Research Square

Preprints are preliminary reports that have not undergone peer review.
They should not be considered conclusive, used to inform clinical practice,
or referenced by the media as validated information.

Quality and Reliability Assessment of Stoma-Related Educational Short Videos on TikTok:A cross-sectional study

Jianjie Zhang
School of Nursing, Kunming Medical University
Yajuan Wang
School of Nursing, Kunming Medical University
Chuang Zhao
School of Nursing, Kunming Medical University
Yu Fu
School of Nursing, Kunming Medical University
Zhaoyi Li
School of Nursing, Kunming Medical University
Qingmei Yu
School of Nursing, Kunming Medical University
Wenyan Peng
Midu County People's Hospital
Tao Shi
2840018774@qq.com

The Third Affiliated Hospital of Kunming Medical University (Yunnan Cancer Hospital, Yunnan Hospital of Peking University Cancer Hospital)

Research Article

Keywords: stoma, short videos, Health educational, health information, quality assessment, reliability

Posted Date: November 20th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-11445751/v1

License: This work is licensed under a Creative Commons Attribution 4.0 International License.
Read Full License

Additional Declarations: No competing interests reported.

Quality and Reliability Assessment of Stoma-Related Educational Short Videos on TikTok:A cross-sectional study

Jianjie Zhang [1 2], Yajuan Wang [1], Chuang Zhao [1], Yu Fu [1], Zhaoyi Li [1], Qingmei Yu [1], Wenyan Peng [3], Tao Shi [1 2] *,

[1]*School of Nursing, Kunming Medical University, Kunming, Yunnan 650500, China.

[2]The Third Affiliated Hospital of Kunming Medical University (Yunnan Cancer Hospital, Yunnan Hospital of Peking University Cancer Hospital), Kunming 650118, China)

[3]Intensive Care Unit, Midu County People's Hospital, Dali, Yunnan 675600, China.

*Corresponding Author :Tao Shi, E-mail:2840018774@qq.com

Abstract

Objective

Patients living with a stoma require ongoing health education to support effective self-management, and short-video platforms have become increasingly accessible sources of health information. However, the quality and reliability of stoma-related information on these platforms remain insufficiently evaluated. This study aimed to assess the quality and reliability of stoma-related short videos on TikTok.

Methods

Systematically search the top 100 videos on TikTok using the keywords “stoma, stoma care, stoma bag, stoma patient, stoma complications.” Evaluate the quality of each video using the DISCERN tool and the Global Quality Scale (GQS), and document video-related characteristics (likes, comments, saves, and shares).

Results

A total of 500 videos were evaluated, with 366 ultimately meeting the criteria and being included in the statistical analysis. with a median DISCERN score of 38 points (IQR: 31–46), indicating overall poor information quality. The Quality Score scale score distribution showed that most videos were of moderate quality (combined 2 and 3 scores accounted for 71%). Regarding interaction metrics, the median counts for likes, comments, shares, and saves were 235, 43.5, 31, and 52.5, respectively. Statistically significant differences existed in both DISCERN and GQS total scores across different publisher identities and video topics (all p-values < 0.001). Both DISCERN and Global Quality Score scale scores showed significant negative correlations with comment counts (r = -0.258, p<0.001; r = -0.175, p<0.001). Videos posted by medical professionals were 3.79 times more likely to be high-quality than those by general users (OR=3.79, 95% CI: 2.11-6.90).

Conclusions

The quality and reliability of stoma-related information on the TikTok short-video platform are subpar. Patients and caregivers should critically evaluate information sources. Healthcare professionals should actively engage in science communication initiatives on digital media platforms. By setting granular objectives to deliver in-depth explanations and integrating narrative medicine methodologies and techniques, they can enhance the professionalism and dissemination impact of health science content.

Keywords: stoma, short videos, Health educational, health information, quality assessment, reliability

Introduction

A stoma is an artificial opening created by surgically bringing a segment of the intestine, ureter, or other organ out of the abdominal cavity and suturing it to the abdominal wall, thereby replacing the original function of the anus or urethra for the passage of stool and urine. This procedure is a critical treatment modality for colorectal cancer, bladder cancer, and other conditions[1, 2]. According to statistics, the total number of stoma patients in China has exceeded one million and is rising rapidly [3]. Postoperative patients face a range of challenges, including stoma care, complication management and prevention, and lifestyle changes and adaptation [4, 5]. stoma care and management require a certain level of expertise, making it difficult for patients and their families to master and perform these tasks independently in a short period of time [6]. In recent years, with the widespread adoption of the concept of enhanced recovery after surgery and the shortening of the average length of hospital stay, stoma patients and their families are unable to fully master stoma care and

management skills during hospitalization, and they struggle to obtain effective ongoing guidance from healthcare professionals after discharge [7, 8]. Due to a lack of information regarding stoma care management, patients who are unable to effectively manage their stoma face a risk of stoma-related complications, such as moisture-induced dermatitis, infection, peristomal hernia, or prolapse, with an incidence ranging from 20% to 70% [9, 10]. Furthermore, changes in body image can lead to negative emotions such as low self-esteem and anxiety in stoma patients. Influenced by traditional Chinese cultural norms, topics related to excretion and body image are particularly sensitive. Due to fears of sudden incidents such as stoma leakage or odor, patients often voluntarily reduce contact with the outside world, resulting in varying degrees of social withdrawal [11, 12, 13], which severely impacts their quality of life.

In this era of rapid information growth driven by the widespread adoption of mobile internet, social media and online video platforms have become powerful tools for disseminating medical knowledge [14]. According to the latest statistics from the China Internet Network Information Center, as of December 2025, China had 1.125 billion internet users, with an internet penetration rate exceeding 80%. Among them, the number of short-video users reached 1.074 billion, accounting for 95.4% of the total internet user base [15]. Patients of nearly all age groups rely on short-video platforms as a key channel for accessing health information [16]. Surveys indicate that most stoma patients prefer to obtain stoma-related information via the internet [17]. TikTok (the Chinese version of TikTok), as one of the most influential short-video platforms in China, has a total user base exceeding 1.24 billion, with an average of 587 million daily active users [18]. Leveraging algorithm-driven personalized content recommendations, TikTok pushes over 48 million pieces of medical-related content daily, and the platform is widely regarded by users as a key source of health information [19]. However, inaccurate information may mislead patients into making incorrect decisions and even affect their treatment outcomes [20]. Numerous studies have evaluated the reliability and quality of medical information on

TikTok, covering conditions such as gallstones, lung cancer, diabetes, and osteoporosis [21, 22, 23, 24]. yet the reliability and quality of stoma-related information on TikTok remain unexplored. Therefore, this study systematically evaluated the reliability and quality of stoma-related educational short video content on the TikTok platform.

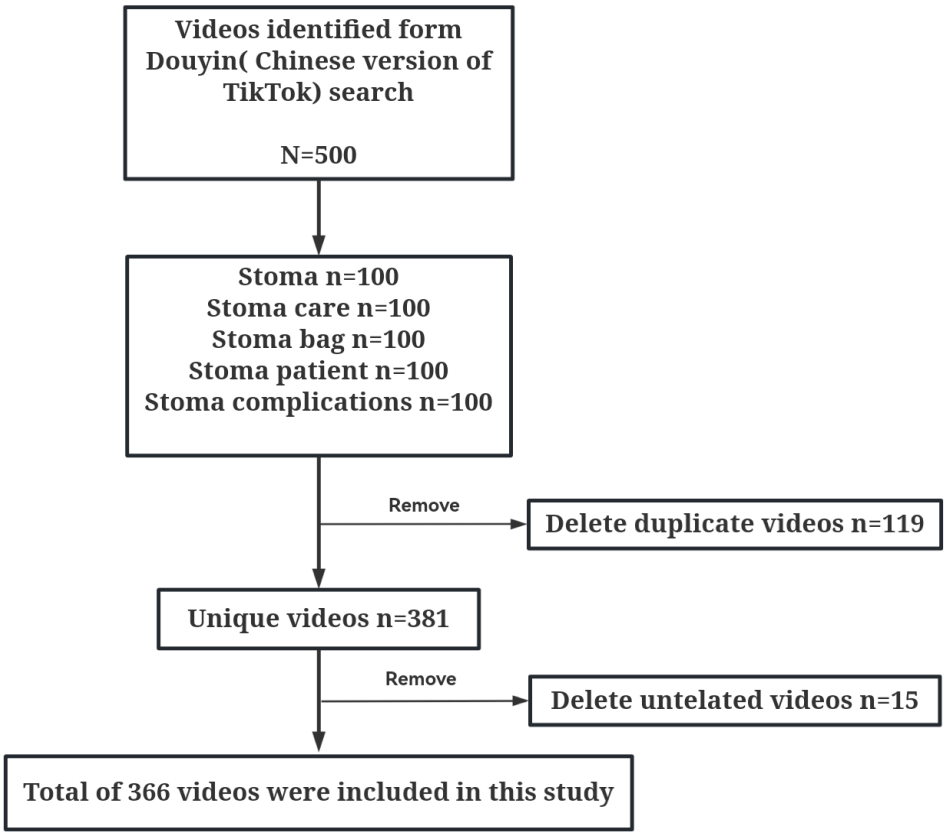
Methods

Search strategy

This study conducted a systematic video search on the TikTok (Chinese version of Douyin) short-video platform (version 36.8.0) from November 21 to 25, 2025. To ensure the search comprehensively covered the core dimensions of stoma health education information, this study selected five Chinese keywords: “造口”(stoma), “造口护理”(stoma care), “造口并发症”(stoma complications), “造口袋” (stoma pouch) and “造口人”ostomate, aiming to systematically cover the following five information dimensions: basic knowledge, practical care, complication management, care tools, and patient experiences [25, 26]. To simulate the actual search behavior of ordinary users and minimize bias caused by the platform’s personalized algorithms, all searches were conducted using a newly registered account with no linked personal information, and the platform’s default “Comprehensive” sorting method was used. All video searches were performed on the same device, with the device’s location services disabled during the search process. This study included the top 100 videos from the search results, totaling 500 initial samples. This sample size criterion was determined based on existing research indicates that analyzing more than 100 videos has negligible impact on overall conclusions[27, 28]. Ultimately, 366 videos meeting the criteria were included in the final statistical analysis. 134 videos were excluded for failing to meet inclusion criteria, including 119 duplicate videos and 15 videos

unrelated to the topic. To accurately reflect the information exposure ecosystem of Chinese stoma patients on the TikTok platform, the following inclusion and exclusion criteria were established: Inclusion criteria: (1) Chinese-language videos; (2) video content related to stoma topics. Exclusion criteria: (1) Videos with duplicate or highly similar content; (2) Videos that cannot be played normally or are silent;(figure 1)

Figure 1.



Search strategy and video filtering method.

Data Extraction

This study individually coded each retrieved video, subsequently extracting disease-related information from each video, including: Poster identity, upload date,

stoma type, username, video duration, number of days since upload (Date cutoff: November 25, 2025), number of likes, number of comments, number of shares, and number of saves. By publisher identity, they were categorized as: Healthcare professionals, Laypersons (patients, family members), News media, and Commercial promoters. Based on the journey of stoma patients, the video content is categorized into primary themes: Disease and Treatment Knowledge (Introduction to stoma Surgery, Overview of Ostomies), Core Care Skills and Supplies (stoma care, stoma care supplies introduction), Psychological Adaptation and Peer Support (daily life management, patient psychological support), Daily Life Management, Stoma Complications, Product Reviews and Commercial Promotion, Given the significant clinical importance of using appropriate stoma care products for patients, this study also included Product Reviews and Commercial Promotion videos in its analysis.

Quality assessment

To balance methodological rigor with clinical expertise, an international stoma therapist and a medical master's degree holder independently evaluated the video content quality using the DISCERN tool and GQS tool between November 21 to 25, 2025, after completing relevant assessment training. In cases of scoring discrepancies, a third evaluator—a Medical Doctor (MD) with expertise in stoma surgery and treatment (Cw-B)—served as an arbitrator. The Cw-B independently reassessed the disputed videos and provided final scores to minimize subjective bias. To minimize

evaluator bias, all assessors received standardized training in the use of the DISCERN and Quality Score scale (GQS) scales prior to conducting the assessment. The training focused on the specific definitions of each item, scoring criteria, and interpretation of common points of ambiguity. To assess and ensure inter-rater reliability, two raters first independently pre-scored 30 stoma-related videos (not included in the formal analysis) post-training. Results demonstrated excellent reliability (DISCERN score ICC = 0.92; GQS grade weighted Kappa = 0.75), indicating high consistency in evaluators' understanding and application of the tool. Subsequently, evaluators engaged in in-depth discussions regarding items with discrepancies in the pre-scoring until consensus was reached, further standardizing scoring criteria.

The DISCERN instrument comprises 16 items and employs two scoring methods: (1) Video quality is categorized as poor, fair, or excellent based on the individual score (1–5 points) for Item 16; (2) Classifying videos as poor, average, good, or excellent based on the total score from items 1–15 (15–75 points). To meet the needs of multidimensional detailed analysis and parameter statistics, this study primarily uses the total score from items 1–15 as a continuous quality indicator [29]. The GQS scale employs a 5-point scale to assess overall video quality, ranging from Poor (1) to Excellent (5) [30].

Statistical Analysis

Data analysis was conducted using SPSS 26.0. Descriptive statistics were applied to basic video characteristics (publisher identity, video topic, stoma type) and continuous

variables (video duration, interaction metrics, quality scores). The Kruskal-Wallis H test was used to compare differences in total DISCERN and GQS scores across publisher identities and video topics. Where significant differences existed, pairwise comparisons were performed using the Dunn-Bonferroni method. Spearman's correlation analysis was used to examine the relationship between quality scores and interaction metrics (likes, comments, shares, saves). Finally, multiple linear regression models were established with DISCERN total scores and GQS total scores as dependent variables. Variance inflation factors (VIF) were used to diagnose multicollinearity (all VIF < 5). The significance level was set at $\alpha = 0.05$.

Results

Video characteristics

Among all collected video data, the primary source of videos was healthcare professionals (164/366, 46%), followed by laypersons (155/366, 42%). Video content primarily focused on two themes: "Core Nursing Skills and Supplies (Stoma Care and Stoma Care Product Introduction)" (138/366, 38%) and "Psychological Adaptation and Peer Support (Experience Sharing and Psychological Support for Stoma Patients)" (111/366, 30%). The vast majority of videos (337/366, 92%) involved intestinal stomas. The shortest video lasted 7 seconds, while the longest reached 1,107 seconds, with an overall average duration of 88.8 seconds. The earliest video was

published on December 10, 2021—1,446 days prior to our data collection. The most recent video was released on November 22, 2025, just 3 days before our data collection. These videos garnered up to 51,000 shares and as few as 0 shares. The highest number of comments was 13,000, while the lowest was 0. The highest number of saves was 14,000, with the lowest being 0. Regarding engagement metrics, the median (quartile) values for likes, comments, shares, and saves were 235.00 (78.00, 596.00), 43.50 (12.00, 138.00), 31.00 (7.00, 125.00), and 52.50 (13.00, 172.00) (Table 1).

Table 1. Basic characteristics and descriptive statistics

Characteristic	N = 366[1]
Video length (minutes), Median (IQR)	1.48 (2.22-0.87,)
Time since upload (months), Median (IQR)	4.03 (11.43-1.97,)
Number of likes, Median (IQR)	235.00 (596.00-78.00)
Number of comments, Median (IQR)	43.50 (138.00-12.00)
Number of shares, Median (IQR)	31.00 (125.00-7.00)
Number of collections, Median (IQR)	52.50 (172.00-13.00)
DISCERN Score, Median (IQR)	38.00 (46.00-31.00)
GQS Score	
1	42 (11%)
2	131 (36%)
3	127 (35%)
4	47 (13%)
5	19 (5.2%)

Video Quality

The median (IQR) DISCERN score for the 366 evaluated videos was 38 (46-31). The GQS score showed a skewed distribution, with the majority of videos concentrated at score levels 2 (36%, 131/366) and 3 (35%, 127/366), further confirming that the overall quality and reliability of the videos need improvement. Videos published by healthcare professionals received the highest content quality scores (DISCERN median 44, GQS median 3), but their engagement metrics were moderate. In contrast, videos published by laypersons had lower content quality scores, with a DISCERN median (IQR) of 32 (39-27), yet they demonstrated the strongest user engagement (median comments 90, median collections 63), reflecting a user preference for authentic experience sharing and emotional resonance. Among different video themes, videos on Daily life management and Stoma-related complications received the highest DISCERN scores, with a median (IQR) of 48 (52.5-39), indicating moderate video quality and reliability that relies more on professional input. Videos on Psychological adaptation and peer support had a DISCERN median (IQR) of 30 (35-26), suggesting poorer video quality and reliability.(Table 1 and 2).

Table 2. Descriptive statistics for TikTok videos of different sources and contents

Variables	DISCERN score, Median (IQR)	GQS score, Median (IQR)	Number of likes, Median (IQR)	Number of comments, Median (IQR)	Number of shares, Median (IQR)	Number of collections, Median (IQR)
Uploader identity (n=366)						
Healthcare professionals (167/366,46%）	44(51-37)	3(4-2.5)	229(436-99.5)	23(63.5-8.5)	32(93-7.5)	57(152-18）

Laypersons （155/366,42%）	32(39-27)	2(3-1)	289(967.5-133)	90(343.5-34)	42(205-10)	63(234.5-15.5)
Commercial promoters (42/366,11%)	36(39.75-31.2 5)	2(3-2)	57.5(239.5-21. 75)	10(37.25-2)	7.5(42.25-3)	15.5(52.25-4.2 5)
News media (n=2)	55(58-52)	4(4.5-3. 5)	1428(2126-73 0)	153(229/5-76.5)	24(351.5-13 0.5)	282(423-141)
Stoma type (n=366)						
Enter (337/366,92%)	38(46-31)	3(3-2)	236(546-79)	42(127-12）	31（121-7）	53(172-14)
Urostomy (15/366,4%)	37.5(48-33.25)	3(3-2)	219.5(3091.5-152.25）	50.5(252.25-22 .5）	47(309.25-8 .75）	89.5(251-15.5）
Not classified (14/366,4%)	33(39-30)	2(3-2)	147(2855-29）	24(330-6）	19(72-5）	21(49-5）
Video primary theme (n=366)						
Disease and treatment knowledge (43/366,12%)	43(51-37)	3(4-2)	207(288.5-101 .5）	21（54-7.5）	31(47-4)	55(96-14)
Core nursing skills and supplies (138/366,38%)	38(45-32.25)	3(3-2)	233(555-54.25)	47.5(120.75-10 .25)	48.5(200.5-6.25）	64.5(219.75-12 .25）
Psychological adaptation and peer support (111/366,30%)	30(35-26)	2(2-1)	339(2611-155 ）	121(512-32.5）	25(205-9）	49(363.5-16）
Daily life management (23/366,6%)	48(52.5-39)	3(4-3)	92(202-33）	11(63-5）	11(23-2)	11(80.5-3.5）
Stoma-related complications (40/366,11%)	45(53.25-41.7 5)	3(4-3)	228(388.5-116 .25）	205(29.5-12)	41(116-12)	58(117.75-26.5 ）
Product reviews and commercial promotions (11/366,3%)	36(40-32)	2(2-2)	64(115.5-38）	29(35-4.5）	10(24-5.5）	12(33-8)

Comparison of Video Quality Scores Across Different Groups

The Kruskal-Wallis test revealed significant differences in both DISCERN and GQS scores across different publisher identities ($P< 0.001$) (Table 3). Subsequent post-hoc pairwise comparisons with Dunn-Bonferroni correction showed that videos published

by healthcare professionals had significantly higher DISCERN and GQS scores compared to those published by "laypersons" and "commercial entities/news media" (all adjusted $P< 0.001$).

Regarding video topics, the "Disease and Treatment Knowledge " and "Core Nursing Skills and Supplies " topics had significantly higher DISCERN scores compared to the "Psychological Adaptation and Peer Support " topic (all adjusted $P< 0.001$). Furthermore, the "Daily Life Management " and "Stoma Complications " topics showed significant differences in both quality scores compared to several other topics (all adjusted $P< 0.05$) (Table 3 and Figure 2).

Table 3. Intergroup Comparison of Video Quality Scores Across Different Groups

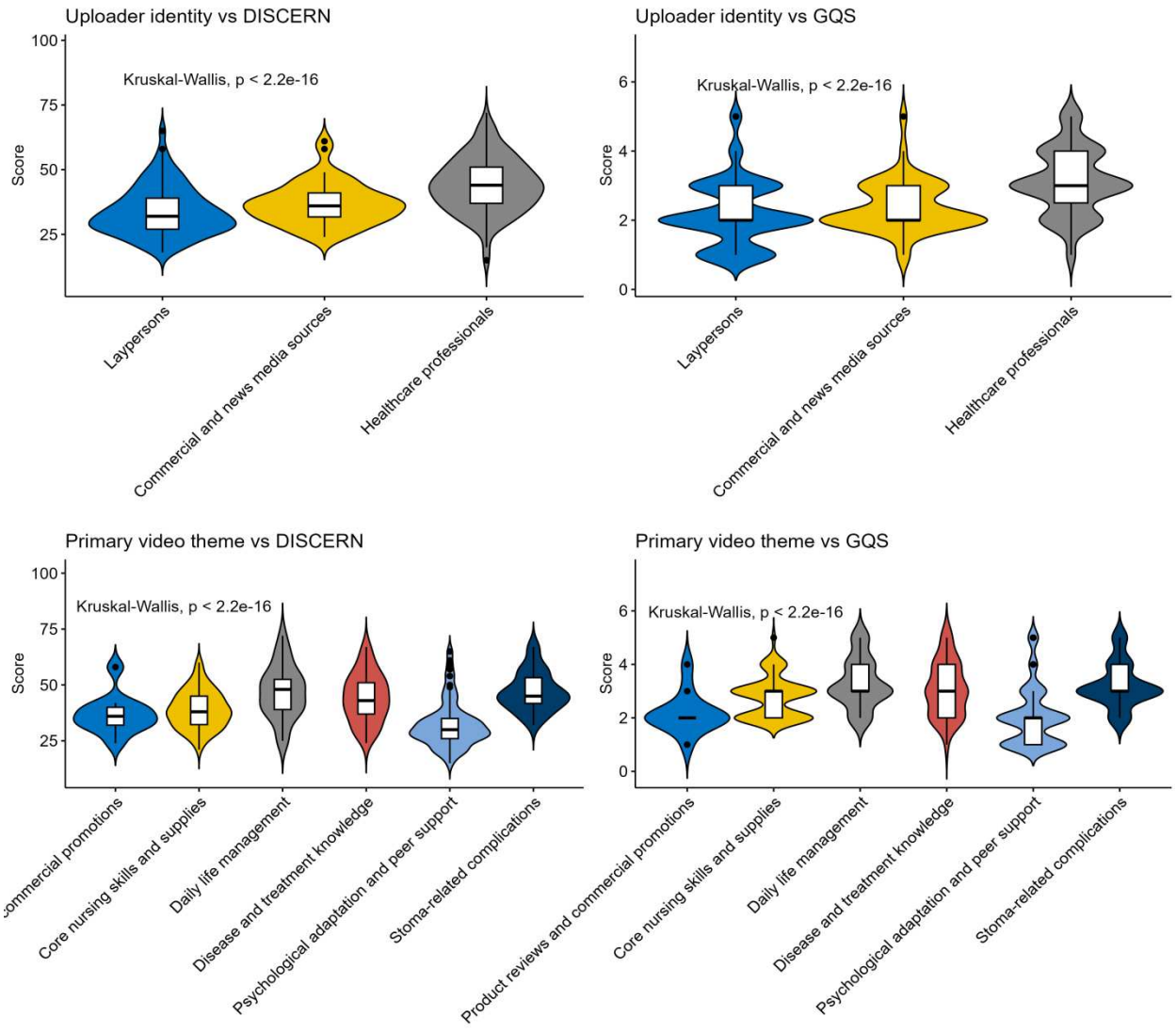
Metric	**Group Variable**	**Test Method**	***P*-value**
DISCERN Score	Uploader identity	KW (Non-normal)	<0.001
GQS Score	Uploader identity	KW (Non-normal)	<0.001
DISCERN Score	Primary video theme	KW (Non-normal)	<0.001
GQS Score	Primary video theme	KW (Non-normal)	<0.001

Table 4. Post-hoc pairwise comparisons

Group 1	**Group 2**	**Adj. *P*-value**	**Post-hoc Method**	**Metric**
Laypersons	Healthcare professionals	<0.001	Dunn-Bonferroni	DISCERN Score
Commercial and news media sources	Healthcare professionals	<0.001	Dunn-Bonferroni	
Laypersons	Healthcare professionals	<0.001	Dunn-Bonferroni	GQS Score
Commercial and news media sources	Healthcare professionals	<0.001	Dunn-Bonferroni	

Group 1	Group 2	Adj. *P*-value	Post-hoc Method	Metric
Core nursing skills and supplies	Psychological adaptation and peer support	<0.001	Dunn-Bonferroni	
Core nursing skills and supplies	Stoma-related complications	<0.001	Dunn-Bonferroni	
Daily life management	Psychological adaptation and peer support	<0.001	Dunn-Bonferroni	DISCERN Score
Disease and treatment knowledge	Psychological adaptation and peer support	<0.001	Dunn-Bonferroni	
Psychological adaptation and peer support	Stoma-related complications	<0.001	Dunn-Bonferroni	
Product reviews and commercial promotions	Daily life management	0.022	Dunn-Bonferroni	
Product reviews and commercial promotions	Stoma-related complications	0.014	Dunn-Bonferroni	
Core nursing skills and supplies	Psychological adaptation and peer support	<0.001	Dunn-Bonferroni	
Daily life management	Psychological adaptation and peer support	<0.001	Dunn-Bonferroni	GQS Score
Disease and treatment knowledge	Psychological adaptation and peer support	<0.001	Dunn-Bonferroni	
Psychological adaptation and peer support	Stoma-related complications	<0.001	Dunn-Bonferroni	

Figure 2.



Distribution of Video Quality Scores by Publisher and Topic (Violin Plot)

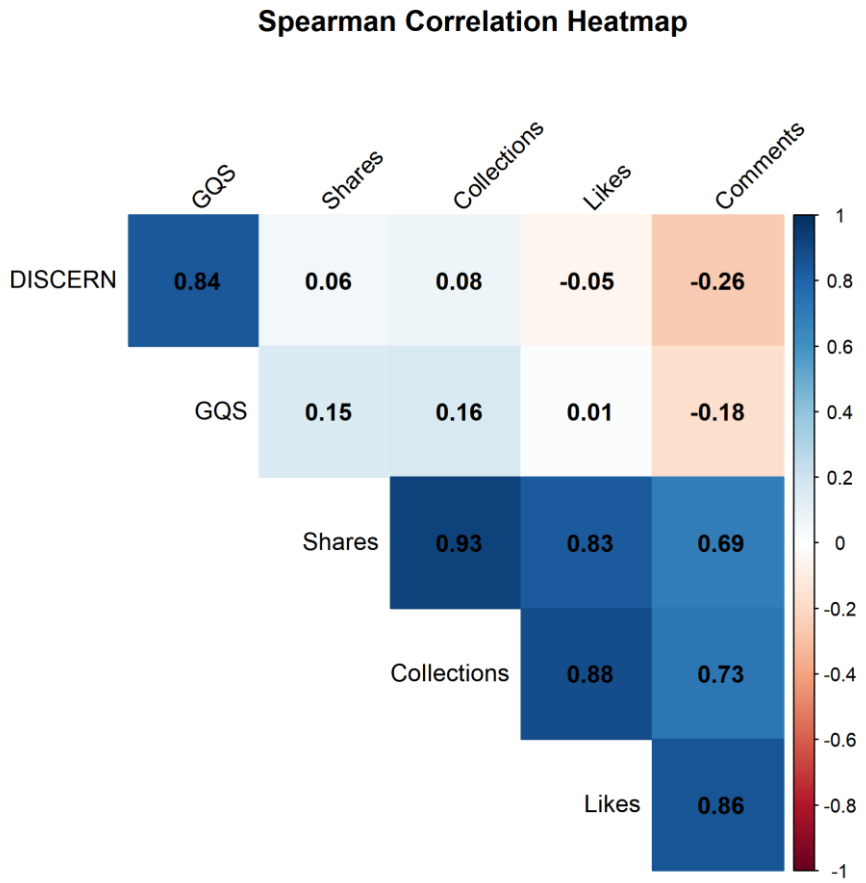
Note: The figure illustrates the distribution density, median, and interquartile range.

P-values were calculated using the Kruskal-Wallis test.

Correlation Between Video Quality Scores and Engagement Metrics

Spearman correlation analysis revealed significant but weak correlations between video quality scores and certain interaction metrics. Notably, both the DISCERN score and the GQS score showed significant negative correlations with the number of comments (r = -0.258, p< .001; r = -0.175, p< 0.001, respectively). In contrast, the GQS score was positively correlated with the number of shares (r = 0.151, p= 0.004) and the number of collections (r = 0.164, p= 0.002). No significant correlation was found between either quality score and the number of likes (Figure3 and Table 5).

Figure 3.



Heatmap of Correlation Between Video Quality and Engagement Metrics

Note: Increasing color darkness signifies stronger correlations. Values denote Spearman's rank correlation coefficients.

Table 5. Correlation Analysis Between Video Quality Scores and Interaction Metrics

Quality Score	**Interaction Metric**	**Type**	**Coef (r)**	***P*-value**
DISCERN Score	Number of likes	spearman	-0.054	0.302
DISCERN Score	Number of comments	spearman	-0.258	<0.001
DISCERN Score	Number of shares	spearman	0.057	0.276
DISCERN Score	Number of collections	spearman	0.077	0.140

Quality Score	Interaction Metric	Type	Coef (r)	*P*-value
GQS Score	Number of likes	spearman	0.012	0.822
GQS Score	Number of comments	spearman	-0.175	<0.001
GQS Score	Number of shares	spearman	0.151	0.004
GQS Score	Number of collections	spearman	0.164	0.002

Multivariate Regression Analysis of Factors Affecting Video Quality

To control for confounding factors, multiple linear regression analyzes were conducted with the DISCERN score and the GQS score as dependent variables, respectively.

The regression model for the DISCERN score indicated that, after adjusting for other variables, publisher identity and video topic were independent factors influencing the DISCERN score. Compared to videos from laypersons, those published by healthcare professionals had an average DISCERN score that was 6.3 points higher (95% CI: 4.0–8.6, $p < 0.001$). Compared to the reference group (product reviews and commercial promotion), videos with the topics "Disease and Treatment Knowledge", "Daily Life Management", and "Stoma Complications" had significantly higher DISCERN scores ($p< 0.05$). Additionally, video duration was a significant positive predictor of the DISCERN score (Beta = 1.8, $p< 0.001$). Collinearity diagnostics showed that all generalized variance inflation factor (GVIF) values were below 2.5, indicating no severe multicollinearity.

The regression model for the GQS score yielded similar results. Healthcare professional identity (compared to laypersons, Beta = 0.61, $p< 0.001$), the topics

"Disease and Treatment Knowledge", "Core Nursing Skills and Supplies", "Daily Life Management", and "Stoma Complications", as well as longer video duration (Beta = 0.17, $p< 0.001$), were all significant positive predictors of the GQS score (Table 6, Table 7).

Table 6. DISCERN Scores Linear Regression

Characteristic	**Beta**	**95% CI**	***p*-value**	**GVIF**	**Adjusted GVIF[1]**
Uploader identity				2.0	1.2
Laypersons	—	—			
Commercial and news media sources	4.2	0.74, 7.6	0.017		
Healthcare professionals	6.3	4.0, 8.6	<0.001		
Primary video theme				2.2	1.1
Product reviews and commercial promotions	—	—			
Core nursing skills and supplies	3.5	-2.6, 9.7	0.3		
Daily life management	11	4.2, 19	0.002		
Disease and treatment knowledge	7.4	0.56, 14	0.034		
Psychological adaptation and peer support	-0.06	-6.4, 6.3	>0.9		
Stoma-related complications	10	3.3, 17	0.004		
Video length (minutes)	1.8	1.2, 2.4	<0.001	1.1	1.0
Time since upload (months)	-0.08	-0.16, 0.01	0.077	1.1	1.0

[1]GVIF^[1/(2*df)]

Abbreviations: CI = Confidence Interval, GVIF = Generalized Variance Inflation Factor

Residual normality $P= 0.016$. Reference groups: Laypersons; Product reviews and commercial promotions.

Characteristic	Beta	95% CI	*p*-value	GVIF	Adjusted GVIF[1]
Uploader identity				2.0	1.2
Laypersons	—	—			
Commercial and news media sources	0.34	0.01, 0.66	0.041		
Healthcare professionals	0.61	0.39, 0.83	<0.001		
Primary video theme				2.2	1.1
Product reviews and commercial promotions	—	—			
Core nursing skills and supplies	0.66	0.08, 1.2	0.027		
Daily life management	1.2	0.49, 1.9	<0.001		
Disease and treatment knowledge	0.82	0.17, 1.5	0.013		
Psychological adaptation and peer support	0.22	-0.38, 0.82	0.5		
Stoma-related complications	0.97	0.31, 1.6	0.004		
Video length (minutes)	0.17	0.12, 0.23	<0.001	1.1	1.0
Time since upload (months)	-0.01	-0.02, 0.00	0.087	1.1	1.0

[1]GVIF^[1/(2*df)]

Abbreviations: CI = Confidence Interval, GVIF = Generalized Variance Inflation Factor

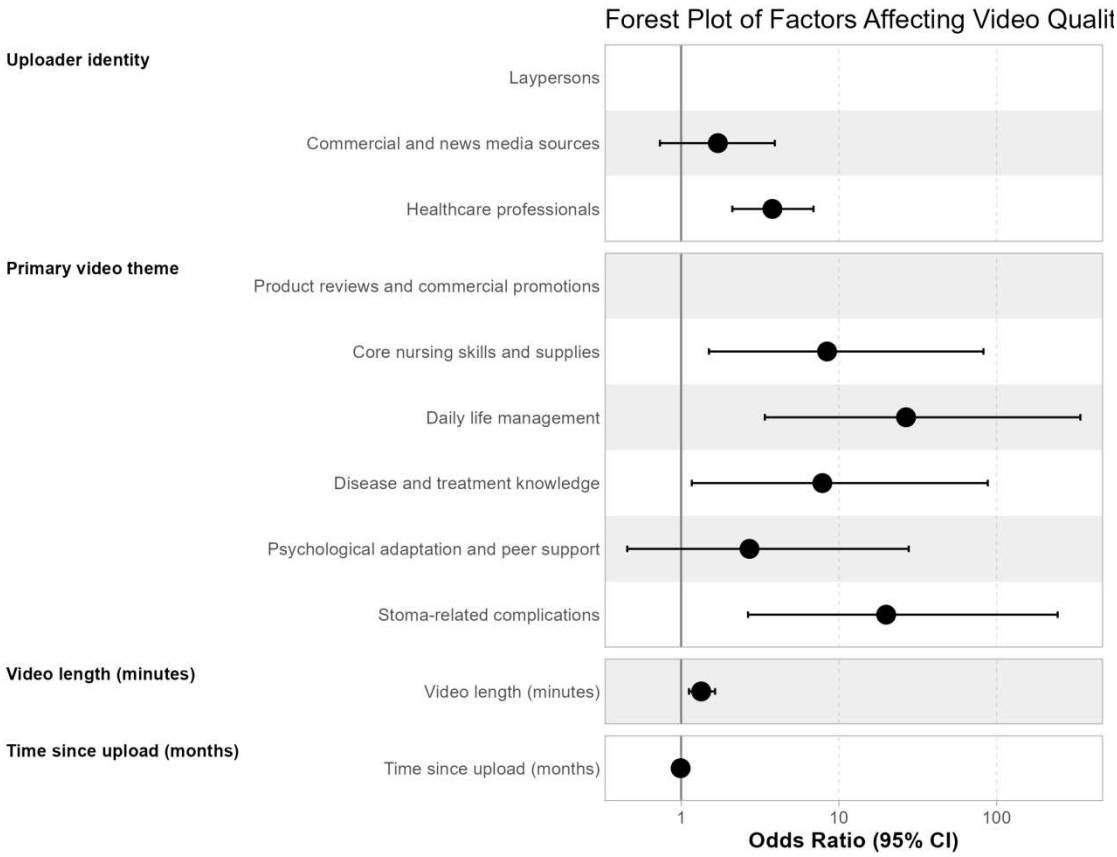
Table 7. GQS Scores Linear Regression

Residual normality *P*=0.000. Reference groups: Laypersons; Product reviews and commercial promotions

Logistic Regression Analysis of Factors Influencing High-Quality Video

Logistic regression analysis was performed with video quality as the dependent variable, which was defined as a binary outcome (high/low) based on the GQS score. The results (Table 6 and Figure 4) further confirmed the aforementioned findings. The odds ratio (OR) for videos published by healthcare professionals being high-quality was 3.79 times that of videos published by laypersons (95% CI: 2.11–6.90). Regarding video topics, the "Daily Life Management" (OR = 26.7, 95% CI: 3.40–340) and "Stoma Complications" (OR = 19.9, 95% CI: 2.65–244) topics had the highest odds of being high-quality. For each additional minute of video duration, the odds of being a high-quality video increased by 34% (OR = 1.34, 95% CI: 1.12–1.64) (Figure 4; Table 8).

Figure 4.



Logistic Regression Forest Plot of Influencing Factors

Note: Odds ratio estimates are shown by the points, with their 95% confidence intervals indicated by the horizontal lines. Confidence intervals that do not intersect the vertical line (OR = 1) imply statistical significance.

Table 8. Logistic Regression Analysis

Characteristic	Beta	95% CI	OR	95% CI	P-value
Uploader identity					<0.001
Laypersons	—	—	—	—	
Commercial and news media sources	0.54	-0.31, 1.4	1.71	0.73, 3.92	
Healthcare professionals	1.3	0.75, 1.9	3.79	2.11,	

Characteristic	Beta	95% CI	OR	95% CI	P-value
				6.90	
Primary video theme					<0.001
Product reviews and commercial promotions	—	—	—	—	
Core nursing skills and supplies	2.1	0.41, 4.4	8.42	1.50, 82.5	
Daily life management	3.3	1.2, 5.8	26.7	3.40, 340	
Disease and treatment knowledge	2.1	0.16, 4.5	7.86	1.17, 87.9	
Psychological adaptation and peer support	1.0	-0.79, 3.3	2.71	0.46, 27.7	
Stoma-related complications	3.0	0.98, 5.5	19.9	2.65, 244	
Video length (minutes)	0.29	0.11, 0.50	1.34	1.12, 1.64	<0.001
Time since upload (months)	-0.01	-0.03, 0.02	0.99	0.97, 1.02	0.5

Abbreviations: CI = Confidence Interval, OR = Odds Ratio

Reference groups: Laypersons; Product reviews and commercial promotions

Discussion

Research findings indicate that on the TikTok platform, video topics have a significant impact on information quality and reliability. Topics involving hard knowledge or specific skills—such as “disease and treatment knowledge,” “daily life management,” and “stoma complications”—typically receive higher ratings. This may be attributed to the fact that such content generally requires demonstrable skills, clear step-by-step instructions, and factual knowledge, which professionals are better equipped to provide accurately [31]. Conversely, videos in the “product reviews and

commercial promotion" category had the lowest quality. This suggests that their content may be driven by commercial interests and carries a risk of misinformation; patients and family members using TikTok to access stoma-related health information should be advised to exercise caution and discernment. Notably, topics related to "psychological adaptation and peer support" generally received low scores, which may reflect that current content in this area largely remains at the level of sharing personal experiences, lacking the integration of professional and systematic knowledge on psychological intervention.

An interesting finding that challenges the current "short-form video paradigm" is that, on the TikTok platform, video length shows a significant positive correlation with information quality scores. This finding stands in stark contrast to the prevailing industry trend that "shorter is better." According to statistics, the average length of currently popular videos has shrunk to approximately 40 seconds [32]. However, the results of this study indicate that, in the realm of health information on the TikTok platform, longer videos allow creators to provide more detailed explanations, clarify complex concepts, and offer sufficient background information—elements that contribute to the creation of more comprehensive and educational content. This also critically highlights that an excessive pursuit of brevity may come at the expense of informational accuracy and completeness. Based on this, this study proposes a specific strategy for science popularization video creators on the TikTok platform, : they may consider breaking down a complex topic into a series of short episodes, with each episode focusing on a specific aspect. This approach not only aligns with the platform's dissemination characteristics but also systematically provides high-quality information, thereby more effectively meeting the in-depth learning needs of stoma patients [33, 34].

The study findings reveal a complex relationship between video quality and audience engagement on the TikTok platform. Of particular note is the consistent negative correlation between two quality metrics and the number of comments. This suggests

that, for Chinese-language stoma-related videos, high-quality, authoritative content produced by professionals—due to its clear and reliable information—may reduce ambiguity and uncertainty, thereby limiting the need for controversial discussions or questions in the comments section [35, 36]. Conversely, videos containing erroneous, controversial, or highly emotional content are more likely to provoke user skepticism, debate, or emotional outbursts, thereby driving up the number of comments. This serves as a warning to Chinese stoma patients and researchers that the volume of comments is a negative indicator of information quality and may even be negatively correlated with the quality of science popularization videos.

Furthermore, the GQS score is positively correlated with the number of shares and saves, consistent with previous research findings [37]. The overall quality and recommendation value of GQS scores align more closely with users' practical perceptions. Users tend to save and share content they deem "useful" for themselves or others [38]. This "save-share" behavior can be viewed as an endorsement of a video's practical value, suggesting that on the TikTok platform, high-quality information—even if it does not spark widespread discussion—still holds significant dissemination and retention value among the target audience.

In addition to quantitative indicators, the findings observed during the data collection process in this study offer profound insights for optimizing health communication strategies. This study reveals a key paradox: although videos posted by healthcare professionals received the highest objective quality scores, the vast majority (9 out of 10, or 90%) of the content that generated the highest levels of emotional engagement (such as over 10,000 likes) came from personal life narratives shared by stoma patients. By authentically portraying the struggles, courage, and daily realities of adapting to the condition, these narrative videos provide viewers with irreplaceable emotional support and a strong sense of community belonging [39, 40]. Underlying this phenomenon are the profound and unmet psychosocial needs of the stoma patient population in China. Changes in bodily function and concerns about leakage and odor

often lead to intense feelings of stigma, low self-esteem, and social withdrawal [10, 41]. Within the context of traditional Chinese culture, topics related to excretion and body image are particularly sensitive; people are often too embarrassed to speak openly about them, which further deepens the suppression of these emotions. Consequently, the need for emotional resonance and community connection among patients and caregivers may be just as strong as their need for objective knowledge. Patient narrative videos with high engagement levels provide a crucial "outlet" and window into these repressed emotions [41, 42]. However, this does not imply that the dissemination of professional knowledge should take a backseat to emotional narratives. On the contrary, it points toward a path of integration. For example, a video posted by healthcare worker "Li Qingchun" (which received 40,000 likes and 14,000 shares) serves as a successful model: it employs a progressive "narrative-empathy-education" structure, beginning with a real-life story to establish an emotional connection, then providing psychological support, and finally seamlessly integrating rigorous scientific knowledge, thereby achieving excellence in both content quality and dissemination effectiveness. In summary, future health communication should not be merely about knowledge dissemination. The core insight of this study is that healthcare professionals on TikTok platform can proactively adopt the methods of narrative medicine to embed authoritative knowledge within authentic, empathetic stories, thereby achieving a synergy between "scientific rigor" and "emotional warmth" [43, 44].

On the TikTok platform, "Core Nursing Skills and stoma Care Products" is the most prevalent topic (138 out of 366, or 38%), reflecting the pressing needs of stoma patients in China. However, most content tends to be homogeneous, focusing on demonstrations of stoma bag changes and lacking depth. While this "breadth" of coverage provides patients with basic learning models, it falls short in terms of "depth." Future content creation could explore a shift from merely "showing what to do" to "explaining why and how." Drawing inspiration from high-quality, highly engaging videos on TikTok, a "small but deep" approach could be adopted—that is,

identifying a specific nursing challenge (such as managing leakage) and providing a focused, in-depth explanation. This strategy can effectively enhance the quality of information, meet patients' growing needs for personalized and advanced care, and avoid redundant investment in superficial content.

Based on the above strategies, this study proposes the following course of action: When stoma patients and their families seek health information on TikTok, they should prioritize videos posted by certified healthcare professionals that focus on specific nursing challenges and are of longer duration, as such videos provide a more in-depth and detailed explanation of procedural details and precautions. Additionally, content presented through narrative or storytelling is easier to understand and learn from. Chinese healthcare professionals and medical institutions should proactively establish certified professional accounts and create educational content that combines depth with empathy to fill critical information gaps; recommendations for patients can also serve as a focus for content creation. At the same time, social media platforms bear a public responsibility to improve the information ecosystem. They can prioritize the display of high-quality professional content by implementing quality rating systems and optimizing algorithms. Only through multi-stakeholder collaboration can we collectively build a healthy information ecosystem that provides both reliable knowledge and emotional support.

limitations

This study has several limitations. First, the study focused solely on TikTok for content evaluation and did not include other short-video platforms such as YouTube or Bilibili. As a Chinese-based short-video platform, TikTok has a unique content ecosystem, recommendation algorithm, and user behavior; therefore, the findings of this study may reflect only the characteristics of the TikTok platform, and the representativeness and generalizability of the results may be somewhat limited.

Second, this study included only Chinese-language videos, and its conclusions are applicable only to the Chinese stoma patient population and the Chinese short-video content ecosystem. Furthermore, the DISCERN and GQS assessment tools used in this study primarily focus on the reliability and completeness of information, as well as the quality of treatment plans. They offer limited evaluation of communication elements specific to short-video platforms—such as visual presentation, narrative style, and emotional expression—and may therefore fail to fully capture the multidimensional quality characteristics of health information in short videos.

Conclusion

The study findings indicate that the quality and reliability of stoma-related information on the TikTok short-video platform are generally poor, with the key determining factors being the professional status of the content creators and the video topics. Healthcare professionals were found to be the most reliable source of high-quality information on the platform. Furthermore, the disconnect between information quality and engagement metrics serves as a warning to patients and caregivers using TikTok to access stoma health information: they must critically evaluate information sources. At the same time, platform regulators have a responsibility to foster a healthier information ecosystem by establishing reliable certification and ranking systems. Ultimately, this study calls on Chinese healthcare professionals to actively engage in this digital space to improve the quality of stoma care information on the platform. They should adopt a “small but deep” approach to provide detailed, practical guidance and integrate “evidence-based knowledge” into authentic “storytelling” to enhance emotional resonance. This will guide stoma patients toward safe and effective self-management practices, thereby leveraging the power of short-video platforms to improve health outcomes.

List of abbreviations

GQS: The Global Quality Scale

IQR：Interquartile Range

Declarations

Ethics approval and consent to participate

Not applicable. This study analyzed publicly available short videos on a social media platform and did not involve direct recruitment of human participants or collection of private personal information.

Consent for publication

Not applicable.

Date availability statement

All data and materials that support the findings of this study is provided within supplementary information files.

Acknowledgements

The authors wish to thank Professor Chenwei Bi The Third Affiliated Hospital of Kunming Medical University (Yunnan Cancer Hospital, Peking University Cancer Hospital Yunnan) for his contributions to the data collection for this research.

Funding

This study was supported by the 2025 Kunming Medical University Basic Research Joint Special Project of the Yunnan Provincial Department of Science and Technology (202501AY070001-259); and the Theoretical Research Project of the Trade Union of Yunnan Provincial Cancer Hospital (ZLGHYB202522).

Authors' contributions

Jj-Z: Study design, data analysis, Data collection , and initial draft. Yj-W:data analysis, supervision, and critical revision. C-Z:Data acquisition, coding, and manuscript drafting.Y-F:data analysis and Data coding. Zy-L:Data coding and analysis support. Qm-Y:Data collection and preliminary analysis. Wy-P:Data collection and clinical insights. T-S:Corresponding author. Overall supervision, funding acquisition, and final approval.

Competing interests

The authors declare no competing interests.

Reference

1. Salama A, Calpin G, Salama M, Creavin B, Maguire PJ, Lonergan P, et al. Double-Barrel Uro-Colostomy Versus Ileal Conduit for Urinary Diversion After Pelvic Exenteration: A Systematic Review and Meta-Analysis of Comparative Outcomes. Cancers (Basel). 2025 Oct 29;17(21):3479. doi: 10.3390/cancers17213479.
2. Strong C, Hall J, Wilson G, Carney K. Common intestinal stoma complaints. BMJ. 2021 Sep 23;374:n2310. doi: 10.1136/bmj.n2310.
3. Wei-Ying Z, Hui-Ren Z, Hai-Ping Y, Li-Li M. The effect of telemedicine on stoma-related complications in adults with enterostomy: A systematic review and meta-analysis. Int Wound J. 2024 Jan;21(1):e14572. doi: 10.1111/iwj.14572.
4. Parini D, Bondurri A, Ferrara F, Rizzo G, Pata F, Veltri M, et al. Multidisciplinary Italian Study group for STOmas (MISSTO). Surgical management of ostomy complications: a MISSTO-WSES mapping review. World J Emerg Surg. 2023 Oct 10;18(1):48. doi: 10.1186/s13017-023-00516-5.
5. Bianchi R, Mamadou-Pathé B, von Känel R, Roth R, Schreiner P, Rossel JB, et al. or the Swiss IBD cohort study. Effect of closed and permanent stoma on disease course, psychological well-being and working capacity in Swiss IBD cohort study patients. PLoS One. 2022 Sep 16;17(9):e0274665. doi: 10.1371/journal.pone.0274665.
6. Gao K, Zhang S, Liu J, Zhang F, Liu N, Dong J, et al. Supportive care needs of the family caregivers of urostomy patients: a qualitative study. Sci Rep. 2025 Jan 11;15(1):1664. doi: 10.1038/s41598-025-85133-9.
7. Mao YJ, Shi T, Guan HX, Chen MX, Yu QM. Status and influencing factors of self-care ability among urinary stoma patients[J]. Chinese Nursing Management, 2025, 25(08): 1158-1163.
8. Mohamed NE, Shah QN, Kata HE, Sfakianos J, Given B. Dealing With the Unthinkable: Bladder and Colorectal Cancer Patients' and Informal Caregivers' Unmet Needs and Challenges in Life After Ostomies. Semin Oncol Nurs. 2021 Feb;37(1):151111. doi: 10.1016/j.soncn.2020.151111.
9. Ambe PC, Kurz NR, Nitschke C, Odeh SF, Möslein G, Zirngibl H. Intestinal Ostomy. Dtsch Arztebl Int. 2018 Mar 16;115(11):182-187. doi: 10.3238/arztebl.2018.0182.
10. Wang SM, Jiang JL, Li R, Wang JJ, Gu CH, Zeng J, et al. Qualitative exploration of home life experiences and care needs among elderly patients with temporary intestinal stomas. World J Gastroenterol. 2024 Jun 14;30(22):2893-2901. doi: 10.3748/wjg.v30.i22.2893.
11. Liu F, Chen YQ, Liu J, Kong YQ, Lin FZ, Zhou FF, Chen Y. Longitudinal changes of psychological experience in bladder cancer patients with urostomy: a qualitative study. Chinese Nursing Management. 2025;25(10):1498-1502.

12. Kang Y, Zhu Y, Zhong G, Lv A, Gao R, Li N, et al. Life Experience of Patients Living With Urostomy: A Meta-Synthesis of Qualitative Research. Psychooncology. 2025 Mar;34(3):e70096. doi: 10.1002/pon.70096.
13. Polidano K, Chew-Graham CA, Farmer AD, Saunders B. Access to Psychological Support for Young People Following Stoma Surgery: Exploring Patients' and Clinicians' Perspectives. Qual Health Res. 2021 Feb;31(3):535-549. doi: 10.1177/1049732320972338.
14. Chen JH, Wang Y. Social media use for health purposes: systematic review. J Med Internet Res. 2021;23(5):e17917. doi: 10.2196/17917.
15. CNNIC. (2026). The 57th Statistical Report on China's Internet Development. China Internet Network Information Center. https://www.cnnic.net.cn.
16. Wu G, Ning H, Yuan Y, Chen J, Li G, Liu S, et al. Topic identification and content analysis of internet medical policies under the background of Healthy China 2030. Health Res Policy Syst. 2024 Sep 30;22(1):132. doi: 10.1186/s12961-024-01226-3.
17. van der Storm SL, Hensen N, Schijven MP. Patient satisfaction with stoma care and their expectations on mobile apps for supportive care. Colorectal Dis. 2023 Sep;25(9):1852-1862.
18. QuestMobile. 2025 China Mobile Internet Annual Report. QuestMobile, https://www.questmobile.com.cn/report/2025-mobile-internet-annual-report (2026).
19. Cai J, Huang Y, Xu M, Li Q, Wu J, Liu L, Wang F, Luo P. Evaluation of the quality, reliability of Crohn's disease-related content on TikTok and Xiaohongshu with insights from user comments: A cross-sectional study. Digit Health. 2026 Mar 10;12:20552076261433840. doi: 10.1177/20552076261433840.
20. Song S, Zhang Y, Yu B. Interventions to support consumer evaluation of online health information credibility: a scoping review. Int J Med Inform. 2021;145:104321. doi: 10.1016/j.ijmedinf.2020.104321
21. Sun F, Zheng S, Wu J. Quality of Information in Gallstone Disease Videos on TikTok: Cross-sectional Study. J Med Internet Res. 2023 Feb 8;25:e39162. doi: 10.2196/39162.
22. Zeng F, Zhang W, Wang M, Zhang H, Zhu X, Hu H. TikTok and Bilibili as sources of information on lung cancer in China through assessment and analysis of the content and quality. Sci Rep. 2024 Sep 4;14(1):20604. doi: 10.1038/s41598-024-70640-y.
23. Sun KX, Cui C, Mu F, Tang M, Gong R, Yan Z, et al. Reliability, quality, and science popularization of diabetes knowledge information in China video sharing platform: A cross-sectional study. Digit Health. 2025 Oct 30;11:20552076251393298. doi: 10.1177/20552076251393298.
24. Li A, Xing Q, Zhang Y, Zhan W, Zhu S, Lou L, et al. Evaluation of the information quality related to osteoporosis on TikTok. BMC Public Health. 2024 Oct 18;24(1):2880. doi: 10.1186/s12889-024-20375-2.

25. Thorpe G, McArthur M, Richardson B. Healthcare experiences of patients following faecal output stoma-forming surgery: a qualitative exploration. Int J Nurs Stud. 2014 Mar;51(3):379-89. doi: 10.1016/j.ijnurstu.2013.06.014.
26. Lin L, Zheng J, Lin Z, Xiao H. Understanding the Challenges of Readiness for Hospital Discharge in Stoma Patients: A Mixed-Methods Study. J Clin Nurs. 2025 May;34(5):1704-1712. doi: 10.1111/jocn.17654.
27. Mueller SM, Hongler VNS, Jungo P, Cajacob L, Schwegler S, Steveling EH, Manjaly Thomas ZR, Fuchs O, Navarini A, Scherer K, Brandt O. Fiction, Falsehoods, and Few Facts: Cross-Sectional Study on the Content-Related Quality of Atopic Eczema-Related Videos on YouTube. J Med Internet Res. 2020 Apr 24;22(4):e15599. doi: 10.2196/15599.
28. Mueller SM, Jungo P, Cajacob L, Schwegler S, Itin P, Brandt O. The Absence of Evidence is Evidence of Non-Sense: Cross-Sectional Study on the Quality of Psoriasis-Related Videos on YouTube and Their Reception by Health Seekers. J Med Internet Res. 2019 Jan 16;21(1):e11935. doi: 10.2196/11935.
29. Charnock D, Shepperd S, Needham G, Gann R. DISCERN: an instrument for judging the quality of written consumer health information on treatment choices. J Epidemiol Community Health. 1999 Feb;53(2):105-11. doi: 10.1136/jech.53.2.105.
30. Mueller SM, Hongler VNS, Jungo P, Cajacob L, Schwegler S, Steveling EH, et al. Fiction, Falsehoods, and Few Facts: Cross-Sectional Study on the Content-Related Quality of Atopic Eczema-Related Videos on YouTube. J Med Internet Res. 2020 Apr 24;22(4):e15599. doi: 10.2196/15599.
31. Zhu W, He B, Wang X, Du Y, Young K, Jiang S. Information quality of videos related to esophageal cancer on tiktok, kwai, and bilibili: a cross-sectional study. BMC Public Health. 2025 Jul 2;25(1):2245. doi: 10.1186/s12889-025-23475-9.
32. TikTok video duration by followers. Statista. [2024-12-11].
33. Wang J, Xu K, Wu J, Liang W, Qiu W, Wang S. Evaluating the Content and Quality of Videos Related to Hypertrophic Scarring on TikTok in China: Cross-Sectional Study. JMIR Infodemiology. 2025 Apr 29;5:e64792. doi: 10.2196/64792.
34. Li Y, Guan M, Hammond P, Berrey LE. Communicating COVID-19 information on TikTok: a content analysis of TikTok videos from official accounts featured in the COVID-19 information hub. Health Educ Res. 2021 Jul 12;36(3):261-271. doi: 10.1093/her/cyab010.
35. Zhang H, Zhang C, Mo J, Wang W, Wu Z. Quality of information in osteoporosis videos on TikTok: a cross-sectional study. Arch Osteoporos. 2025 Aug 15;20(1):115. doi: 10.1007/s11657-025-01597-2.
36. Yang S, Brossard D, Scheufele DA, Xenos MA. The science of YouTube: What factors influence user engagement with online science videos? PLoS One. 2022 May 25;17(5):e0267697. doi: 10.1371/journal.pone.0267697.
37. Song L, Han X, Zhang J, Tang L. Body image mediates the effect of stoma status on psychological distress and quality of life in patients with colorectal cancer.

Psychooncology. 2020 Apr;29(4):796-802. doi: 10.1002/pon.5352. Epub 2020 Feb 21. PMID: 32043668.
38. Guan JL, Xia SH, Zhao K, Feng LN, Han YY, Li JY, Liao JZ, Li PY. Videos in Short-Video Sharing Platforms as Sources of Information on Colorectal Polyps: Cross-Sectional Content Analysis Study. J Med Internet Res. 2024 Oct 29;26:e51655. doi: 10.2196/51655.
39. Billman E, Steele N, Servino K, Bumgardner D, Walker K, Smith SM, Schapira L. Developing "The Health After Cancer Podcast" to amplify cancer survivors' voices through digital storytelling. Patient Educ Couns. 2024 Jun;123:108194. doi: 10.1016/j.pec.2024.108194.
40. Rieger KL, West CH, Kenny A, Chooniedass R, Demczuk L, Mitchell KM, Chateau J, Scott SD. Digital storytelling as a method in health research: a systematic review protocol. Syst Rev. 2018 Mar 5;7(1):41. doi: 10.1186/s13643-018-0704-y.
41. Stargatt J, Bhar S, Bhowmik J, Al Mahmud A. Digital Storytelling for Health-Related Outcomes in Older Adults: Systematic Review. J Med Internet Res. 2022 Jan 12;24(1):e28113. doi: 10.2196/28113.
42. De Vecchi N, Kenny A, Dickson-Swift V, Kidd S. How digital storytelling is used in mental health: A scoping review. Int J Ment Health Nurs. 2016 Jun;25(3):183-93. doi: 10.1111/inm.12206.
43. Launer J, Wohlmann A. Narrative medicine, narrative practice, and the creation of meaning. Lancet. 2023 Jan 14;401(10371):98-99. doi: 10.1016/S0140-6736(23)00017-X.
44. Ka0fexhiu I, Tamoka J, Abreu A, Barrick S. Humanising anatomy education with narrative medicine. Med Educ. 2024 Nov;58(11):1415-1416. doi: 10.1111/medu.15524.