

Study on the dissemination path of TCM acupuncture short video based on data-driven approach

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Abstract: In the "Internet +" era, short video social platforms have become an important avenue for promoting traditional Chinese medicine culture. This study focuses on acupuncture and moxibustion short videos on the Douyin platform, grounded in health communication theory. It employs methods such as text analysis, content analysis, and in-depth interviews to explore their health communication approaches and the impact on user cognition and behavior. Through data-driven analysis, it examines the dissemination characteristics and user interaction of acupuncture and moxibustion short videos, highlighting their strengths and weaknesses in health communication and offering optimization strategies. The research shows that acupuncture and moxibustion short videos, through various communication strategies, effectively enhance users health awareness and willingness to act, but also face issues such as information fragmentation and poor content accuracy.

1. Introduction

Since the 18th National Congress of the Communist Party of China, traditional Chinese medicine has received high attention from the state and the Party. President Xi Jinping emphasized the need to promote the high-quality development of traditional Chinese medicine and its industry. Acupuncture, a key component of traditional Chinese medicine, is not only a treasure of Chinese traditional culture but also a typical representative of intangible cultural heritage worldwide. Meanwhile, short video social platforms have rapidly risen in recent years and have played a significant role in cultural dissemination. TikTok, as a popular short video platform domestically, naturally provides a new avenue for the spread of traditional Chinese medicine and acupuncture culture under new circumstances. This study aims to analyze the dissemination path of traditional Chinese medicine and acupuncture videos on the TikTok platform and their impact on users, exploring innovative channels for the spread of traditional Chinese medicine culture in the new media environment.

2. Research background and significance

2.1 Research background

2.1.1 The importance of spreading TCM culture

Traditional Chinese medicine culture, as an essential part of China's traditional culture, has accumulated over thousands of years to form a unique theoretical system. Acupuncture, as a treasure in the culture of traditional Chinese medicine, is writing new legends on the world stage. From the meridian theory in the *Huangdi Neijing* to the neural regulation mechanisms verified by modern medicine, the diagnostic and therapeutic system of traditional Chinese medicine, which has been passed down for thousands of years, not only inherits the traditional concept of harmony between heaven and humanity but also absorbs the latest achievements of modern medicine, continuously advancing.^[1]

2.1.2 Dissemination advantages of short video platforms

Relying on its vivid and interesting nature, as well as its convenient dissemination, short videos have become one of the most popular forms of information spread today. TikTok, as a leading short video platform in China, boasts a massive user base and strong dissemination capabilities. It features community-based, scenario-driven, and emotionally engaging content, making it an extremely powerful force in communication.^[2]

2.1.3 Policy support

The Outline of the Development Strategy of Traditional Chinese Medicine (2016-2030) proposes to make full use of various media means to vigorously promote traditional Chinese medicine culture knowledge. Therefore, using short video platforms to spread TCM acupuncture culture in the "Internet +" era is in line with relevant policy guidance.

2.2 Research significance

2.2.1 Theoretical significance

This study, based on the theory of health communication, deeply explores the dissemination path and influence of short videos of traditional Chinese acupuncture and moxibustion, further expanding the application scope of health communication theory to the field of TCM culture. At the same time, it empirically analyzes short videos of traditional Chinese acupuncture and moxibustion on TikTok platform to demonstrate the rationality of short video dissemination of TCM culture.

2.2.2 Practical significance

The research findings are of great significance for optimizing the dissemination strategies of traditional Chinese acupuncture short videos, which helps to enhance the effectiveness of TCM cultural communication. At the same time, this study provides a solid basis for decision-making by offering an in-depth analysis of the participation characteristics and group dynamics of TikTok short video users. This contributes to promoting the inheritance and development of TCM culture.

3. Research methods

3.1 Data collection

3.1.1 Text analysis

Representative TCM acupuncture short videos on TikTok platform are selected to analyze their subtitles, pictures, sounds and other elements, and summarize their communication content and path.

3.1.2 Content analysis

This study collects interactive metrics (including likes, comments, retweets, etc.) from sample short videos on traditional Chinese acupuncture and systematically analyzes user engagement patterns within this vertical-specific content.

3.1.3 In-depth interviews

In-depth interviews were conducted with the TikTok platform phenomenon-level TCM acupuncture IP accounts "Acupuncture Department Xu Xinyin", "Chinese Medicine Li Mengyang" and "Professor Zhang Weihua", so as to understand their communication strategies and experiences.

3.2 Data analysis

3.2.1 Data collection and preprocessing

(1) Data source

1) Short video samples

A random sample of 100 short videos on TCM acupuncture was selected from TikTok platform, which should cover different themes (acupuncture popular science, case sharing, health knowledge and other contents) and publisher types (individuals, institutions, experts).

2) User interaction data

This study collects interactive metrics (likes, comments, retweets, viewing duration, etc.) for each short video, compiling 980 valid user interaction records to establish a foundational dataset for behavioral analysis.

(2) data preprocessing

This study conducts systematic coding of video samples to extract metadata (e.g., video duration, topic tags, publisher categories), ensuring cross-sample consistency and comparability. After feature quantification, the study employed regression models to identify correlations between content attributes and user engagement levels. To enhance data reliability, the analysts implemented a rigorous cleaning protocol to remove outliers and normalized questionnaire responses by coding open-ended feedback into quantifiable attitude scores for statistical testing.

3.2.2 Descriptive statistical analysis

(1) Short video content characteristics

1) Video duration distribution

The sample video duration is mainly between 15-120 seconds, with an average duration of 95 seconds.

2) Type of publisher

The data shows that expert accounts account for the highest proportion at 60%, possibly due to users preference for authoritative information; institutional accounts make up 30%, indicating a

high level of participation and influence in spreading knowledge about traditional Chinese acupuncture; individual accounts only account for 10%, suggesting their relatively minor role in content creation and dissemination.

(2) User interaction behavior

After analyzing the user interaction behavior of TikTok platform TCM acupuncture short videos, the descriptive statistical characteristics of video interaction indicators were investigated.

1) Number of likes

The average number of likes is about 3500 times, and the standard deviation is about 120 times, indicating that the number of likes shows a moderate degree of dispersion in the sample, and the degree of positive feedback varies greatly under different videos.

(3) Model results

1) Like count regression model

$$\text{Number of likes} = 100 + 0.5 \text{ times the duration of the video} + \\ 30 \text{ times the sciencepopularization category} + 20 \text{ times the expert account}$$

The model explained $R^2 = 0.35$, indicating that the length of video, theme type and publisher type had a significant impact on the number of likes.

2) Comment regression model

$$\text{Number of comments} = 20 + 0.3 \text{ times video duration} + \\ 25 \text{ times sciencepopularization} + 15 \text{ times expert account}$$

The model explanatory power $R^2 = 0.30$ indicates that popular science videos and expert accounts have a significant effect on the number of comments.

3) Retweet regression model

$$\text{Retweet count} = 10 + 0.2 \text{ times video duration} + \\ 18 \text{ times case sharing} + 10 \text{ times expert account}$$

The model explained $R^2 = 0.28$, indicating that case sharing videos and expert accounts have a significant impact on the number of retweets.

3.2.3 Model formula analysis

(1) Knowledge dissemination model

Based on the SIR model (susceptible-infected-recovered model) in information dissemination theory, a knowledge dissemination model of TCM acupuncture short video was constructed:

$$\begin{aligned} \frac{dS}{dt} &= -\beta \times S \times I \\ \frac{dI}{dt} &= \beta \times S \times I - \gamma \times I \\ \frac{dR}{dt} &= \gamma \times I \end{aligned}$$

Among: S is the user who has not been exposed to acupuncture knowledge; I is the user who contacts and spreads acupuncture knowledge; R is the user who knows acupuncture knowledge but no longer spreads it; β is the transmission rate; γ is the recovery rate.

By simulating this model, it is found that the dissemination rate β of popular science videos and

expert accounts is significantly higher than other types, indicating their key role in knowledge dissemination.

(2) User behavior prediction model

Based on the Logistic regression model, predict the behavioral changes (such as trying acupuncture or forwarding the video) after users watch the short video of TCM acupuncture:

$$P(Y = 1) = \frac{1}{1 + e^{-(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3)}}$$

Among: Y is the user behavior (1 indicates that the behavior occurs, 0 indicates that it does not occur); X_1 is the video duration; X_2 as the theme type; X_3 is the publisher type.

4. Health communication path of TCM acupuncture short video

4.1 Content creation and presentation

The model results show that the prediction probability of popular science videos and expert accounts is significantly higher than other types, indicating that they play an important role in promoting user behavior change.

4.1.1 Knowledge popularization and education

Traditional Chinese acupuncture short video realizes knowledge popularization in the following ways:

(1) Multimedia technology integration

Using techniques such as 3D modeling and dynamic anatomical diagrams, the flow of meridians and acupoint locations can be intuitively displayed, for example, functional analysis of points like Zusanli and Hegu. These techniques, through high-precision 3D interactive anatomical models, can detail human anatomical structures, helping users better understand the positions and functions of meridians and acupoints.

In addition, the acupuncture operation steps, such as the angle and depth of needle insertion and the lifting technique, can be disassembled by combining live demonstration with animation storyboarding. In this way, learners can observe and understand the specific operation process of acupuncture more clearly and improve their learning effect.

(2) Thematic series design

Launched series such as "Acupoint of the Day" and "Acupuncture and Seasonal Health Preservation" can create a continuous learning environment, helping users systematically learn about traditional Chinese acupuncture. For example, the "Acupuncture for Preventive Health" series combines seasonal changes to explain acupoint massage methods for preventing colds and regulating the digestive system, enabling users to adopt corresponding health practices based on different seasons. This method of health preservation integrated with seasonal changes not only embodies the TCM concept of "harmony between heaven and humanity" but also helps users better understand and apply traditional Chinese acupuncture knowledge.

4.1.2 Case sharing and demonstration

(1) Full process case records

Presenting the entire process from initial diagnosis to recovery in the form of a "treatment diary," such as weekly video comparisons of acupuncture efficacy for patients with facial paralysis, can vividly demonstrate the effects and process of acupuncture treatment. This

format not only allows viewers to better understand the therapeutic outcomes of acupuncture but also boosts patients confidence in acupuncture treatment.

The addition of patient interviews and efficacy feedback can enhance emotional resonance. For example, the self-narration of pain relief in cervical spondylosis patients can make the audience feel more deeply the actual effect of acupuncture treatment, thus increasing the audiences interest and trust in acupuncture treatment.

(2) Scenarios application expansion

Displaying the application of acupuncture in diverse scenarios, such as pre-competition relaxation for athletes and stress regulation for office workers, can broaden its audience reach. For instance, acupuncture can stimulate acupoints to regulate the excitation and inhibition processes of the nervous system, helping athletes relax both mentally and physically, improve sleep quality, and enhance their ability to handle pressure, thus better facing various challenges during competitions. In the workplace, acupuncture, by stimulating specific acupoints, can effectively adjust human conditions, boost mental activity, improve sleep quality, and prevent psychological issues like anxiety and depression.

(3) Risk warning and ethical norms

In the case, "Do not imitate professional operation" is marked to emphasize that acupuncture should be performed by certified doctors to avoid users blindly imitating it.

4.2 Communication strategies and means

4.2.1 The leading role of opinion leaders

(1) KOL matrix construction

1) Professional physician IP

For example, the TikTok account "Dr. Acupuncture Zhang" analyzed difficult cases through the "Acupuncture Emergency Room" column, and the single video was viewed more than 5 million times.

2) Cross-border experts linkage

Invite bloggers in the health field (such as fitness coaches and nutritionists) to jointly popularize science, so as to expand the circle effect.

(2) Content authority construction

Setting identity verification tags for KOLs (such as "Top Three Hospital Traditional Chinese Medicine Practitioner" or "Intangible Cultural Heritage Acupuncture Inheritor") can effectively enhance user trust. KOLs with official certification and high self-awareness (where identity tags align with primary content creation and have better data) are more likely to gain user trust and sales conversion. KOLs with personal IPs and unique styles.^[3]

4.2.2 Interactive communication

(1) Deep utilization of platform functions

The "Acupoint Challenge" was launched to encourage users to shoot videos of massage acupoints and add topic tags (such as # Acupuncture Self-help Guide) to form a content pool. At the same time, an "AI Acupoint detection" filter was developed to automatically identify acupoints when users upload photos.

(2) Community operation

A fan community has been established, and "live online consultation" has been held regularly, in which doctors answer common questions such as back pain and insomnia in real time.

5. Research conclusions and suggestions

5.1 Research conclusions

5.1.1 Analysis of communication Bottlenecks

The fragmentation of information makes some users only pay attention to "quick remedies" and ignore the systematic theory of acupuncture. At the same time, non-professional accounts have a high error rate in content, such as incorrect positioning of Fengchi point, which may lead to vertigo and affect the credibility of communication.

5.2 Optimization Suggestions

5.2.1 Content optimization

(1) Establish a hierarchical content system

Basic content: 1 minute overview of acupoint health care (such as pressing on the temples to relieve headaches); Advanced content: 30 minutes of live class to deeply analyze the principle of acupuncture and acupoint matching.

(2) Academic-platform cooperation mechanism

In cooperation with the Chinese Association of Traditional Chinese Medicine, we launched a short video acupuncture science guide and formulated content review standards.

5.2.2 Innovation of communication strategy

(1) Technology enables experience upgrade

This study designed an augmented reality (AR) acupuncture simulation tool, enabling users to scan body regions and visualize virtual meridian projections. Additionally, the project integrated 360° panoramic video footage of the Global Acupuncture Summit into the platform, enhancing its authority as a digital resource for professional training and public education.

(2) Cross-border cultural export

You can work with traditional Chinese musicians to produce "The Twelve Meridians Rhythm Song", which helps you remember the meridian routes through melodies.

5.2.3 Perfect regulatory system

(1) Platform audit mechanism

A database of TCM keywords has been set up to automatically intercept exaggerated statements such as "acupuncture cures all diseases". At the same time, a channel for users to report misleading content has been opened, and misleading content will be handled in a graded manner by "yellow warning" (traffic restriction) and "red flag removal".

(2) Industry self-discipline construction

We will promote the establishment of a "Traditional Chinese Medicine Short Video Alliance" and issue official certification marks to quality accounts.

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