

Analysis of the Dissemination Mechanism of “Viral” Videos on Social Media Platforms: Taking Women’s Safety Science Popularization as an Example

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Abstract:

With the increasing attention paid to women’s safety issues, social media has become the core carrier for safety science popularization. However, there is a significant divergence in the dissemination of women’s safety science popularization videos, and the mechanism for their going viral remains unclear. This study focuses on the key variables for the breakout of female safety science popularization videos and conducts the research by using the literature analysis method and case comparison method: through literature review, it clarifies the current situation and gaps of short video dissemination and female science popularization research; select the Bilibili viral video “Chasing the Culprit for 48 Hours, Personally Exposing the Pervert Who Sexually harassed Me for a Year” and the non-viral video “[Girls, Please Come In] Five Hidden Dangers You Don’t Know!” and conduct a comparative analysis from the dimensions of dissemination data, content design, user interaction and platform adaptation. Research has found that the core variables for a video to go viral are the blogger’s fan base, content design that combines “true narrative and practical skills”, the adaptation of user interaction to platform characteristics, and highly recognizable title covers; non-viral videos are restricted in their dissemination due to insufficient scene-based content and lack of algorithm adaptation. The research conclusion indicates that multi-dimensional collaboration is the key for women’s safety science popularization videos to break through the dissemination differentiation, which can provide references for the creation of related content and the optimization of dissemination strategies.

Keywords: Popular science on women’s safety; short video dissemination; spread differentiation; Bilibili.

1. Introduction

This study focuses on the background of the publicization of women's safety issues. Traditional popular science models are difficult to meet the practical knowledge demands. Social media has become the core carrier of popular science, but it shows a phenomenon of communication differentiation where "explosive popularity and silence coexist" [1,2]. This research has practical significance for optimizing the dissemination strategy of popular science videos on women's safety and enhancing the public influence of the topic. At the same time, it can enrich the theoretical research on the dissemination mechanism of short videos in vertical fields. By using the literature analysis method to sort out the relevant literature on short video dissemination and female science popularization, the existing research results are summarized to clarify the research gaps. The case comparison method is adopted, and the Bilibili viral video "48 Hours of Chasing the Criminal, I Personally Caught the Pervert Who Harassed Me for a Year" and the non-viral video "Girls, Please Come In! Five Hidden Dangers You Don't Know!" are selected for comparison and analysis of dissemination data, content features, and user feedback. The advantage of this method lies in its ability to directly present the essence of the differences, providing empirical support for variable extraction and facilitating the research process. The ultimate research objective of this study is to explore the key variables for the viral spread of female safety popular science videos, providing references for enhancing their dissemination power. To achieve this goal, a theoretical framework is first established through a literature review, followed by the dissection of core influencing factors through a comparative analysis of two cases. Finally, based on the analysis results, the research limitations and future directions are proposed.

2. Literature Review

With the acceleration of social civilization and the awakening of gender equality awareness, women's safety has escalated from an individual risk to a public discussion focus. The media's proactive attention to women's situations is the key to bringing the issue into the public governance perspective. However, the traditional popular science model's shortcomings of "narrow dissemination radius and slow content update" make it difficult to meet women's demand for practical safety knowledge, which provides the basis for this article to focus on social media as a popular science carrier [1]. In reality, most women have encountered safety threats but lack the ability to deal with them. The exposure of incidents such as sexual ha-

rassment on campus has significantly increased, highlighting the urgent need for popular science. Although social media has become an ideal carrier due to its "high dissemination efficiency", there is a significant divergence in dissemination, and the dominant factors leading to its sudden popularity still need to be dissected [2]. This article aims to explore the key variables for female safety science popularization videos to go viral and provide references for enhancing their dissemination influence.

In the existing studies, Xumei Bao in "Research on the Communication Efficiency of Short Videos in the Era of Media Convergence" proposed the "phenomenon of differentiation in short video communication", and pointed out that algorithms and platform characteristics are the core influencing factors, but she did not decompose specific variables for the "female safety" vertical field [2]. Tianyi Zhang in "Research on the Impact of Science Popularization Short Videos on Female Subject Consciousness" emphasized that "scene-based science popularization enhances the relevance of the content", but she did not compare the content design differences of videos with different communication effects [3]. Tong Chen constructed a communication effect evaluation system for science popularization short videos (including communication breadth, recognition degree, and participation degree), which provided a standard for quantitative analysis, but it did not adapt to the special communication logic of the female safety theme [4]. Min He interpreted the user interaction mechanism from the perspective of "new media carnival mentality", providing a viewpoint for understanding the female mutual assistance atmosphere, but it lacked direct analysis of the connection with the video's popularity [5]. JunWang although pointed out the shortcomings of traditional science popularization, did not deeply explore the practical strategies of science popularization on social media [1].

In conclusion, the current research has established the basic framework for the dissemination of short videos. However, in the field of women's safety education, there are two major gaps: „the core variables for explosive popularity have not been clearly defined“ and „there is a lack of comparison between popular and non-popular cases“. This paper uses a comparative analysis of two cases to explore the key variables from three dimensions: content design, user interaction, and platform adaptation. It fills the research gap in this specialized field and provides practical references for enhancing the dissemination power of education.

3. Case Analysis

3.1 Analysis of the Popular Video on Bilibili

The video “Chasing the Suspect for 48 Hours: Catching the Pervert Who Harassed Me for a Year” released by “Plastic Fork FOKU”, is a typical highly popular case in the field of women’s safety education on Bilibili. As of August 29, 2025, the video has received a total of 7.694 million views, 787,000 likes, 17,000 comments, and 271,000 collections. The core dissemination indicators of this video are significantly higher than those of ordinary similar videos - most non-buzz safety education videos receive only several thousand to 10,000 likes and 100,000 - 500,000 views. The video’s view count is approximately 15 to 70 times that of ordinary videos, and the number of likes is approximately 80 to 150 times. This gap perfectly aligns with Xuemei Bao’s viewpoint on the “differential phenomenon of science and education short videos dissemination” [2]. From Tong Chen’s “Evaluation System for Communication Effects”, the video performed outstandingly in “communication breadth”, “communication recognition”, and “communication participation” [4]. The 17,000 comments also confirm the conclusion that “audience participation promotes communication effects”, laying the foundation for subsequent platform traffic recommendations.

The key to the video’s huge popularity lies in its content design of “true narrative + practical techniques”, which completely avoids the traditional scientific popularization problem mentioned by Jun Wang of “didacticism and lacking relevance to needs” [1]. The opening scene uses the first person perspective to recreate the specific scenario where the protagonist receives an unknown origin harassing text message from teachers. Through “immersive recreation”, the audience can quickly immerse themselves, which aligns with Tianyi Zhang’s research viewpoint that “scene-based scientific popularization enhances the relevance of the content” [3]. The middle part shares the process of finding the person, with detailed and specific information, accompanied by real screenshots. It teaches the public in the story how to calmly and composedly deal with harassment. At the end, the culprit is identified, and the methods for dealing with danger are explained, forming a “encounter - response - resolution” loop, which alleviates the anxiety of women having no way to protect themselves. This echoes Jun Wang’s viewpoint that “the media should provide solutions for women,” and shifts the focus of scientific communication from mere warning to empowerment and support [1].

User feedback and the platform features of Bilibili further contributed to the popularity of the videos. In the com-

ment sections and the chat bubbles, there were numerous emotionally resonant messages such as “I’ve also encountered a similar situation” and “The uplord is very smart, I might not be able to do it”. Many users shared their own experiences of sexual harassment. This “collective venting” confirmed Min He’s “celebratory mentality of new media” - the virtual space breaks the silence of reality and creates an atmosphere of mutual support among women [5]. Meanwhile, “evidence preservation” and “alarm techniques” have become frequently discussed topics. Users left messages such as “Save for future use” and “Forward to my best friend”, and even added “Record on phone to fix the evidence”, forming a knowledge co-creation model of “creator’s output+user’s supplementation”, which conforms to Jie Lin’s viewpoint that “mass participation can enhance the effectiveness of communication” [6]. The “real-time interaction through bullet comments” feature of Bilibili enables viewers to enhance their sense of participation in “collective learning” through immediate messages, which aligns with Zeren Wang’s viewpoint of “constructing interactive rituals through shared attention” [7]. The high interaction rate also triggers the platform’s algorithmic recommendations, placing the video in the “hot pool” and sending it to users with the “female safety” tag, forming a cycle of “high interaction - traffic skewing - more exposure”, which confirms Xuemei Bao’s conclusion that “algorithms and platform characteristics affect the efficiency of dissemination” [2].

3.2 Analysis of the Non-Viral Video on Bilibili

Take the video “[Girls, Welcome!] Five Hidden Dangers You Don’t Know About” released by the Bilibili content creator “Yours Kang Kang” as an example. This video is an example of non-phenomenally popular content related to women’s safety education. It was released on March 7, 2021 and remained active until August 29, 2025. The cumulative views reached approximately 145,000, with 18,000 likes, 633 comments, and 9,259 favorites. The core data shows a significant gap compared to “The Chase for 48 Hours”. This communication gap directly confirms the viewpoint of Xuemei Bao that “the dissemination of science education videos is differentiated”, and also reflects its obvious deficiencies in the dissemination strategy [2]. From the perspective of content design, the core difference between this video and the popular ones lies in “insufficient scene setting”. The video is presented in the form of “listing terms”, explaining the precautions in 6 different situations one by one. It does not simulate a real safety scenario, which contradicts the conclusion of Tong Chen that “content scientificity and interest are the key to communication” - compared with “Real Narrative

+ Teaching of Response Methods” in “The Chase for 48 Hours”, this video is “strongly didactic and disconnected from actual scenarios”, making it difficult to evoke emotional resonance from the audience and unable to meet the requirement emphasized by Tianyi Zhang that “scene-based science popularization is close to the audience’s cognition”, resulting in low user viewing willingness [3,4]. In terms of user interaction and platform compatibility, this video does not show any significant shortcomings. This indicates that the key to the video’s popularity is not necessarily in the comment section. In the comment section, many users are sharing their own experiences to alert everyone, but there is very little discussion about the content of the video itself.

Furthermore, the deficiency of this video in terms of dissemination efficiency is also reflected in the lack of adaptation to the “algorithm recommendation logic”. The video title is rather ordinary and fails to attract the public’s attention, which does not conform to the conclusion of Xuemei Bao that “platform characteristics affect dissemination efficiency” [2]. Compared with “Chasing the Suspect for 48 Hours”, this video, due to its “low information recognition degree”, is difficult to attract clicks on the user recommendation page, ultimately falling into the “low exposure - low interaction - even lower exposure” cycle, further widening the gap in dissemination efficiency compared to the highly popular videos.

4. Discussion

By comparing the two cases, it can be seen that for a female safety education video to achieve huge popularity, it needs to meet three core conditions: Firstly, the synergy between the blogger’s basic traffic and content design. The Content Creator “Plastic Fork FOKU” in “Chasing the Suspect for 48 Hours” has 2.985 million followers, which is 40% more than that of the non-popular video creator “Yours Kang Kang”. They have a certain audience base. Additionally, the content design of “realistic narration + practical skills” - presenting the harassment scenario from the first person perspective and breaking down the steps to find the person - not only avoids the traditional “didactic” nature of the safety education mentioned by Jun Wang, but also aligns with Tianyi Zhang’s viewpoint that “scenario-based safety education is closer to cognition”, making the content both emotionally resonant and practical in value [1,3]. Second, the adaptation of user interaction and platform features. The video creates a “female mutual assistance atmosphere” through comments and the comment section, confirming Min He’s “psychology of the carnivalization of new media” [5]. At the same time, the “real-time interaction” feature of Bilibili builds the “common atten-

tion” as Zeren Wang described [7]. The high interaction rate triggers algorithmic recommendations, forming a “exposure - interaction - re-exposure” cycle, which conforms to the conclusion of Xuemei Bao that “platform features affect the efficiency of dissemination” [2]. Third, the information recognition degree of the title and cover. By comparing the shortcomings of the non-popular video “ [Girls Please Come In] Five Hidden Dangers You Don’t Know!” with the “ordinary title”, the popular video title has a sense of conflict, which can quickly attract users to click, aligning with Tong Chen’s viewpoint that “the breadth of dissemination depends on the content’s appeal” [4].

However, the case analysis in this article also reveals significant shortcomings: On one hand, the communication platform is relatively limited, as both cases are focused on Bilibili and do not utilize multiple platforms for distribution (such as Tiktok and Rednote), which does not align with Lin Jie’s suggestion of “enhancing communication power through multi-platform collaboration” [6]. This limits the reach of the content and may make the research content and recommendations less effective for other social media platforms, especially those with different positioning. For instance, Bilibili videos tend to be of high quality and longer in duration, while Tiktok videos are more inclined towards fragmented and light-hearted short videos. Therefore, the audiences on different platforms may vary, resulting in the conclusion not being applicable to all software; on the other hand, the representativeness of the samples is limited. The current cases only cover a small number of topics and do not include specific scenarios such as workplace harassment and campus safety. Moreover, the sample size is small, making it difficult to comprehensively summarize the common problems of “non-hot” content. This may lead to biased conclusions. Additionally, although non-hot videos have user interactions, “there is a lack of discussion on the content itself”, indicating that their “knowledge transmission depth is insufficient” and they fail to form the “knowledge co-creation model” emphasized by Jie Lin, further restricting the communication effect [6].

5. Conclusion

This study demonstrates that the viral dissemination of women’s safety science popularization videos is not a result of a single factor but rather the outcome of multi-dimensional collaboration. By comparing viral and non-viral cases, it is evident that successful dissemination relies on the interaction between blogger influence, authentic and practical content design, effective user engagement adapted to platform mechanisms, and distinctive visual

identifiers such as titles and covers. These findings highlight that creators of women's safety science popularization videos should strategically integrate fan community building, narrative authenticity, and platform-specific interaction patterns to enhance communication effectiveness. The study contributes to the understanding of how safety-related content can achieve both social value and communication efficiency in the digital media environment, providing practical insights for content production and dissemination strategy optimization.

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