edge, particularly in videos produced by experts, which tended to be of higher quality.

During the data collection process, a significant number of instructional videos focusing on surgery, pathology, and medical examinations were removed from Bilibili. These videos are specifically designed for a specialized audience, including medical professionals and students, rather than for the general public. In comparison, TikTok did not offer any content within these categories. This difference highlights that Bilibili is better suited for the production of detailed, academically-oriented material. Medical students and healthcare professionals in need of expert resources can find high-quality videos on Bilibili, although users must exercise a certain degree of judgment to navigate the platform effectively.

An interesting pattern emerged when comparing the sources of videos on both platforms. On TikTok, the majority of video creators were professionals with medical expertise, such as gynecologists, radiologists, oncologists, and practitioners of traditional Chinese medicine who also engage in modern healthcare. The only exception was a fitness blogger who posted a video about uterine fibroids, but this content was excluded from the analysis due to its relatively low overall ranking. In contrast, Bilibili featured a broader range of video creators, including not only medical professionals but also a small number of medical institutions, non-medical organizations, and individuals without formal medical backgrounds. This difference in content creators reflects, in part, the distinct demographic profiles of the two platforms' audiences.

The completeness scores of video content are generally low, typically below 7 points, and show a moderate positive correlation with the length of short videos. Creating high-quality content that is both thematically relevant and logically coherent within a brief time frame has become a key area of focus for content creators. The advantages of professional individuals and institutions—stemming from their resources, experience, and expertise—likely contribute to their better performance in this area. In contrast, non-professional creators tend to show more variation in their results, potentially influenced by factors such as their knowledge base, available resources, and level of training. Future research could investigate how these variables affect the performance of different groups in producing such content, providing more insightful guidance for practice and policy development in related domains.

4.2 Correlation and Stepwise Regression Analysis of Video Quality, Reliability, and Video Characteristics

The weak correlation observed between video interaction metrics and GQS/mDISCERN scores suggests that audience engagement, while significant, is not a reliable indicator of video content quality and reliability. This finding corroborates the results reported by Cui et al[31],but diverges from those of Li et al. concerning osteoporosis[32]. These discrepancies highlight the need for enhanced public discernment in differentiating between high-quality and low-quality video resources.

The primary preventive measures for uterine fibroids include regular check-ups (for early detection and intervention), weight management, avoidance of prolonged exogenous estrogen exposure, a healthy diet (e.g., reducing red meat intake), and chronic disease management. These preventive measures are relatively feasible for the general public, thereby accounting for the positive correlation between video actionability and prevention. In contrast, diagnosis requires specialized medical knowledge, rendering it less practicable for the general public and thus explaining the observed negative correlation.

The results of stepwise regression indicated a strong positive predictive relationship between "completeness score" and GQS. Conversely, "video source" demonstrated an inverse relationship. Furthermore, PEMAT-U, along with the completeness score, showed positive prediction of

mDISCERN scores, while negative associations were observed for "treatment" and "epidemiology." The negative coefficients between variables and scores should be interpreted with caution, as they do not necessarily imply causation.

4.3 Practical Significance

Short videos, known for their conciseness, effective visual communication, ease of production, and high interactivity, address the varied preferences of different audience groups. To stand out in a highly competitive environment, both individual creators and corporate organizations must focus on the three key principles: "visual appeal, emotional connection, and actionable guidance." However, in response to market pressures, clickbait titles have become increasingly common, often paired with content that is shallow or misleading. This trend highlights the urgent need to improve the overall quality of video production.

Globally, TikTok has emerged as the fastest-growing social media platform among children and young people[33], with substantial potential as a public health tool[34]. Personal health advice disseminated via social media appears to exert a profound influence on adolescents[35], and misinformation in some videos can rapidly proliferate, adversely affecting public health[36]. A study on tonsil stones revealed that children attempting untested remedies from videos suffered significant harm[35].

Platform regulation and expert engagement are crucial elements for improving the overall quality of information. While some videos attract high engagement, many still contain inaccurate or incomplete data. To address this, it is recommended that platforms implement a robust review system for health information and promote the involvement of experts in content creation. Further refine the verification methods for "expert" identity to standardize the review and upload process for health information content.Furthermore, creators should focus on refining the video structure, emphasizing essential information, and utilizing interactive features to enhance content quality.

4.4 Strengths and Limitations

This research scrutinized video material sourced from two major Chinese short-form video applications, covering a wide spectrum of age groups. Qualified healthcare experts appraised the videos, judging their quality, reliability, understandability, and actionability through the utilization of the GQS, mDISCERN, and PEMAT-A/V rating methodologies. To strengthen the robustness of the research, Spearman's rank correlation coefficient and stepwise regression techniques were implemented. The outcomes present valuable direction for developers of content endeavoring to improve the standard of health-related information sharing.

Nonetheless, several constraints merit attention. Primarily, the confinement to videos in the Chinese language restricts the extent to which the results can be broadly applied. Subsequent studies ought to delve into how well the sample reflects the overall population and the restrictions imposed by choosing a specific language and platform. Secondly, choosing the top 100 most popular videos could potentially introduce bias caused by algorithms. Thirdly, the appropriateness of employing the GQS and mDISCERN instruments for evaluating video content demands further confirmation. Lastly, the restricted number of videos from both professional and non-professional institutions origins may not adequately depict the wider range of videos available. Subsequent investigations should strive to enlarge the number of samples within these classifications.

5. Conclusion

This research evaluated the quality of health-related information about uterine fibroids on the TikTok and Bilibili platforms, revealing that the overall quality is generally inadequate, with minimal

differences between the two platforms. However, TikTok videos tend to show slightly higher quality compared to those on Bilibili, while content created by medical experts stands out with significantly better quality. The growing availability of online educational resources has highlighted increasing disparities in content quality and professionalism across platforms. While Bilibili hosts a higher percentage of videos with an academic focus, users must still apply discernment to ensure the information they encounter is accurate. Future studies could investigate strategies to improve video quality on these platforms and enhance users' ability to critically assess and utilize the available content. Furthermore, research may explore ways to balance professionalism and accessibility to better meet the diverse needs of various audiences. It is therefore recommended that platforms strengthen oversight and encourage more active involvement from medical professionals in content production. Additionally, medical experts should address common misconceptions and inaccuracies in health-related videos, ensuring that the public receives more reliable and scientifically sound health information.

Authors' Contributions

LW conceived and designed the study. LW, TX, and FH were responsible for reviewing and scoring the videos. DZ and YC collected and analyzed the data. LW wrote the original draft. FH reviewed the manuscript and provided critical revisions to the intellectual content. All the authors contributed to manuscript writing and editing and approved the final draft for submission.

Conflicts of Interest

None declared.

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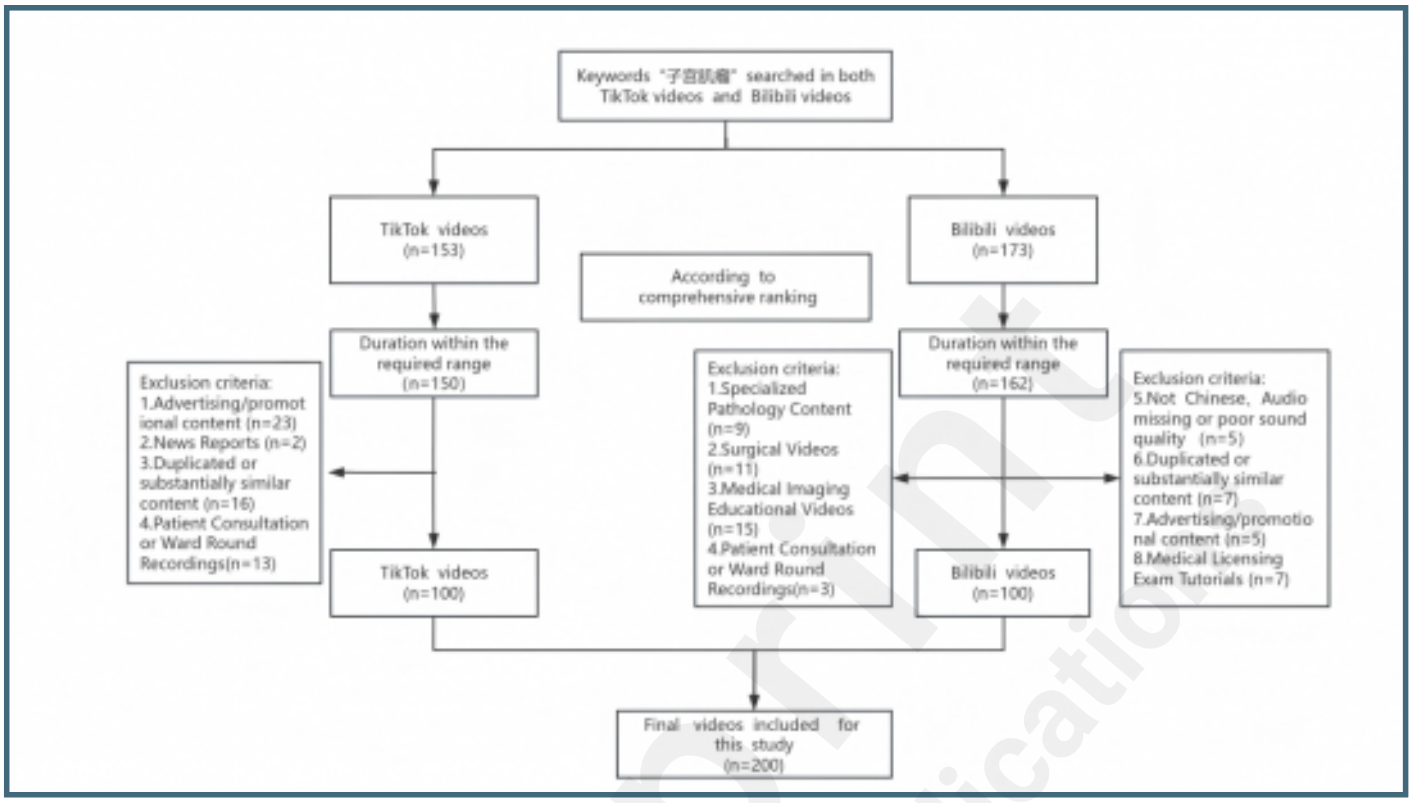
Supplementary Files

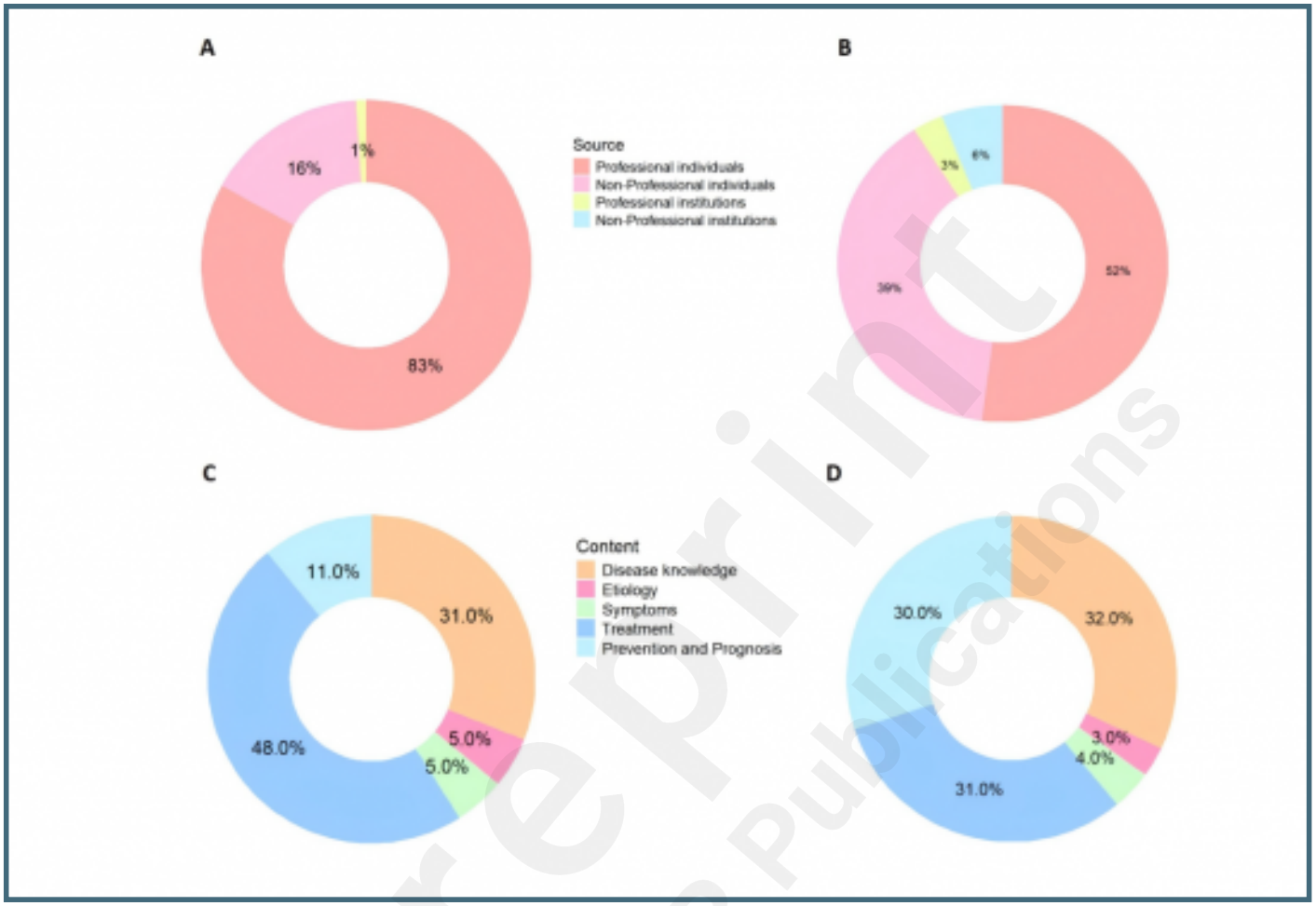
Dataset.
URL: http://asset.jmir.pub/assets/ed7f72854c778df4ea3b85e6fb71fa9f.xlsx

Figures

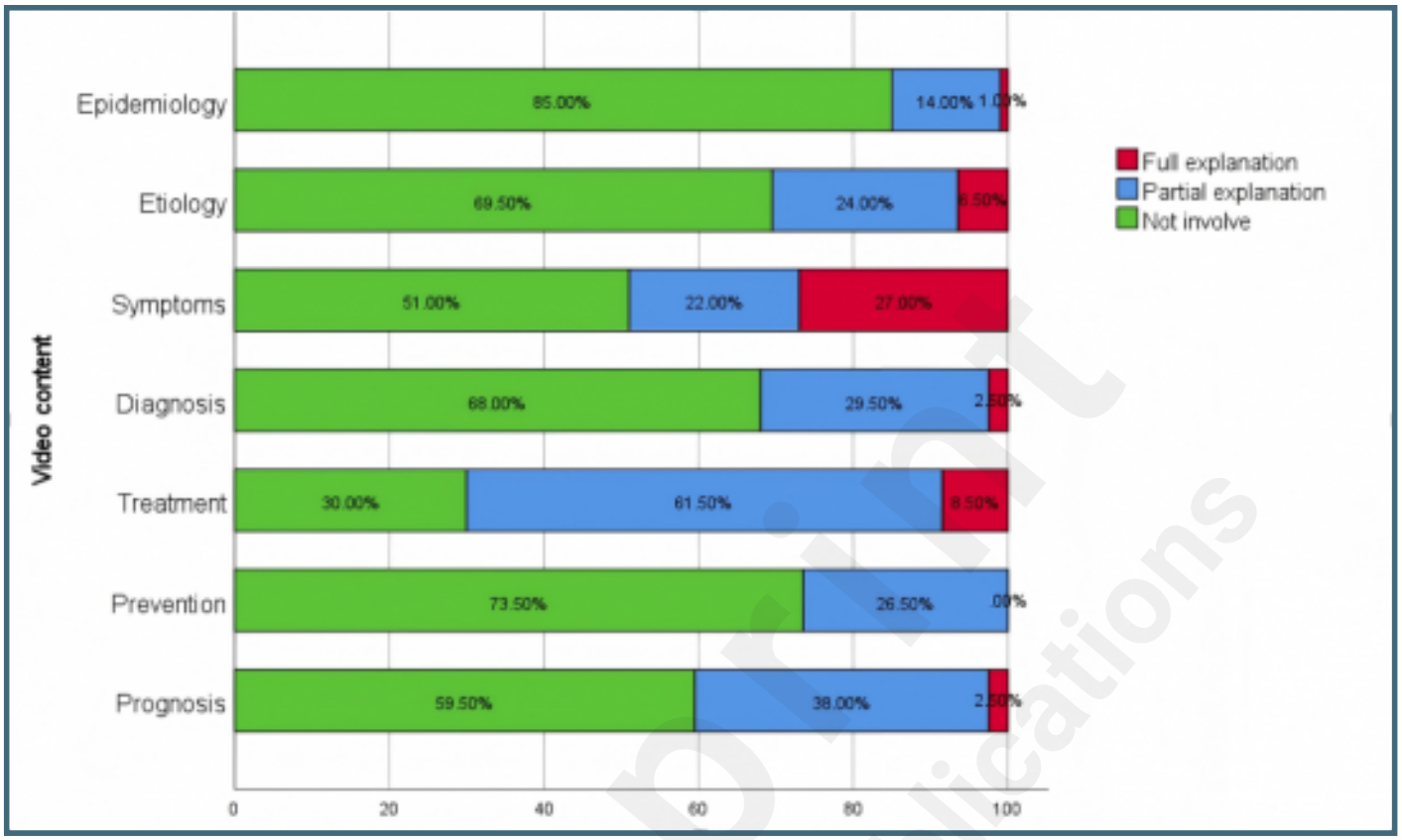
Flowchart for Searching Short Videos on Uterine Fibroids.



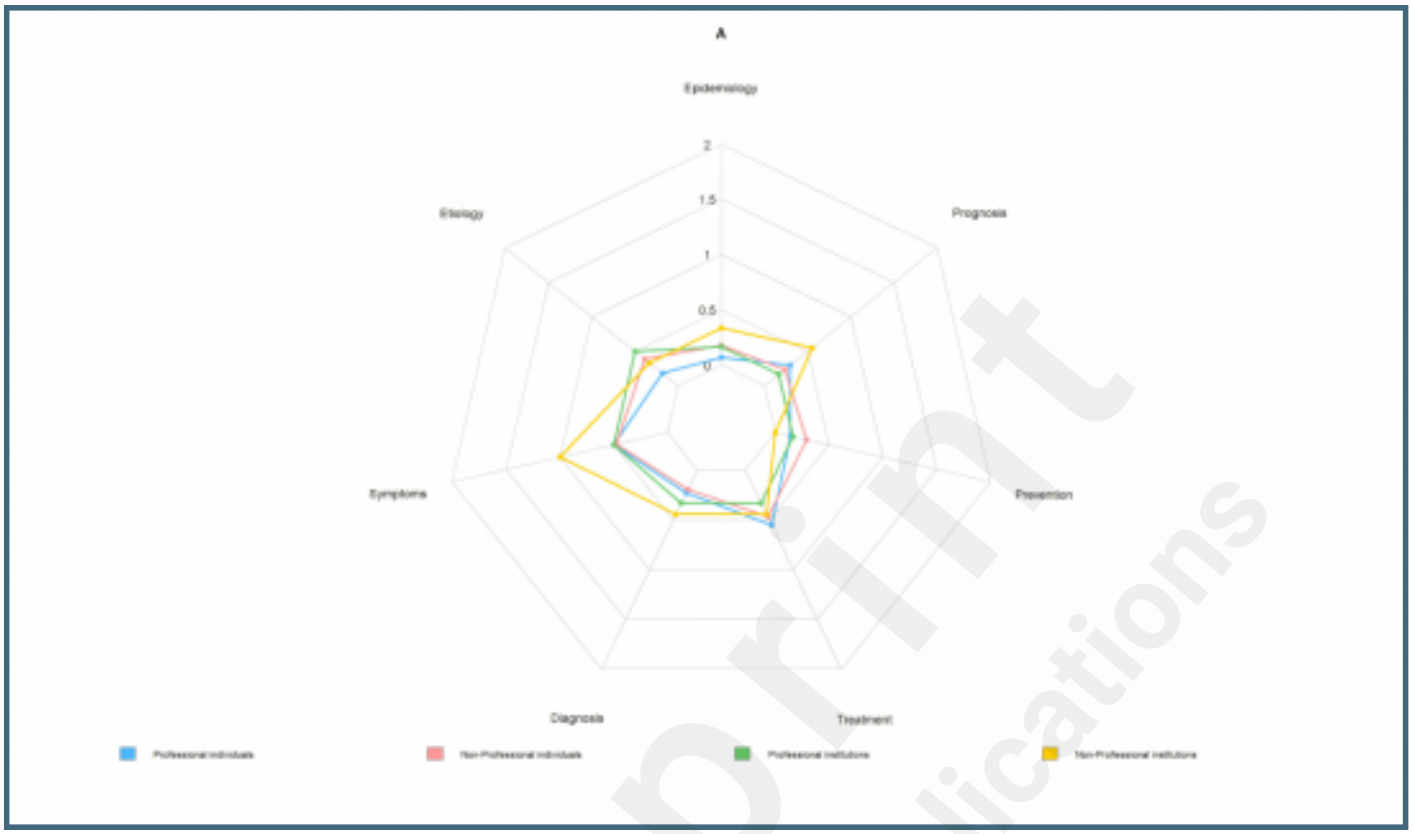
Percentage of videos on uterine fibroid from different sources and with different contents in TikTok and Bilibili. (A) Sources of TikTok videos. (B) Sources of Bilibili videos. (C) Content types of TikTok videos. (D) Content types of Bilibili videos.



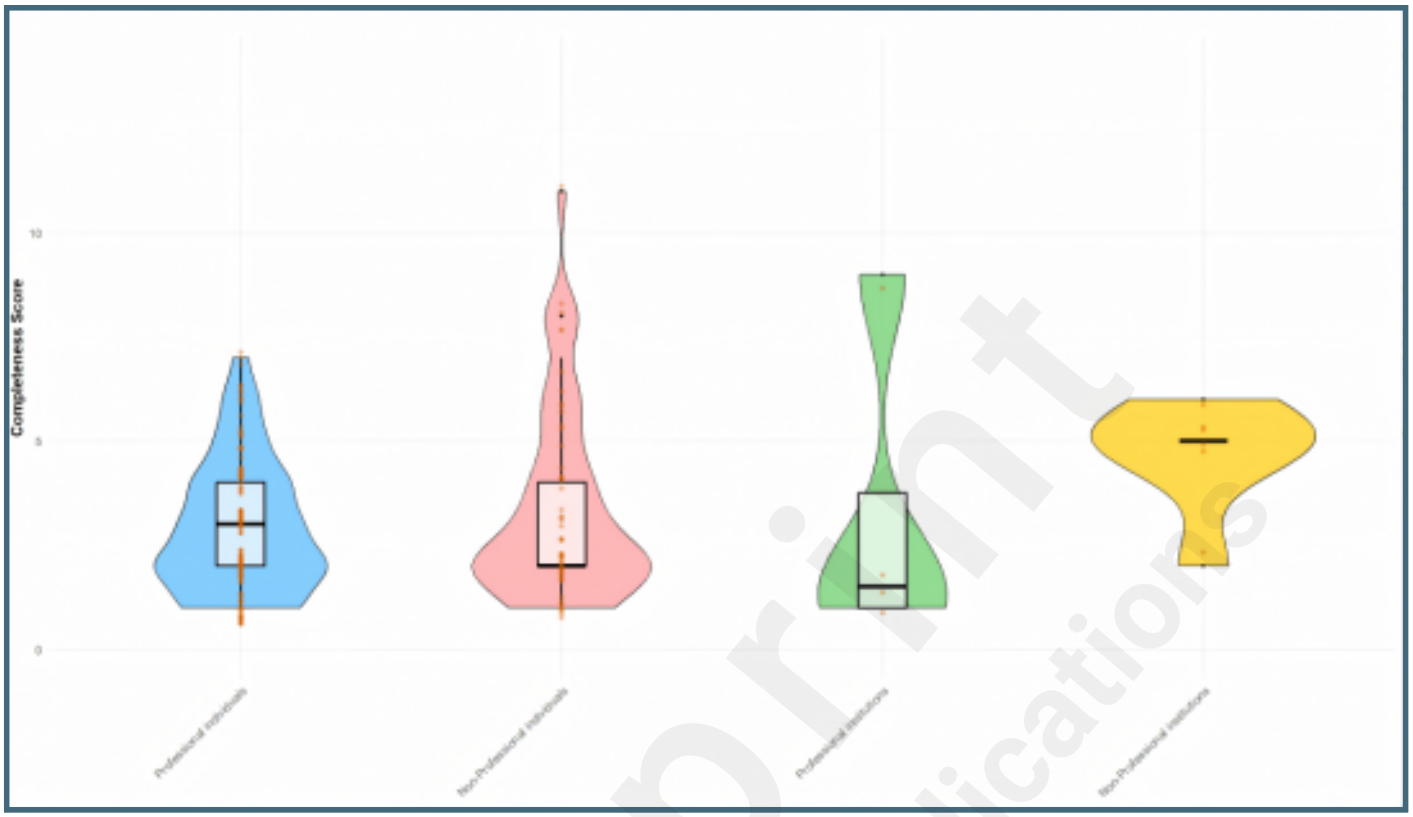
Percentage of video content.



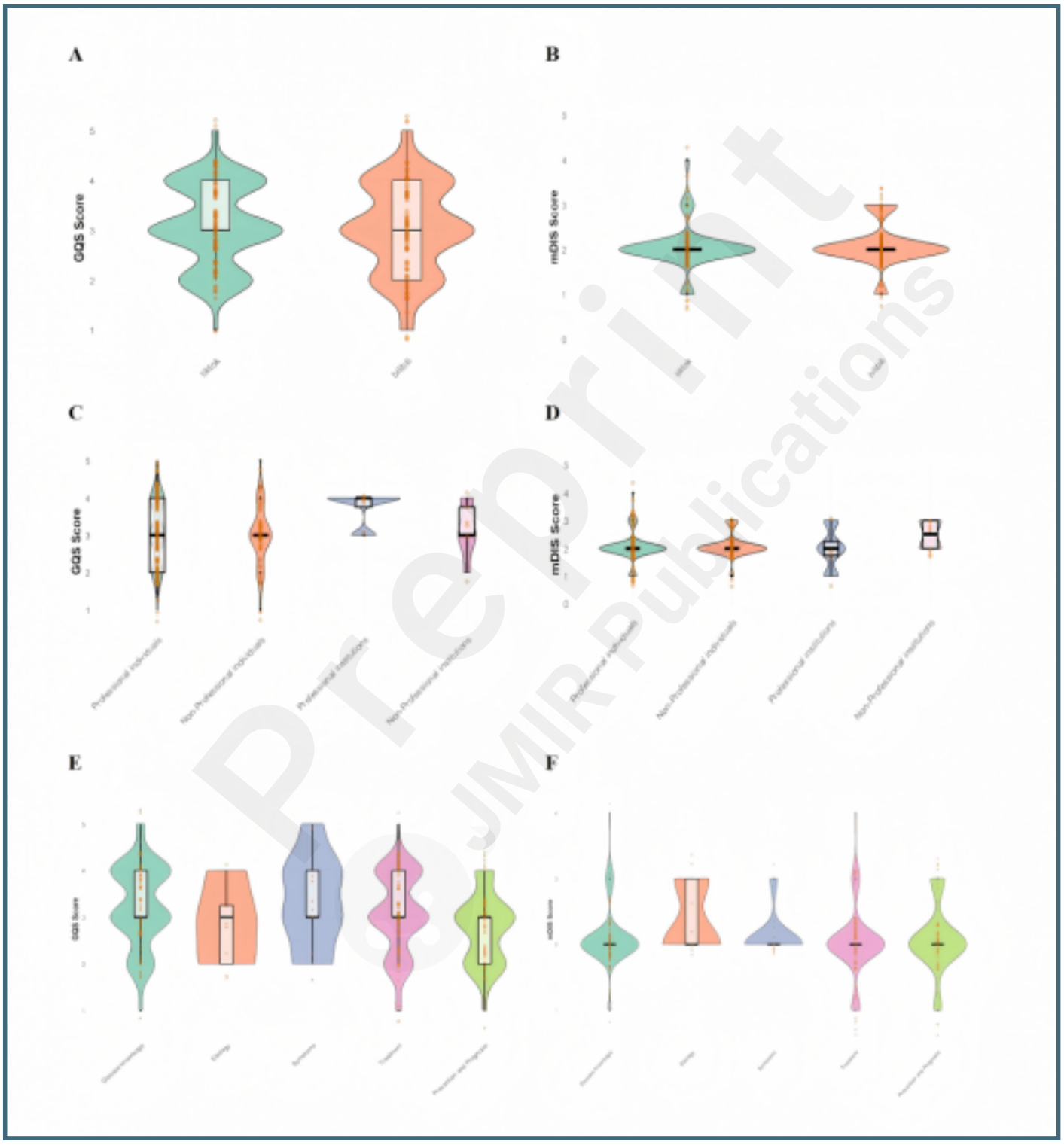
Multi-dimensional content quality assessment using radar charts.



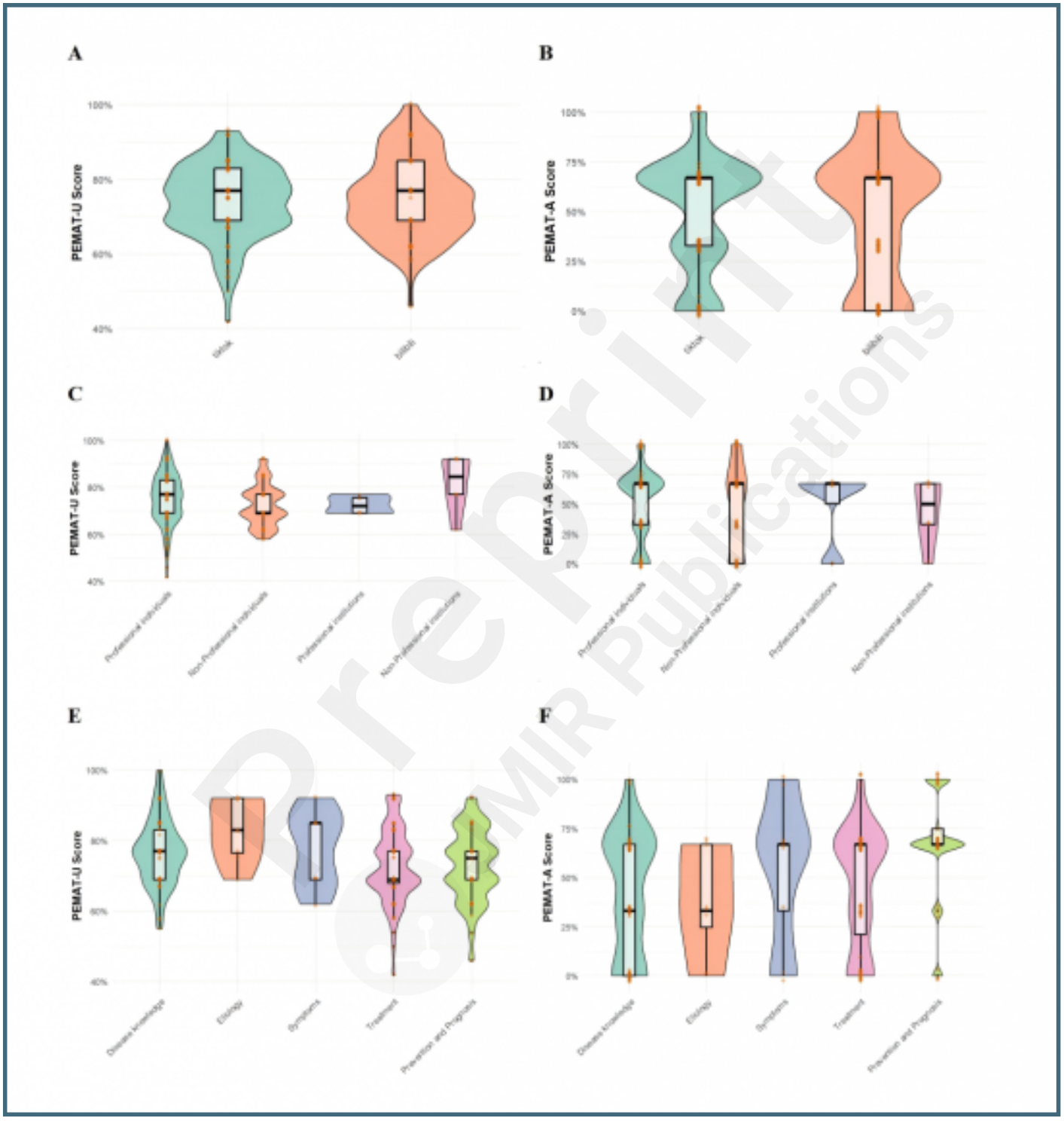
Probability density distribution comparison of content integrity composite scores.



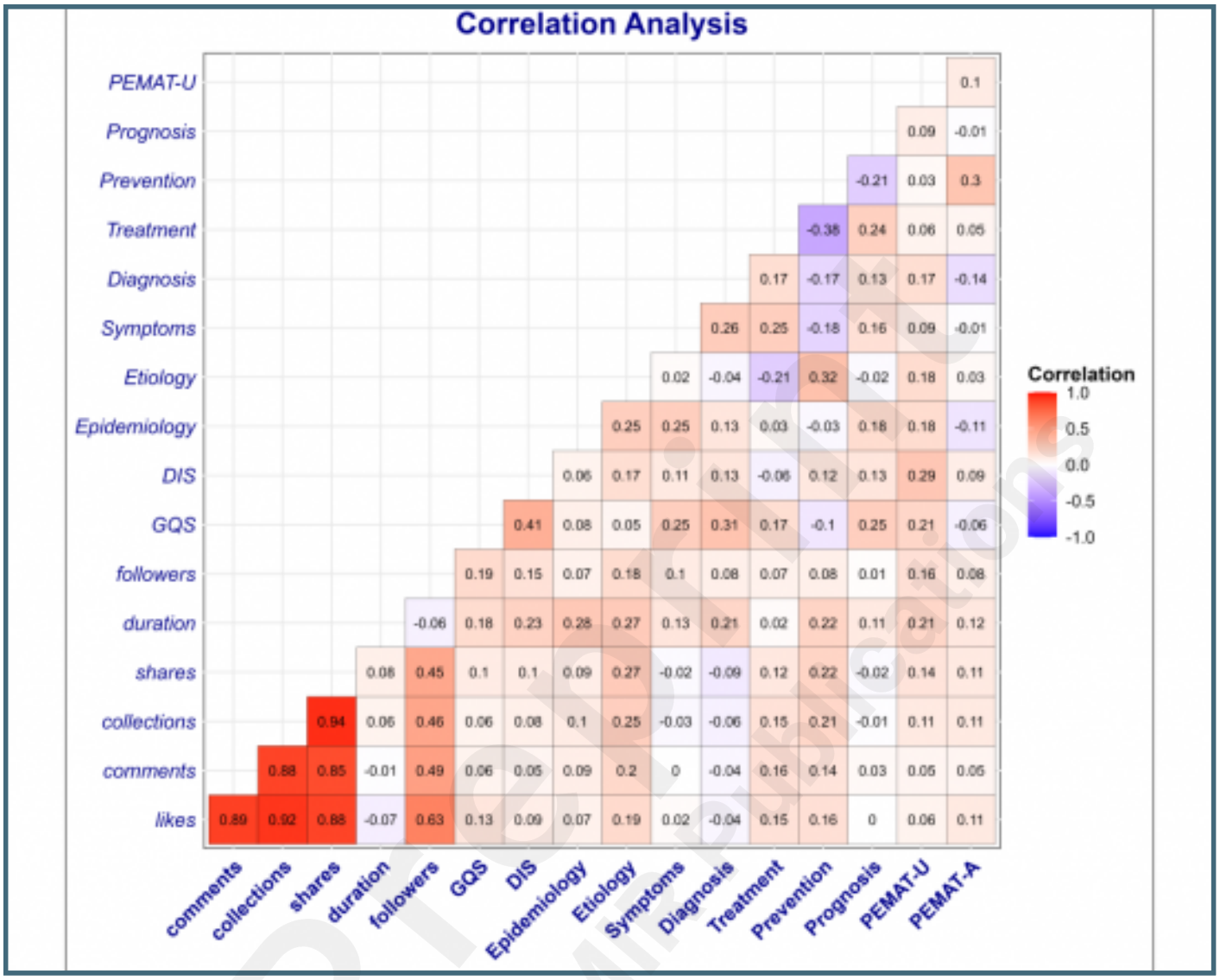
GQS and mDISCERN Scores (A)Comparison of Global Quality Scores (GQS) between TikTok and Bilibili videos.(B)Comparison of modified DISCERN (mDISCERN) scores between TikTok and Bilibili videos.(C)GQS scores across different video sources.(D)mDISCERN scores across different video sources.(E)GQS scores across different content categories.(F)mDISCERN scores across different content categories.



Comparative Analysis of Video Understandability and Actionability ?A?PEMAT-U scores of videos across platforms. (B)PEMAT-A scores of videos across platforms. (C)PEMAT-U scores of videos across sources. (D)PEMAT-A scores of videos across sources. (E)PEMAT-U scores of videos across content categories . (F)PEMAT-A scores of videos across content categories.



Correlation analysis.



Multimedia Appendixes

Uterine Fibroid Completeness Scoring Table.
URL: http://asset.jmir.pub/assets/c418a54ca66d2ac6bb10c8cea9ee54e4.doc

All tables.
URL: http://asset.jmir.pub/assets/de0bbceb3eb5568491074521f0528d37.xlsx