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A Cross-Sectional Analysis of the Information Quality and Dissemination Effects of Science Popularization Videos on Genitourinary Syndrome of Menopause: A Comparative Study of TikTok and Bilibili

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Abstract

In the context of global population aging, the health management problems of elderly women in China are particularly prominent. Among them, genitourinary syndrome of menopause (GSM), a prevalent chronic condition, has received limited public awareness regarding this novel term. Moreover, the quality of internet-based science popularization content related to GSM is uneven. Therefore, a systematic evaluation of the information dissemination status on short video platforms is imperative.

This study aims to assess the information quality and dissemination effects of GSM-related science popularization videos on TikTok and Bilibili platforms. The findings will provide valuable references for optimizing science popularization content and enhancing the health awareness of elderly women. A total of 231 videos (175 from TikTok and 56 from Bilibili) were screened and analyzed.

First, basic information such as video sources, content types, and researchers was recorded and analyzed. Two widely recognized quality assessment tools, namely, the GQS (scored from 1 - 5, with higher scores indicating better quality) and mDISCERN (comprising 5 questions, 1 point per question, evaluating clarity and information sources), were employed. The scores were independently assigned by two researchers, and any disagreements were resolved through discussion. Subsequently, Spearman and Pearson correlation analyses were conducted using SPSS 26.0. Continuous variables were presented as medians (range), and categorical variables as frequencies and percentages. Statistical significance was set at $p < 0.05$.

The results indicated distinct dissemination characteristics between the two platforms. The number of GSM-related videos on TikTok was significantly higher than that on Bilibili (175 Vs. 56), and TikTok videos also exhibited higher interaction volumes (likes, comments, shares). However, Bilibili videos had a longer average duration (median 3720 seconds vs. 3240 seconds). TikTok started featuring GSM-related videos in 2023, with the upload volume reaching a peak of 64% in 2025, while Bilibili released relevant videos earlier.

Regarding factors influencing video quality, on Bilibili, the GQS and mDISCERN scores were positively correlated with likes, favorites, and video duration ($p < 0.05$). In contrast, on TikTok, only the correlation between video duration and scores was statistically significant ($p < 0.05$). These data suggest that the overall quality of platform videos is suboptimal, characterized by issues such as low information reliability and a lack of drug risk warnings. Videos rated highly by professional institutions or associations accounted for a relatively small proportion.

It should be noted that these findings may be subject to the limitations of this study, including a small sample size, the exclusive focus on two platforms, and the lack of analysis of the impact of audience behavior. Future research should expand the scope of platforms and conduct longitudinal studies. It is recommended that public platforms strengthen content moderation, encourage the participation of professional institutions in science popularization creation, improve information accuracy, and assist elderly women in gaining a scientific understanding of GSM.

Keywords

Genitourinary syndrome of menopause (GSM), Quality, Short video, TikTok, Bilibili

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Introduction

The global trend of population aging is intensifying, and health issues related to the elderly are receiving increasing attention [1]. As a populous country, China has a particularly prominent aging trend. By 2025, the proportion of the population aged 60 and above has reached 23.0%. The aging of China's female population is also extremely evident [2]. In 2024, the proportion of women aged 50 and above in China exceeded 40%, and the number of women aged 50 and above in China has surpassed 277 million. It is projected that by 2030, this figure will further increase to 380 million, accounting for about one-sixth of the total population. Therefore, the health management issues for elderly women are becoming increasingly severe. Postmenopausal health management will significantly impact the quality of life for elderly women.

In menopausal management, the management of Geriatric Sexual and Urological Syndrome (GSM) is an extremely important part. This is a common chronic disease with high incidence among postmenopausal women, caused by ovarian function decline and decreased estrogen levels, involving a series of symptoms and signs in the lower genital tract (vulva, vagina, urethra) and urinary organs [3]. A study [4] showed that 84% of women six years after menopause suffer from GSM; another study [5] targeting Chinese women pointed out that about 30.8% of postmenopausal women experience varying degrees of discomfort symptoms, which gradually worsen with the prolongation of menopause, not only affecting the patients 'sexual life quality but also potentially leading to urinary symptoms such as frequent urination [6], urgency, and dysuria, and in severe cases, even complications like pelvic inflammatory disease [7]. Senile vaginitis, formerly known as GSM, is a core component of its reproductive system symptoms. In 2014, the International Association for Women's Sexual Health and the North American Menopause Society had already unified the old terms "senile vaginitis," "atrophy vaginitis," and "vaginal atrophy" into GSM [8,9].

However, in China, although the "Expert Consensus on Clinical Diagnosis and Treatment of Menopausal Reproductive Urological Syndrome" issued by the corresponding professional group of the Chinese Medical Association in 2020 and the 2023 "China Guidelines for Menopausal Management and Hormone Therapy" both clearly updated the definition of this disease, the old term "senile vaginitis" is still widely used from clinical practice to online popular science, while GSM as a new term has not yet been fully recognized by the public. Even in the field of scientific research, a large number of papers still use "senile vaginitis" as the formal diagnostic name, which may be related to the fact that GSM was not listed separately in the ICD coding update, the relatively lagging update of the domestic medical education system, and the obvious gap in terminology usage between the academic and popular science fields.

Under the background of the widespread use of the internet, platforms such as TikTok and Bilibili have become important channels for the public to obtain health information [10]. As of June 2025, the number of short video users in China reached 1.068 billion, accounting for 95.1% of the total internet users [11]. The public has a high enthusiasm for obtaining medical knowledge through social media such as short videos [12].

Among middle-aged and elderly populations, the dissemination power of short videos remains strong. Taking TikTok as an example, according to QuestMobile's data [13] from October 2025, it has 907 million monthly active users, with users aged 51 and above accounting for 22.2% of the total. Moreover, the growth rate of middle aged and elderly users among new users is relatively fast. Due to China's large population base, this will be a postmenopausal female user group of tens of millions.

However, studies [14] have pointed out that although the daily playback volume of medical and health content on short video platforms is enormous, there are obvious deficiencies in scientific accuracy. Especially in the field of elderly health, due to the older age of the patient population and relatively limited channels for obtaining information, there is a stronger reliance on popular science content, yet related research remains scarce. Existing studies still lack systematic evaluation of the dissemination of medical knowledge related to vulvovaginal candidiasis/GSM on internet video social media platforms such as TikTok and Bilibili. Therefore, for common diseases in elderly women such as vulvovaginal candidiasis/GSM, the popular science content disseminated on platforms like TikTok and Bilibili may have similar issues to other health popular science, particularly insufficient medication risk warnings, which could potentially harm patients' health.

This study aims to systematically collect and analyze popular science video content on TikTok and Bilibili platforms regarding senile vaginitis/GSM, evaluating its information quality and dissemination effects. The research will focus on aspects such as the scientific nature, accuracy, completeness, and medication risk warnings of the content, revealing the current status and issues of medical popular science on internet video platforms. At the same time, the study will explore how to optimize popular science content to help postmenopausal women fully understand the characteristics of the disease, treatment options, and medication risks, promoting scientific cognition and rational responses to senile vaginitis/GSM. This will provide references for the development of medical popular science on internet videos, enhance public understanding of senile diseases, and improve the quality of life for elderly women.

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Methods

Ethical Considerations This study did not involve the use of clinical datasets, biological specimens, or laboratory animals. All data from Bilibili and TikTok used in this analysis were publicly available and did not raise any privacy concerns. Furthermore, all data were deidentified, and neither individual users, videos, nor screenshots were identifiable in this article or its supplementary materials. Therefore, ethical review was not required.

Data Collection Videos were procured from two web-based platforms, specifically Bilibili and TikTok, on January 16, 2026, employing the search term "Geriatric Sexual and Urological Syndrome" in Chinese. After eliminating duplicates, advertisements, and irrelevant videos, the following parameters were documented and examined for all eligible videos: title, web address, number of likes, number of comments, number of shares, upload date, days since publication, video duration, video content, video source.

Video Quality Assessments Two widely adopted standardized scales, namely the GQS and the mDISCERN scale, were employed to evaluate the quality of the videos [15,16]. The GQS encompassed scores spanning from 1-5. Generally, scores of 1-2 points were indicative of subpar quality, 3 points denoted moderate quality, and 4-5 points indicated high quality within the GQS framework. On the other hand, the mDISCERN system comprised 5 questions, with each affirmative answer warranting a score of 1, while each negative response carried a score of 0. In detail, the 5 questions determined whether: (1) the video was lucid, concise, and comprehensible; (2) the sources of information were reliable; (3) the information presented was balanced and unbiased; (4) additional sources of information were provided for patient consultation; and (5) areas of ambiguity or controversy were appropriately addressed. Ultimately, higher scores signified superior quality and reliability. Two investigators independently reviewed and assessed the aforementioned videos. When any discrepancies or disagreements arose between the two investigators, two authors deliberated and established a mutually agreed-upon conclusion.

Statistical analysis

Statistical analysis was made using IBM SPSS Statistics for Windows, version 26.0. The statistical analysis methods used include Spearman correlation analysis and Pearson correlation analysis. The continuous variables were expressed as median (range), while nominal variables were given as frequency and percentage. Moreover, $p<0.05$ was considered statistically significant.

Results

Overview of the video screening process

A total of 331 and 716 videos pertaining to GSM were retrieved from the web-based platforms of Bilibili and TikTok, respectively. Following a meticulous screening process, we successfully purged 275 unrelated videos from Bilibili and 541 unrelated videos from TikTok.

Consequently, a refined collection of 56 suitable videos from Bilibili and 175 videos from TikTok were included for the subsequent analysis. Ultimately, a comprehensive evaluation was conducted on an assortment of 231 eligible videos encompassing both the Bilibili and TikTok platforms.

Landscape of the GSM-Related Videos on Tiktok and Bilibili Following a comprehensive search. Specifically, we discovered that there were no GSM-Related videos on Tiktok prior to 2023, probably due to the platform only becoming well known in last several years. of the 175 videos uploaded to Tiktok from 2023 to 2026, there were 17 videos (9.7%) in 2023, 27 videos (15.4%) in 2024, 112 videos (64%) in 2025, and 19 videos (10.9%) in 2026.

General Information and Index of Videos The number of likes, comments, shares, and saves of the videos on TikTok and Bilibili is as an indicator for the attention received by these videos, making it an appropriate tool for evaluating their influence. First, we compared these indices between TikTok and Bilibili. On average, GSM-related videos on Bilibili with likes, comments, shares, and saves being relatively scarce (Table 1). Conversely, GSM-related videos on TikTok garnered frequent likes, comments, shares, and saves, significantly surpassing those on Bilibili (Table 1).

However, the videos on Bilibili had longer durations and were published earlier. In summary, Bilibili featured longer videos released at earlier dates, while TikTok offered more interactive content (Table 1).

An investigation into determinants of video quality

Employing Spearman correlation analysis, we identified the connections between video variables and quality scores. Our findings indicated that both GQS scores and mDISCERN scores of the video on Bilibili exhibited an exclusive correlation with the likes, collections and duration of the videos, while remaining unrelated to other factors, such as comments, saves, shares, and days since the video was published. On the TikTok platform, only the duration of the videos is correlated with the GQS scores and the mDISCERN scores (Table 2).

Table 1: Basic index of videos about GSM on Bilibili and TikTok.

Variable	Bilibili (n=56), median (IQR)	TikTok (n=175), median (IQR)	P Value
Likes	1 (0-661)	135 (1-75000)	P<0.00
Collections	1 (0-899)	47 (0-61000)	P<0.00
Comments	0 (0-20)	10 (0-2648)	P<0.00
Share	1 (0-101)	18 (0-16000)	P<0.00
Duration (s)	3 720 (1920-57480)	3240 (1020-88020)	P<0.02

Table 2: The correlations between different factors and GQS and mDISCERN on Bilibili and TikTok.

Bilibili	GQS		mDISCERN	
	R	Pvalue	R	Pvalue
Platforms	0.345	0.009	0.06	0.659
Days since published (year)	-0.23	0.089	-0.125	0.358
Likes	0.381	0.004	0.33	0.013
Collections	0.424	0.001	0.282	0.035
Comments	-0.182	0.18	-0.082	0.547
Share	0.246	0.068	0.163	0.23
Duration (s)	0.375	0.004	0.297	0.026
TikTok				
Platforms	-0.043	0.575	-0.036	0.632
Days since published (year)	0.085	0.264	0.144	0.058
Likes	-0.05	0.514	-0.099	0.194
Collections	-0.028	0.712	-0.104	0.172
Comments	0.033	0.662	-0.029	0.701
Share	-0.002	0.974	-0.104	0.172
Duration (s)	0.217	0.004	0.163	0.032

Discussion

To our knowledge, this study is the first to systematically evaluate the content and information quality of videos on senile vaginitis/GSM on China's top video-sharing platforms TikTok and Bilibili. Given the significant impact of this disease on the quality of life of postmenopausal women, this research provides valuable insights for menopausal health management, helping to sustain activities aimed at improving public awareness of physical decline among women and guiding the public to actively address social aging.

The results of this study indicate that videos on the Chinese mainstream social media platforms TikTok and Bilibili regarding senile vaginitis/GSM are deficient in both quality and content. Specifically, the analysis shows that videos on Bilibili totaling 56 videos; on TikTok, 175 videos. Additionally, based on various characteristics comparing the differences in video sources, the video publishers are predominantly professionals, but there are no significant differences in upload time, likes, comments, favorites, shares, or two evaluation tools (GQS, and discern) among the video publishers. Notably, all video sources did not score high in the two evaluation tools. On these two mainstream China video-sharing platforms, most science popularization videos on senile vaginitis are presented in forms involving medical professionals, aiming to enhance public awareness and understanding of the disease. These videos predominantly adopt formats introducing disease etiology and terminology, mostly completed by physicians themselves, with only a few cases using AI-generated non-human narration (2 instances) and just one instance in the form of a game-based Q&A (likely targeting healthcare workers rather than the general public). This approach of information provided by real doctors is considered more credible; a small number of non-medical individuals may be driven by profit when introducing the disease, potentially providing more false information. In an era where AI machine learning capabilities are highly advanced, false information can poison and pollute human knowledge bases, leading to broader dissemination of misinformation. This study has several limitations to consider. First, although we aimed to comprehensively collect and analyze TikTok and Bilibili videos related to the research topic, strict inclusion criteria resulted in a relatively small sample size. This rigorous screening process may have limited the diversity of video samples, thereby potentially affecting the generalizability of our findings. Secondly, TikTok and Bilibili provide rich data sources for exploring how the public disseminates information on the diagnosis and treatment of senile vaginitis. However, the comparison of information volume between TikTok and Bilibili is not statistically significant. Therefore, there are doubts about whether our research findings can be widely applied to other similar video-sharing or social media platforms. Differences in user behavior, push patterns, and query logic across platforms may have varying impacts on the dissemination and reception of information. Thus, future research should investigate more platforms to determine the cross-platform applicability of our findings. Additionally, content updates, version logic iterations, algorithm updates, and changes in users' information acquisition paths on video-sharing platforms are relatively rapid, and our research results may be influenced by temporal factors. Sudden trending topics, social news, or even a single update to algorithmic logic on platforms may weaken the long-term stability and relevance of the research findings. Therefore, subsequent studies must regularly update data and conduct longitudinal analyses to continuously monitor and evaluate trend changes.

Finally, it should be noted that this study only conducted a descriptive analysis of the video content quality and did not delve into how these videos shape the attitudes and behaviors of the audience, particularly the logical relationship between

the health-related consumption behaviors on the TikTok platform and medical science videos. Although the medical professionals in the videos have introduced the drugs, and some information providers even mentioned the adverse effects of the drugs, we do not know the direct correlation between the audience's real-world medical-seeking behaviors and the videos. Moreover, the audience's interpretation and reactions to the video content are multidimensional and may be influenced by factors such as personal background, cultural context, and social environment. Therefore, future research should consider using quantitative surveys, structured interviews, or experimental methods to gain a more in-depth and detailed understanding of how information related to vulvovaginitis/GSM on video-sharing platforms affects public cognition and behavior.

Conclusion

This study evaluated the content and information quality of 231 videos related to senile vaginitis/GSM on the video-sharing platforms TikTok and Bilibili. The results showed that although these videos provided some valuable insights into the disease, the overall quality failed to meet satisfactory standards, with insufficient reliability and accuracy. These videos primarily focused on the etiology, symptoms, and treatment methods of the disease (including but not limited to topical and oral hormonal medications, traditional Chinese medicine, photodynamic therapy, etc.). However, when providing usage recommendations for hormonal medications, they often tended to avoid potential risks, and even among professional populations, there were instances of "failure to emphasize adherence to medical advice." Among all certified medical videos, only a minimal amount of text in very small font size indicated that the platform provided 'for reference only,' which had little impact on the viewership. Some healthcare professionals might even be influenced by outdated misconceptions and provide incorrect medical information. Therefore, users should exercise caution when seeking GSM-related information on Bilibili and Douyin. The few videos that received high ratings were mainly provided by professional public medical institutions or professional industry associations, which may have undergone secondary reviews to ensure greater accuracy. To enhance the credibility and precision of the information, it is recommended that video-sharing platforms hire professionals part-time or invite authoritative third-party professional associations to implement stricter content review processes. Additionally, the active participation of more genuine professionals in creating social media content is crucial for ensuring the accuracy and reliability of disease-related information on video platforms. This active engagement can enhance awareness of the disease among postmenopausal women, while promoting societal understanding of health, disease, and aging through cross-sectoral dissemination.

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