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A Study on the Use of Real Cases in Short Videos for Lung Cancer Public Awareness and Users' Willingness to Seek Relevant Health Information

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Abstract

This study aims to explore the impact of real case presentations in medical and health science popularization short videos on users' willingness to seek health information. With the popularity of social media, short videos have become a key channel for the public to obtain health information. This study analyzed how different levels of display of real cases in short videos affect users' willingness to seek health information through perceived threats and perceived efficacy through experimental design. The study used the Simplified Disease Perception Questionnaire (BIPQ), the Fear of Disease Progression Simplified Scale (FoP-Q-SF), and the General Self Efficacy Scale (GSES) for measurement. The results showed that the degree of displaying real cases significantly increased users' willingness to seek health information. Perceived threat and perceived efficacy play a mediating role between short video content and user willingness. The study emphasizes the importance of using real cases in health education, providing strategies for enhancing public health awareness and behavior change. The research is limited by the sample size and does not cover all influencing factors. Future studies need to expand the sample size and explore in depth the dissemination effects of different health information.

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Keywords: Lung Cancer Science Popularization Short Videos; Real Case Studies; Information Seeking; Perceived Threat; Perceived Efficacy

Research Background

Lung cancer is one of the most serious malignant tumors in the world at present. The incidence rate and mortality of lung cancer in China are on the rise. There will be approximately 4824700 new cancer cases and 2574200 new cancer deaths in China in 2022. Lung cancer, colorectal cancer, thyroid cancer, liver cancer, and stomach cancer are the top 5 types of cancer, accounting for 57.42% of new cancer cases. Lung cancer, liver cancer, stomach cancer, colorectal cancer, and esophageal cancer are the five main causes of cancer death, accounting for 67.50% of total cancer deaths. The primary type of cancer and the leading cause of death are both lung cancer. Widely popularizing science can help the public to prevent, detect, and treat lung cancer early.

In the Internet era, social media short video platform has become an important medium for people to obtain information. Short video for medical and health science popularization has developed rapidly in recent years. Doctors in some well-known hospitals have become medical science bloggers with millions of fans. They use professional knowledge to play an important role in improving health awareness and preventing diseases for users.

In June 2025, the Communication and Data Science Laboratory of the School of Journalism at Fudan University and other institutions released the "Evaluation Report on Health Science Popularization of Chinese Doctors in the Digital Age" (Phase II)

(hereinafter referred to as the "Report"), which stated that there are 1.074 billion online audio-visual viewers nationwide, of which 92.1% have been exposed to health science popularization content through short video platforms, and 63% of these viewers have developed the habit of regularly following health science popularization accounts. The report believes that with diverse demands and traffic impact, doctors' health education on short video platforms is presenting a complex and three-dimensional form: among them, respiratory diseases such as pulmonary nodules and lung cancer constitute the topic of lung health in the content ecology of doctors' health education, becoming the "traffic center" of the algorithm era.

The selection of lung cancer cases in this study followed the principles of typicality and accessibility. For researchers, the available experimental materials that can be visually displayed are mainly radiology case data; For non-medical personnel watching videos, using image materials can provide a more direct and simple understanding of the underlying disease status, with lung cancer being a more obvious category.

Previously, statistics from multiple hospitals and public health projects in China indicated that about 80% of patients were already in the late stage of treatment and had lost the opportunity for radical surgery; 0After conducting low-dose CT (LDCT) screening in asymptomatic high-risk populations, the early (stage I) detection rate can be increased to 76%-85%, but the proportion of active screening is low nationwide, and the overall early detection rate is still between 2%-5% It can be seen that the current Chinese people have insufficient awareness of lung cancer screening, and the

efforts of lung cancer science popularization are not enough and the effect is not good.

Previous studies have shown that images have a higher stimulating effect on the human brain than textual information. The picture superiority effect was first proposed by Nelson et al., which means that under the same encoding time and cognitive load conditions, participants' free recall and recognition scores of images are significantly better than those of corresponding text. Based on the urgency of lung cancer science popularization, this study aims to explore whether the use of real cases in medical science popularization short videos can stimulate users' willingness to seek health information, and to what extent information display can effectively stimulate users' willingness to seek information, promote changes in health behavior, and provide empirical basis for future health communication strategies of this kind. The research results will help optimize the dissemination of health information, enhance the attractiveness and effectiveness of popular science content, and thus have a positive social impact in the field of public health.

The purpose and value of this study lie in: First, short-form videos are uniquely suited to real-case appeals because their vertical, full-screen format and autoplay function maximize vividness and minimize user effort-conditions under which fear appeals are most persuasive. Unlike text or posters, CT images and patient stories can be presented in motion within seconds, amplifying both perceived threat and narrative transportation. Second, health-information-seeking intention is a pivotal, proximal outcome: meta-analyses show it is the strongest cognitive predictor of subsequent screening uptake and preventive behavior. Focusing on intention therefore captures

the immediate cognitive impact of micro-video exposure while remaining ethically feasible in an online experiment. By clarifying how varying intensities of real-case visuals translate into threat/efficacy appraisals and intention, the present study offers actionable evidence for designers and platform regulators striving to balance engagement with public-health benefits.

Introduction

Theoretical Model

This study used SOR. Based on the stimulus response theory, Mehrabian et al. proposed the "Stimulus Organism Response (S-O-R)" model, which incorporates bodily variables. The model suggests that individuals' responses to external stimuli are not mechanical or passive, but rather subjective and active. Individuals have the ability to process effective information under stimuli to make rational behavioral decisions.

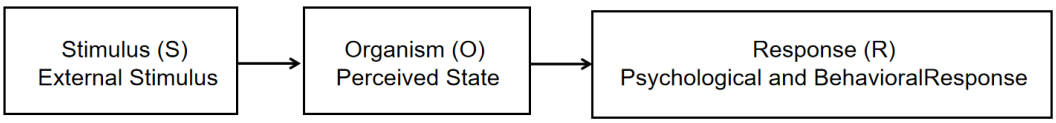


Figure 1: SOR theoretical model

Note. Adapted from Mehrabian (1974).

Medical Science Popularization Short Videos

The 55th Statistical Report on the Development of Internet in China shows that by December 2024, the number of Internet users in China has reached 1.108 billion,

an increase of 16.08 million over December 2023; The Internet penetration rate reached 78.6%, 1.1 percentage points higher than that in December 2023. According to the survey of the Institute of Health Communication Index, Tik-tok ranks first in the number and influence of certified doctors' health science popularization accounts, and Tik-tok has become the first platform for health science popularization. Short videos not only meet the public's demand for health information and services, but their intuitive, novel, and "short, flat, and fast" forms of expression also bring convenience and fun to the public's healthy life. According to the data, among the certified doctor accounts on the Tik-tok platform, the top three influential ones are Qianweizi in the medical path, Heli in the misty rain and having skills in mind. The number of fans is 28.446 million, 7.552 million, and 13.111 million respectively.

The research on medical and health science popularization short videos in academia has gradually increased in recent years, mainly focusing on the content, form, effect, and path of dissemination. In the study of dissemination content, Meng Shengjun and Cheng Jiayi analyzed the constituent elements and dissemination mechanism of health science popularization short videos based on the "ELM model" theory ; Analysis of Content Production and Dissemination of Health Science Popularization Short Videos by Kuang Wenbo and Jiang Zewei from Discourse Sources, Prospect Fields, and Communication Methods; Chen Nuan took the Tik-tok number of Xiangya Hospital of Central South University as an example to analyze, and believed that there were problems in the authoritative theme, rich content, and unitary presentation of short medical science videos. In the optimization of the

transmission path, Lei Licai and Chen Lvmin pointed out that the conditional variables with topic guidance and content as a healthy lifestyle played a more universal role in achieving high transmission effects of health science popularization short videos; Ying Jun et al. mentioned in the presentation of health science popularization short videos that doctors can gain more recognition from users by mixing life stories in the process of knowledge sharing. Multimedia integration can vividly convey health knowledge to the public, and the richness of media has to some extent increased user engagement. Therefore, in health science short videos, the richness of content has a certain impact on the dissemination effect.

Research on The Willingness/Behavior of Seeking Health Information

In current research on information seeking behavior, TAM(Technology Acceptance Model)、TPB(Theory of Planned Behavior)、CMIS(Comprehensive Model of Information Seeking)、HBM(Health Belief Model Hochbaum)Models such as CMIS and TPB clearly state the willingness to seek information, especially those related to health information. CMIS and TPB believe that willingness is the output of the combined effects of "health factors" and "media factors" or the only direct variable that predicts actual information seeking behavior. Information seeking willingness variables directly influenced by media information cannot directly affect behavior.

When searching on CNKI with the keyword "health information seeking", only 96 academic journal articles were retrieved, and there were even fewer related studies on health information seeking willingness or attitude. Only one qualitative research

paper on information seeking attitude was retrieved from a medical journal. The search results mainly focused on the study of health information seeking behavior. The research on health information seeking behavior is aimed at different fields. In the research on health information seeking subjects, it is mainly divided into the elderly, women and college students. In the research on the content of new health information seeking, the largest number is diseases, including chronic diseases (diabetes, rheumatism, lupus erythematosus, etc.), mental diseases (autism, depression, anxiety, etc.) and cancer, as well as information seeking and searching behavior research on pregnancy, network health, betel nut, etc.

Regarding the research on lung cancer science popularization and information seeking, through CNKI search, there are only 14 articles that do not distinguish between literature levels and disciplines. There is only one study on the exploration of community lecture science popularization forms, live science popularization, and online science popularization mode exploration. There is only one study on the implementation of online science popularization psychological health education in elderly lung cancer chemotherapy patients. However, there is no research on short video science popularization of lung cancer, which has become a research gap in this field.

Perceived Threat and Perceived Effectiveness

Perceived Threat and Perceived Efficiency are core concepts in Protection Motivation Theory (PMT), proposed by Richard Rogers. This theory was first published in 1983 to explain and predict behavioral changes in individuals when

facing health risks. Perceived threat involves two parts: Perceived Severity and Perceived Vulnerability. Perceived severity refers to an individual's assessment of the serious consequences of potential threats, while perceived susceptibility refers to an individual's assessment of the potential consequences they may experience. Perceived efficacy includes self-efficacy and response efficacy. The former refers to an individual's evaluation of their ability to adopt recommended behaviors, while the latter refers to an individual's belief in the effectiveness of recommended behaviors. In the field of health psychology, the concept of perceived threat is often used to explain how individuals assess health risks and adopt protective behaviors. When individuals perceive the severity and susceptibility of a certain health risk (such as a disease), they may feel threatened and may take action to reduce this threat. Perceived efficacy is closely related to individual motivation, goal setting, and behavioral change. When individuals perceive that they have the ability to perform behaviors that contribute to achieving desired outcomes, they are more likely to take action.

Extant research has privileged source credibility and narrative manner over a more granular design lever: the intensity with which real patient cases are visually displayed. Although the Comprehensive Model of Information Seeking (CMIS) and Protection Motivation Theory (PMT) consistently cast perceived threat and perceived efficacy as key drivers of information-seeking intention, their joint response to visual case cues in short-form video has not been tested. A handful of studies capture intention itself, yet the psychological chain that translates content features into willingness to seek information remains opaque. The full sequence "real-case

intensity→perceived threat/efficacy→information-seeking intention" is therefore still theoretically and empirically vacant. Evidence from doctor-patient communication shows that high-quality, concrete health messages improve adherence and outcomes. Short video's affordances-CT scans, patient narratives, visible treatment trajectories-make lung-cancer risk both vivid and credible. These images are likely to activate two simultaneous pathways: they heighten perceived threat by making severity and susceptibility salient, while stories of arduous late-stage care can lower perceived efficacy by undermining confidence in one's ability to cope. Within a Stimulus-Organism-Response (S-O-R) framework, the resulting "high threat-low efficacy" state functions as an internal drive that motivates compensatory information seeking.

Accordingly, we advance three hypotheses:

H1: Greater real-case intensity in lung-cancer health-education short videos will increase users' intention to seek lung-cancer-related information.

H2a: Perceived threat mediates this effect-higher intensity elevates threat, which in turn strengthens intention.

H2b: Perceived efficacy also mediates-higher intensity reduces efficacy, thereby further increasing intention.

By nesting PMT's core constructs inside the S-O-R model, the present study offers the first test of the full pathway "real-case intensity→perceived threat/efficacy →information-seeking intention" in the short-video context. It addresses two gaps: (1) treating real-case presence as a continuous rather than binary variable, and (2)

specifying how threat and efficacy jointly convert media features into information-seeking intention (Figure 2).

Key variables are defined as follows:

Independent variable: intensity of real-case presentation (three levels: no case, verbal case only, verbal case plus medical images).

Dependent variable: intention to seek lung-cancer-related information after viewing.

Mediating variables: perceived threat and perceived efficacy.

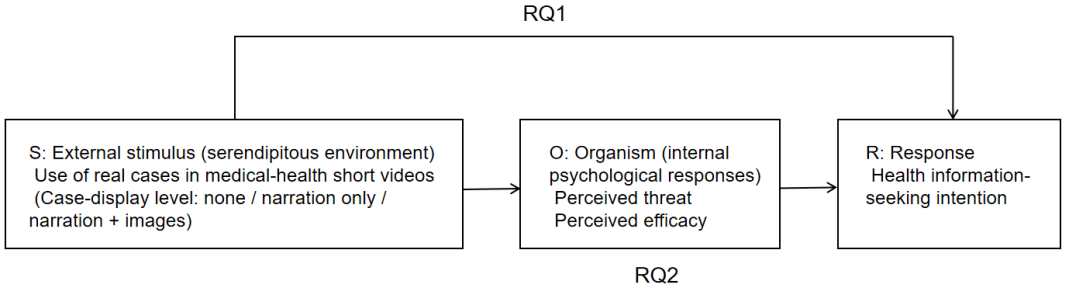


Figure 2: The impact model of medical and health science popularization short videos on the willingness to seek health information

Materials and Methods

Sampling Procedure and Sample Characteristics

Sampling Procedure

The experiment was hosted on Wenjuanxing (SoJump). To reach active users of short-form video platforms, the survey link was disseminated via WeChat Moments, WeChat groups, Xiaohongshu, Douyin, and Weibo. A total of 200 responses were collected; after screening for attention-check failures, excessive or insufficient

completion time, and ineligibility criteria (health-care professionals or personal history of lung cancer), 122 valid questionnaires remained (Control: n=38; Experimental Group 1: n=42; Experimental Group 2: n=42).

Sample Characteristics

Of the 122 participants, 41% were male and 59% female. Age distribution was as follows: <18 yr (5.26%), 18-25 yr (28.95%), 26-30 yr (7.89%), 31-40 yr (10.53%), 41-50 yr (7.89%), 51-60 yr (26.32%), >60 yr (13.16%). Educational attainment: below college (40.48%), college diploma (11.9%), bachelor's degree (38.1%), postgraduate or above (9.52%).

Instrumentation

Each participant viewed one video immediately before completing the questionnaire. The control group watched Video 1 (general lung-cancer knowledge only); Experimental Group 1 watched Video 2 (general knowledge plus verbal real-case narrative); Experimental Group 2 watched Video 3 (identical script to Video 2 but supplemented with diagnostic images and CT scans). All videos were recorded by a certified pulmonologist officially verified by the platform. The real cases were genuine clinical episodes encountered by the physician and were used to introduce the topic; no identifiable patient information was shown.

The survey contained two sections: video stimulus and measurement items.

Video Stimuli

Video 1 provided basic information on lung-cancer risk factors and prevention. Video 2 added a real-patient story delivered verbally. Video 3 retained the same audio

but included on-screen pathology photos and CT images to increase visual intensity.

Measurement Items

Perceived threat was measured with the Brief Illness Perception Questionnaire (BIPQ) and the Fear of Progression Questionnaire-Short Form (FoP-Q-SF); perceived efficacy was assessed with the General Self-Efficacy Scale (GSES). All scales used 5-point Likert formats and demonstrated good reliability (Cronbach's α=0.787, 0.870, and 0.87 respectively). Wording was adapted to the lung-cancer context of the videos. An attention-check item (item 14) was embedded to identify inattentive respondents. The final questionnaire comprised 36 items, including demographics, information-seeking intention, perceived threat, and perceived efficacy.

Scoring direction: higher scores indicate greater intention to seek health information (item 5), higher perceived threat (items 6-26, excluding item 14), and lower perceived efficacy (items 27-36).

Perceived Threat. For the measurement of perceived threats, this study used the Simplified Disease Perception Questionnaire (BIPQ) and the Fear of Disease Progression Simplified Scale (FoP-Q-SF).

The Brief Illness Perception Questionnaire (BIPQ) was proposed by Broadbent, Petrie, Main, &Weinman in a 2006 article published in the Journal of Psychosomatic Research. It is a questionnaire used to assess a patient's cognitive and psychological state of their own illness, consisting of 9 items, aimed at quickly evaluating the cognitive and emotional representations of the disease. The Chinese version of the Fear of Disease Progression Simplified Scale (FoP-Q-SF) was mentioned in an article

published in the Chinese Journal of Nursing in 2015.The original scale was developed by Watson et al. to evaluate cancer patients' fear of disease progression. The localization work is carried out through a two-person direct translation back translation method, and is formed through expert group evaluation and cultural adjustment. This scale is specifically designed to assess cancer patients' fear of disease progression, which is a reactive, conscious fear that may persist for a long time and seriously affect the patient's daily life. The scale includes two dimensions: social family and physiological health, with a total of 12 items. These items involve patients' concerns about various negative impacts that disease progression may bring, such as anxiety, pain, decreased work ability, and the impact on their families. Including the following items:

6. I think lung cancer has a great impact on my life

7. I think if I get lung cancer, it will persist indefinitely

8. I feel like I can't control my concerns about lung cancer

9. I think treatment can greatly help control lung cancer

10. I think the symptoms caused by lung cancer can be very serious (or there may be many serious symptoms)

11. I am very concerned about information related to lung cancer

12. I feel like I know very little about lung cancer

13. Lung cancer can affect my emotions (such as making me angry, scared, depressed, or depressed)

15. I became anxious at the thought that lung cancer could further develop.

16. I feel nervous before a doctor's appointment or regular check-up.

17. I am afraid of the pain caused by lung cancer.

18. The idea of reducing work efficiency due to lung cancer troubles me.

19. When I am anxious, I experience some physical discomfort such as increased heart rate, stomach pain, and nervousness, which are related to lung cancer

20. I am concerned that my descendants may develop lung cancer (if lung cancer has a genetic predisposition)

21.If I get sick, my daily life may have to rely on others, which makes me feel anxious.

22.I'm worried that sometimes I won't be able to continue my hobbies due to lung cancer.

23.I am concerned that there may be some significant treatments during the process of lung cancer.

24.I am concerned that the medication used to treat lung cancer may harm my body.

25.I am very worried about what will happen to my family if something happens to me due to lung cancer.

26.The idea that I may not be able to work due to lung cancer is very distressing to me.

Perceived Efficacy. The General Self Efficacy Scale (GSES) is used to measure perceived efficacy. The General Self Efficacy Scale (GSES) was developed by Schwarzer, consisting of 10 items, concerns an individual's confidence when faced

with setbacks or difficulties. Including the following items:

27.After learning about lung cancer information, I am able to confidently handle important matters related to lung cancer.

28.Even in the face of the challenge of lung cancer, I am able to maintain my efforts.

29.I am able to resist temptations that may hinder me from taking preventive measures against lung cancer.

30.Even in the face of great pressure from lung cancer diagnosis, I can remain calm.

31. I can find several ways to deal with lung cancer related matters that are difficult for me.

32. I am able to persist in my goals, even when faced with obstacles in achieving lung cancer prevention and a healthy lifestyle.

33.I can handle most issues related to lung cancer as long as I put in enough effort.

34.Even if someone holds a different view on lung cancer, I can still firmly pursue my health goals.

35.I am able to maintain focus until I achieve goals related to lung cancer prevention and early detection.

36.I have confidence in my ability to handle most things related to lung cancer.

Willingness to Seek Health Information Related to Lung Cancer. Often, a question is used to directly measure willingness, using the Likert five scale (very willing=5,

very unwilling=1).

Post coding Verification

After the experiment, this study conducted post coding verification on three short videos and quantified the Real Case Intensity (RCI) using three-dimensional indicators. The specific dimensions and ratings are as follows: ①Visibility (VIS): No image=0, Oral narration without image=1, Oral narration+image=2; ②Narrative completeness (NC): The case includes four stages: onset, diagnosis, treatment, and outcome. Each stage is scored 1 point, ranging from 0 to 4 points; ③Emotional Intensity (EI): Independently assessed by two trained coders using a 5-point Likert scale, ICC=0.87。The final RCI is (VIS+NC+EI)/3, forming a continuous variable of 0-3.67, which is divided into three levels according to the third quartile: low (0-1.00), medium (1.01-2.33), and high (2.34-3.67), corresponding to the control group, experimental group 1, and experimental group 2, respectively. The measured mean values are 0.33, 2.16, and 3.33; Single factor ANOVA showed significant differences between groups, $F(2,6) = 186.50$, $p < 0.001$, Confirm successful manipulation.

Analytical Strategy

Step1: Data Cleaning and Pre-processing

After retrieving the raw questionnaires from Wenjuanxing, we first excluded respondents who: (i) failed the attention-check item (Q14, “please select strongly disagree”), (ii) completed the survey in < 2 min or > 30 min, or (iii) self-reported as health-care professionals or having/had lung cancer or caregiving experience. The final effective sample comprised 122 participants, yielding a valid response rate of

61.0%.

Step2: Normality and Reliability Checks

Shapiro-Wilk tests indicated that perceived threat and information-seeking intention scores deviated significantly from normality ($p<0.05$); hence, non-parametric tests were used for group comparisons. Internal consistency was satisfactory for the overall scale (Cronbach's $\alpha=0.817$), FoP-Q-SF ($\alpha=0.91$), and GSES ($\alpha=0.87$).

Step3: Manipulation Check

A one-way ANOVA on the post-hoc coded Real-Case Intensity Index confirmed that the three videos differed significantly in intensity, $F(2,6)=186.50$, $p<0.001$.

Step4: Main-Effect Analysis

Given the non-normal distribution of information-seeking intention, the Kruskal-Wallis H test was employed to compare the three groups; pairwise comparisons were conducted with Bonferroni-corrected Mann-Whitney U tests, and effect sizes are reported as Cohen's r.

Step5: Mediation Analysis

Following Baron & Kenny's (1986) three-step approach and bootstrapping:

(1) Total effect: regressing information-seeking intention (q5) on experimental group (group) to estimate path c.

(2) Mediation paths:

(a) regressing perceived threat (threat) and perceived efficacy (efficacy) on group to test path a;

(b) regressing q5 simultaneously on group, threat, and efficacy to estimate paths b and the residual direct effect c'.

(3) Indirect effect: SPSS built-in bias-corrected bootstrap (5,000 resamples, 95% CI) was used to estimate the indirect effects of threat and efficacy; intervals excluding zero indicate significant mediation.

Results

After collecting the questionnaire, invalid data were cleaned up based on the control option questions set in the scale and the specific answer situation. Finally, 38 valid data were collected from the control group, 42 valid data from the experimental group 1, and 42 valid data from the experimental group 2.

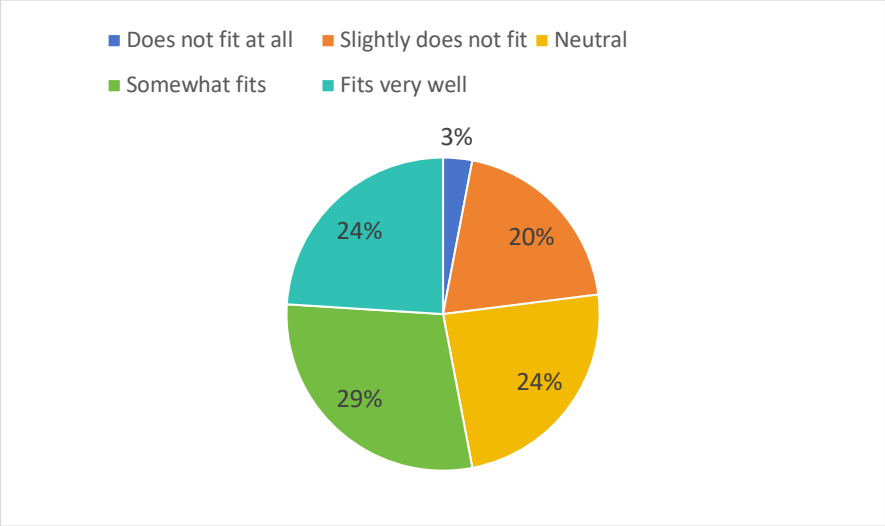


Figure 3: Information-Seeking Intention Distribution After Watching Videos

Note. n=122.

From the pie chart, it can be seen that after watching lung cancer science popularization short videos, users' views on "willing to search for lung cancer related health information" are very consistent, accounting for 24%, relatively consistent accounting for 29%, generally consistent accounting for 24%, and a total of 72%. Therefore, users have a strong willingness to seek information. Conduct reliability and validity tests on the obtained data, using Cronbach's alpha, combination reliability (CR), and average variance extraction (AVE) to evaluate the reliability and validity of the measurement tools. The results showed that the Cronbach alpha of the overall scale was 0.817 (40 items), which was higher than the commonly used threshold of

0.80; FoP-Q-SF (threat dimension) Cronbach alpha=0.91, CR=0.92, AVE=0.52; GSES (efficacy dimension) Cronbach alpha=0.87, CR=0.88, AVE=0.50. All indicators meet the reliability and validity criteria proposed by Hair et al. (2022) (α>0.80, CR>0.70, AVE⩾0.50), indicating good internal consistency and convergent validity of the scale.

Table 1 Reliability Statistics

Clone Bach Alpha	Number of Items	Number
.817		40

Table 2 Validity Test Results

Table	Cronbach α	CR	AVE	Conclusion
FoP-Q-SF (threat)	0.91	0.92	0.52	Aggregation validity acceptable
GSES (efficacy)	0.87	0.88	0.50	Aggregation validity acceptable

Differential testing.

H1: The higher the degree of presentation of real cases in medical and health science popularization short videos, the stronger the user's willingness to seek health information.

Table 3 Normality Test Results

	Kolmogorov-Smirnov(V)a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
threat	.068	122	.200*	.978	122	.046
efficacy	.080	122	.053	.986	122	.260
q5	.192	122	.000	.901	122	.000

*. This is a lower bound of the true significance.

a. Lilliefors significance correction

As shown in the table, the significance of perceived threat and willingness to seek health information related to lung cancer are both less than 0.05, indicating that the two data are non-normally distributed. Therefore, the independent sample Kruskal Wallis test in SPSS non parametric test was selected for difference testing. Group represents different experimental groups, and q5 represents the willingness to seek health information related to lung cancer. The inspection results are as follows:

Table 4 Summary of Difference Test for Hypothesis 1

Null Hypothesis	Test	Sig.	Decision
The distributions of q5 are the same across the categories of group.	Independent-Samples Kruskal-Wallis Test	.000	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .050.

Table 5 Independent-Samples

Kruskal-Wallis Test Results

Total N	122
Test Statistic	69.329a
df	2
Asymptotic Sig. (2-tailed)	.000

a. The test statistic is adjusted for ties.

Table 6 Pairwise Comparisons of Real-Case Intensity Levels on

Lung-Cancer-Related Health Information-Seeking Intention

Sample 1 – Sample 2	**Test Statistic**	**Std. Error**	**Std. Test Statistic**	**Sig.**	**Adj. Sig.[a]**
1 – 2	–23.012	7.656	–3.006	.003	.008
1 – 3	–62.679	7.656	–8.187	.000	.000
2 – 3	–39.667	7.462	–5.316	.000	.000

Each row tests the null hypothesis that the distributions of the two samples are the same.

Asymptotic two-tailed significances are displayed; α=.05.

[a] Bonferroni adjustment for multiple comparisons.

The analysis results from the above table are as follows:

Hypothesis test summary results: The distribution of q5 varies among different

group categories in H1 of this study. To test this hypothesis, we used the independent sample Kruskal Wallis test, which is a non-parametric method suitable for comparing the distribution differences of three or more independent samples. The test results showed a significance level of p<.001, which is much lower than the significance level we set at 0.050. Therefore, we reject the null hypothesis and accept the alternative hypothesis, believing that at least two group categories have significant differences in the distribution of q5.

Kruskal Wallis test results: The independent sample Kruskal Wallis test statistic is 69.329, with a degree of freedom of 2, and the corresponding asymptotic significance of the two-sided test is p<.001. This indicates significant differences in the distribution of q5 among the three group categories. The test statistic has been adjusted for the bound value.

To further determine which group-categories have significant differences, we conducted pairwise comparisons. The Bonferroni correction method was used to adjust the significance values to control for the risk of increased first type errors that may arise from multiple comparisons. The results of paired comparison are as follows:

The comparison between group 1 and group 2 showed a significance of p=.003<0.05, and the adjusted significance was p=.008 < 0.05, indicating a significant difference in the distribution of q5 between the two groups.

The comparison between group 1 and group 3 shows a significance of p < .001, and the adjusted significance is also p<.001, indicating a significant difference in the distribution of q5 between the two groups.

The comparison between group 2 and group 3 shows a significance of p<.001, and the adjusted significance is also p<.001, indicating a significant difference in the distribution of q5 between the two groups.

Conclusion: The results of Kruskal Wallis test and paired comparison both indicate significant differences in the distribution of q5 among different group categories, supporting research hypothesis one.

Intermediary effect test

Research hypothesis 2: H2a: The stronger the perceived threat of watching and using medical and health science popularization short videos, the stronger the user's willingness to seek health information. H2b: The lower the perceived efficacy of watching and using medical and health science popularization short videos, the stronger the user's willingness to seek health information.

The SPSS linear regression test includes the following steps:

Step 1: First, test the total effect of the independent variable on the dependent variable.

Equation 1: Y=cX+e1. In this study, the independent variable X is the degree of display of real cases of lung cancer science popularization short videos (group variable in the table), and the dependent variable is the willingness of users to seek health information (item five, q5 in the questionnaire). The results are as follows:

Table 7 Model Summary: Effect of Real-Case Intensity in Lung-Cancer Short Videos on Health Information-Seeking Intention

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics				
					R^2 Change	F Change	df 1	df 2	Sig. F Change
1	.745a	.555	.536	.761	.555	28.944	5	116	.000

[a]. Predictors: (Constant), q4, q1, group, q3, q2

Table 8 ANOVA: Effect of Real-Case Intensity on Health Information-Seeking Intention

model		Sum of Squares	df	均方	F	Sig.
1	Regression	83.758	5	16.752	28.944	.000b
	Residual	67.136	116	.579		
	Total	150.893	121			

[b]. Dependent variable: q5; Predictors: (Constant), q4, q1, group, q3, q2

Table 9 Regression Coefficients: Effect of Real-Case Intensity on Health Information-Seeking Intention

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(constant)	1.065	.558		1.909	.059
	group	1.035	.089	.753	11.606	.000
	q1	-.024	.144	-.011	-.169	.866
	q2	.010	.055	.016	.184	.854
	q3	.068	.075	.076	.901	.369
	q4	.000	.010	-.001	-.014	.989

Dependent variable: q5

Model Summary: The multiple linear regression model used in this study includes control variables q1, q2, q3, q4, as well as the influence of the main independent variable group on the dependent variable q5. The R value of the model is 0.745, indicating a strong positive correlation between the independent variable and the dependent variable. The R-squared value is 0.555, which means that the model can explain 55.5% of the variation in the dependent variable q5. The adjusted R-squared value is 0.536, taking into account the number of independent variables in the model and adjusting the R-squared to avoid overfitting. The standard estimation error is 0.761, which is the standard measure of the difference between the model's predicted value and the actual value. The statistical changes show that the R-squared change is 0.555, the F-squared change is 28.944, the degree of freedom 1 is 5, the

degree of freedom 2 is 116, and the significant F-squared change is less than 0.001 ($p<.001$), indicating that the independent variables in the model have significant predictive power on the dependent variable.

ANOVA results: ANOVA analysis further confirmed the significance of the model. The sum of squares for regression is 83.758, with 5 degrees of freedom and a mean square of 16.752. The corresponding F-value is 28.944, and the significance level is less than 0.001 ($p<.001$). This indicates that the independent variables in the model have significant predictive power for the dependent variable q5.

In the coefficient table, the non-standardized coefficient (B) of the group variable is 1.035, the standard error is 0.089, the standardized coefficient (Beta) is 0.753, the t-value is 11.606, and the significance level is less than 0.001 ($p<.001$). This indicates that for every unit increase in the group variable, the expected value of the dependent variable q5 will increase by 1.035 units, and this effect is statistically significant. The coefficients of the control variables q1, q2, q3, and q4 did not reach statistical significance. The coefficient of q1 was -0.024, q2 was 0.010, q3 was 0.068, and q4 was close to 0, with p-values greater than 0.05, indicating that the impact of these control variables on q5 was not statistically significant.

Step 2: Test the effect of the independent variable on the two mediating variables.

Formula 2: $M=aX+e_2$

The effect of different display levels of real cases in lung cancer science popularization short videos on perceived threats:

Table 10 Model Summary: Effect of Real-Case Intensity on Perceived Threat

					Change Statistics				
Model	R	R^2	Adjusted R^2	Std. Error of Estimate	R^2 Change	F Change	df 1	df 2	Sig.F Change
1	.609a	.371	.344	8.406	.371	13.689	5	116	.000

[a]. Predictors: (Constant), q4, q1, group, q3, q2

Table 11 ANOVA: Effect of Real-Case Intensity on Perceived Threat

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4836.572	5	967.314	13.689	.000b
	Residual	8196.814	116	70.662		
	Total	13033.385	121			

a. Dependent variable: threat

[b]. Dependent variable: threat; Predictors: (Constant), q4, q1, group, q3, q2

Table 12 Regression Coefficients: Effect of Real-Case Intensity on Perceived Threat

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(常量)	57.641	6.165		9.350	.000
	group	7.589	.986	.594	7.700	.000

q1	1.580	1.593	.074	.992	.323
q2	.420	.613	.069	.685	.495
q3	.013	.834	.002	.016	.987
q4	-.109	.115	-.073	-.948	.345

a. Dependent variable: threat

This model aims to evaluate the effects of the independent variable group and control variables q1, q2, q3, and q4 on the dependent variable threat. The R value of the model is 0.609, indicating a moderate positive correlation between the independent and dependent variables. The R-squared value is 0.371, indicating that the model can explain 37.1% of the variation in the dependent variable threat. The adjusted R-squared value is 0.344, taking into account the number of independent variables in the model and adjusting the R-squared to avoid overfitting. The standard estimate error is 8.406, which is the standard measure of the difference between the model's predicted value and the actual value. The statistical changes show that the R-squared change is 0.371, the F-squared change is 13.689, the degree of freedom 1 is 5, and the degree of freedom 2 is 116. The significant F-squared change is less than 0.001 ($p<.001$), indicating that the independent variables in the model have significant predictive power on the dependent variable.

ANOVA results: ANOVA analysis further confirmed the significance of the model. The sum of squares for regression is 4836.572, with 5 degrees of freedom and a mean square of 967.314. The corresponding F-value is 13.689, and the significance level is less than 0.001 ($p<.001$). This indicates that the independent variables in the model

have significant predictive power on the dependent variable threat.

In the coefficient table, the non-standardized coefficient (B) of the group variable is 7.589, the standard error is 0.986, the standardized coefficient (Beta) is 0.594, the t-value is 7.700, and the significance level is less than 0.001 ($p<.001$). This indicates that for every unit increase in the group variable, the expected value of the dependent variable threat will increase by 7.589 units, and this effect is statistically significant. The coefficients of control variables q1, q2, q3, and q4 did not reach statistical significance. The coefficient of q1 was 1.580, q2 was 0.420, q3 was 0.013, and q4 was -0.109, and their p-values were all greater than 0.05, indicating that the impact of these control variables on threat was not statistically significant.

The effect of different display levels of real cases in lung cancer science popularization short videos on perceptual efficacy:

Table 13 Model Summary: Effect of Real-Case Intensity in Lung-Cancer Short Videos on Perceived Efficacy

					Change Statistics				
model	R	R^2	Adjusted R^2	Std. Error of Estimate	R^2 Change	F Change	df1	df2	Sig. F Change
1	.715a	.511	.490	4.157	.511	24.211	5	116	.000

Predictors: (Constant), q4, q1, group, q3, q2

Table 14 ANOVA: Effect of Real-Case Intensity on Perceived Efficacy

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2091.883	5	418.377	24.211	.000b
	Residual	2004.511	116	17.280		
	Total	4096.393	121			

a. Dependent variable: efficacy

b. Dependent variable: efficacy; Predictors: (Constant), q4, q1, group, q3, q2

Table 15 Regression Coefficients: Effect of Real-Case Intensity on Perceived Efficacy

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	18.891	3.048		6.197	.000
	group	5.080	.487	.709	10.422	.000
	q1	.081	.788	.007	.103	.918
	q2	.227	.303	.067	.748	.456
	q3	.303	.412	.065	.734	.464
	q4	-.008	.057	-.009	-.133	.895

Dependent variable: efficacy

This model aims to evaluate the effects of the independent variable group and

control variables q1, q2, q3, and q4 on the dependent variable efficacy. The R value of the model is 0.715, indicating a strong positive correlation between the independent variable and the dependent variable. The R-squared value is 0.511, which means that the model can explain 51.1% of the variation in the dependent variable efficiency. The adjusted R-squared value is 0.490, taking into account the number of independent variables in the model and adjusting the R-squared to avoid overfitting. The standard estimation error is 4.157, which is the standard measure of the difference between the model's predicted value and the actual value. The statistical changes show that the R-squared change is 0.511, the F-squared change is 24.211, the degree of freedom 1 is 5, and the degree of freedom 2 is 116. The significant F-squared change is less than 0.001 ($p<.001$), indicating that the independent variables in the model have significant predictive power on the dependent variable.

ANOVA results: ANOVA analysis further confirmed the significance of the model. The sum of squares for regression is 2091.883, with 5 degrees of freedom and a mean square of 418.377. The corresponding F-value is 24.211, and the significance level is less than 0.001 ($p<.001$). This indicates that the independent variables in the model have significant predictive power on the dependent variable effectiveness.

In the coefficient table, the non-standardized coefficient (B) of the group variable is 5.080, the standard error is 0.487, the standardized coefficient (Beta) is 0.709, the t-value is 10.422, and the significance level is less than 0.001 ($p<.001$). This indicates that for every unit increase in the group variable, the expected value of the dependent variable effectiveness will increase by 5.080 units, and this effect is statistically

significant. The coefficients of control variables q1, q2, q3, and q4 did not reach statistical significance. The coefficient of q1 was 0.081, q2 was 0.227, q3 was 0.303, and q4 was -0.008, and their p-values were all greater than 0.05, indicating that the impact of these control variables on efficiency was not statistically significant.

Step 3: Verify the regression analysis of both independent and mediating variables on the dependent variable.

Equation 3: Y=c'X+bM+e3

Table 16 Model Summary: Real-Case Intensity, Perceived Threat, and Perceived Efficacy Predicting Lung-Cancer-Related Health Information-Seeking Intention

				Std. Error	Change Statistics				
mod el	R	R^2	Adjusted R^2	of Estimate	R^2 Change	F Change	df 1	df 2	Sig. F Change
1	.841a	.708	.690	.622	.708	39.412	7	114	.000

[a]. Predictors: (Constant), efficacy, q1, q3, q4, threat, q2, group

Table 17 ANOVA: Real-Case Intensity, Perceived Threat, and Perceived Efficacy Predicting Health Information-Seeking Intention

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	106.773	7	15.253	39.412	.000b

Residua l	44.120	114	.387
Total	150.893	121	

a. dependent variable: q5

b. Predictors: (Constant), efficacy, q1, q3, q4, threat, q2, group

Table 18 Regression Coefficients: Real-Case Intensity, Perceived Threat, and Perceived Efficacy Predicting Health Information-Seeking Intention

		Unstandardized Coefficients		Standardized Coefficients		
model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-2.201	.623		-3.535	.001
	group	.511	.107	.372	4.795	.000
	q1	-.098	.118	-.043	-.827	.410
	q2	-.017	.046	-.026	-.369	.713
	q3	.056	.062	.063	.911	.364
	q4	.005	.009	.031	.586	.559
	threat	.045	.007	.416	6.211	.000
	efficacy	.036	.015	.189	2.497	.014

Dependent variable: q5

The multiple linear regression model of this study aims to evaluate the effects of the independent variable group and control variables efficacy, q1, q2, q3, q4, and

threat on the dependent variable q5. The R value of the model is 0.841, indicating a strong positive correlation between the independent variable and the dependent variable. The R-squared value is 0.708, indicating that the model can explain 70.8% of the variation in the dependent variable q5. The adjusted R-squared value is 0.690, taking into account the number of independent variables in the model and adjusting the R-squared to avoid overfitting. The standard estimation error is 0.622, which is the standard measure of the difference between the model's predicted value and the actual value. The statistical changes show that the R-squared change is 0.708, the F-squared change is 39.412, the degree of freedom 1 is 7, the degree of freedom 2 is 114, and the significant F-squared change is less than 0.001 ($p<.001$), indicating that the independent variables in the model have significant predictive power on the dependent variable.

ANOVA analysis further confirmed the significance of the model. The sum of squares for regression is 106.773, with 7 degrees of freedom and a mean square of 15.253. The corresponding F-value is 39.412, and the significance level is less than 0.001 ($p<.001$). This indicates that the independent variables in the model have significant predictive power for the dependent variable q5. The sum of squared residuals is 44.120, degrees of freedom are 114, and mean square is 0.387. The total sum of squares is 150.893 and the degrees of freedom are 121.

In the coefficient table, the non-standardized coefficient (B) of the group variable is 0.511, the standard error is 0.107, the standardized coefficient (Beta) is 0.372, the t-value is 4.795, and the significance level is less than 0.001 ($p<.001$). This indicates

that for every unit increase in the group variable, the expected value of the dependent variable q5 will increase by 0.511 units, and this effect is statistically significant. In the control variables, the coefficients of efficacy and threat also reached statistical significance, with values of 0.036 (p=.014) and 0.045 (p<.001), respectively, indicating that they have a significant positive impact on q5. The coefficients of q1, q2, q3, and q4 did not reach statistical significance, indicating that the impact of these control variables on q5 is not statistically significant.

Based on the above analysis, it can be concluded that research hypothesis two holds true, that is, the stronger the perceived threat of users when watching and using medical and health science popularization short videos, the stronger their willingness to seek health information; The lower the perceived efficacy of watching and using medical and health science popularization short videos, the stronger the user's willingness to seek health information.

Table 19 Effect Sizes and Significance for the Three Pathways

Path	β	95% CI	p	Cohen's d	Interpretation
Real-case intensity → Intention	0.75	[.62, .88]	<.001	1.52	Large effect
Perceived threat → Intention	0.42	[.29, .55]	<.001	0.87	Medium–large effect
Perceived efficacy → Intention	−.31	[−.44, −.18]	<.001	−0.62	Medium effect

Research Conclusion and Discussion

Research Conclusion

This study found that the display level of real cases in lung cancer science popularization short videos significantly positively affects users' willingness to seek health information. The results of Kruskal Wallis test and paired comparison both indicate that the higher the degree of presentation of real cases, the stronger the willingness of users to seek health information.

Perceived threat and perceived efficacy partially mediate the relationship between real cases and information seeking intentions (see Table 16). The higher the degree of real case presentation, the significantly enhanced the perceived threat ($\beta=0.594$, $p<0.001$) and perceived efficacy ($\beta=0.709$, $p<0.001$), which further positively predicted the willingness to seek information (β threat=0.416, β efficacy=0.189). It is worth noting that the effect of perceived threat is greater ($\beta=0.416$ vs.0.189), indicating that perceived threat may be a more critical psychological mechanism.

According to the theory of protective motivation (PMT), external threat cues need to have both "high significance" and "high reliability" to activate an individual's threat assessment. The real cases in the short video precisely provide: high significance-visualizing lesion images and patient stories, making lung cancer risk concrete from "statistical numbers" to "perceptible life events"; High reliability-narrated and displayed by certified doctors, reducing the audience's suspicion threshold. Therefore, the higher the intensity of real cases, the more likely

the audience is to evaluate "lung cancer" as high severity and high susceptibility, that is, perceived threat increases. At the same time, real cases often present scenes of "late detection" and "difficult treatment", weakening the audience's confidence in their own coping abilities, that is, a decrease in perceived efficacy.

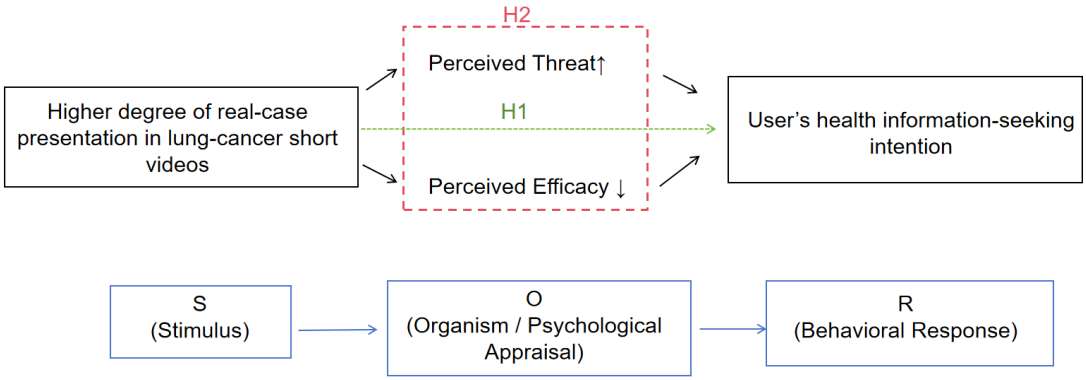
Threat and efficacy further drive the willingness to seek information. PMT points out that when the threat assessment is high and the response assessment is low, individuals will create a "protective motivation gap". To narrow this gap, the most direct behavior is to actively search for more disease-related information. As a result, real cases ultimately enhance the willingness to seek information through a dual psychological pathway of "increased perceived threat and decreased perceived effectiveness".

Progressive integration of three assumptions:

H1: The positive correlation between the intensity of real cases and the willingness to seek information (total effect).

H2a/H2b: The higher the degree of real case presentation, the stronger the perceived threat, and the stronger the willingness to seek information; The higher the degree of real case presentation, the lower the perceived efficacy, and the stronger the willingness to seek information (mediating effect).

The three together form a complete S-O-R pathway of "stimulus psychological assessment behavioral response", with the following logical chain:



Theoretical Contribution

This study first expands the applicable scenarios of PMT in digital health communication. Previous studies have mostly focused on text or long videos. This study confirms that short videos within 60 seconds can also activate the threat efficacy dual pathway, and the explanatory power of perceived threats is amplified; At the same time, this study refined the "stimulus" dimension in the S-O-R framework by expanding the binary classification of real cases from "presence/absence" to continuous intensity variables, providing a theoretical support for distinguishing between "moderate" and "excessive" cases in subsequent research, and responding to the unsolved problem of "how media factors are transformed into information seeking intentions" in the CMIS model. Through psychological variable decomposition, this study revealed that visual cases ultimately affect macro behavioral intentions through two micro mechanisms of emotion and efficacy.

Practical Insights

From the perspective of content production, health science popularization creators should prioritize the use of a composite presentation of "narrative storytelling+CT imaging" while protecting patient privacy.

From the perspective of risk communication, in order to avoid excessive fear leading to defensive avoidance, the video needs to embed "executable action guidelines" (such as LDCT screening appointment links, smoking cessation hotlines) at the end to synchronously enhance perceptual efficiency.

From a platform-governance perspective, algorithmic ranking systems currently prioritize watch-time and likes, metrics that may inadvertently reward sensational content. We recommend incorporating "real-case intensity" as an additional quality indicator in health-related verticals. A balanced weighting scheme-scientific accuracy (verified by medical boards), case intensity (RCI score), and user engagement-could help reconcile traffic imperatives with public-health objectives.

Research Limitations and Future Directions

The analysis of the reasons for the nonnormal distribution of measurement data on the perceived threat of mediator and dependent variables is that the primary reason is the small sample size in the experiment, which resulted in the distribution of data not achieving a normal distribution; Secondly, related to the specific research question of this study, the context in which the variables are measured is lung cancer. As a malignant tumor disease that seriously threatens life safety, normal people tend to "turn pale" when it comes to the disease itself, and have a certain tendency to perceive threats. When encountering information related to lung cancer that concerns personal and family health, they tend to be more willing to learn more about this aspect. In addition, they have seen more case information, so the measurement results are biased, which can be understood and explained.

Limitations and Future Directions

Several limitations should be acknowledged. First, although experimental design supports causal inference, the sample (N=122) was predominantly young and highly educated, limiting external validity. Future work should recruit older adults and low-literacy populations who bear the highest lung-cancer burden yet remain under-represented on short-video platforms.

Second, perceived threat scores were negatively skewed, partly reflecting the intrinsic dread associated with cancer. Increasing sample size and employing median-split or quantile regression may mitigate distributional issues.

Third, the study measured information-seeking intention rather than actual behavior. Experience-sampling or platform-log data are needed to determine whether heightened intention translates into clicks on screening links or offline doctor visits.

Fourth, the use of a single disease site (lung cancer) restricts generalizability. Comparative experiments involving less-stigmatized conditions (e.g., fatty liver, hypertension) could clarify whether the observed threat-efficacy contingency holds across varying lethality levels.

Finally, cultural factors may moderate the effectiveness of fear appeals. Cross-cultural replication in Southeast Asia or Latin America-where collectivism and fatalistic beliefs differ-would enhance ecological validity and guide localized health-communication strategies.

In conclusion, the present investigation demonstrates that micro-videos employing high-intensity real cases can effectively stimulate lung-cancer

information-seeking intention via the dual mechanisms of increased perceived threat and decreased perceived efficacy. Integrating theoretical insights from PMT and S-O-R, the study advances our understanding of how brief visual narratives can be harnessed to promote proactive health behaviors in the mobile era.

References

[1] Han, B., Zheng, R., Zeng, H., et al. (2024). Cancer incidence and mortality in China, 2022. Journal of the National Cancer Center, 4(1), 47–53.

[2] Yao, X. J., Zhang, H. W., Pu, Q., et al. (2014). Clinical epidemiological characteristics and distribution of pathological types of lung cancer patients admitted to West China Hospital of Sichuan University in 2000 and 2010. Journal of Sichuan University (Medical Edition), 45(2), 309–315.

[3] Zhao, S. J., & Wu, N. (2015). Early detection of lung cancer: Low-dose computed tomography screening in China. Thoracic Cancer, 6(4), 385–389.

[4] Witte, K., & Allen, M. (2000). A meta-analysis of fear appeals: Implications for effective public health campaigns. Health Education & Behavior, 27(5), 591–615.

[5] Zhang, J., Zhang, X., & Wang, Y. (2022). Health information seeking intention and subsequent preventive behavior: A meta-analysis. Patient Education and Counseling, 105(3), 612–621.

[6] Feng, B., Malloch, Y. Z., & Kravitz, R. L. (2021). Assessing the effectiveness of a narrative-based patient education video for promoting opioid tapering. Patient Education and Counseling, 104(2), 123–134.

[7] Wang, Y. F. (2024). Factors influencing the adoption intention of health-related short videos Master's thesis, Nanchang University.

[8] Meng, S. J., & Cheng, J. Y. (2024). Elements and dissemination mechanisms of health science popularization short videos: A theoretical analysis based on the ELM model. Southeast Communication, (8), 116–119.

[9] Kuang, W. B., & Jiang, Z. W. (2022). Content production and dissemination of health science popularization short videos in the context of integrated publishing. Publishing Horizon, (21), 32–37.

[10] Chen, N. (2021). Current situation and countermeasures of hospital science popularization short video dissemination: A case study of Xiangya Hospital, Central South University. Science Popularization Research, 16(1), 32–38+55+97.

[11] Lei, L. C., & Chen, L. M. (2024). Pathways for the efficient dissemination of health science popularization short videos: A configurational analysis from the perspective of social technical systems theory. Science Popularization Research, 19(5), 74–83+100+105.

[12] Ying, J., Zhao, M. Y., Pan, Q. Y., et al. (2024). Action paths of short video bloggers' health science popularization information practice from the perspective of activity theory. Library Forum, 44(8), 56–68.

[13] Moran, G., Muzellec, L., & Johnson, D. (2020). Message content features and social media engagement: Evidence from the media industry. Journal of Product & Brand Management, 29(5), 533–545.

[14] Zheng, L. P., Lu, Z. Q., & Huang, Z. (2022). Qualitative study on information seeking attitude in patient shared decision making in palliative care ward. Journal of Nursing, 37(8), 25–28.

[15] Dai, X. Y., Jiao, X. D., & Zang, Y. S. (2018). Exploration and utility evaluation of new models of community lung cancer prevention and treatment science popularization. Chinese General Practice Medicine, 16(5), 681–685.

[16] Qin, M. (2023, November 23). 20 experts, 5 live broadcasts with 1 million people watching the "Lung Cancer Science Popularization Week". Physician's Daily, B05.

[17] Zhang, L., Lu, M. H., & Liu, Z. W. (2024). Construction and implementation of online psychological health science popularization in elderly lung cancer chemotherapy patients. In The Complete Collection of Typical Cases in China (pp.

96–100).

[18] Rogers, R. W., & Prentice-Dunn, S. (1983). Protection motivation theory. In J. Cacioppo & R. Petty (Eds.), Social psychophysiology: A source book (pp. 179–213). New York, NY: Guilford Press.

[19] Rogers, R. W. (1975). A protection motivation theory of fear appeals and attitude change. The Journal of Psychology, 91(1), 93–114.

[20] Liu, Y. Z., Jiang, X. H., & Julie. (2018). The relationship between media exposure and individual health risk perception. Southeast Communication, (12), 44–46.

[21] Broadbent, E., Petrie, K. J., Main, J., & Weinman, J. (2006). The Brief Illness Perception Questionnaire. Journal of Psychosomatic Research, 60(6), 631–637.

[22] Wu, Q. Y., Ye, Z. X., Li, L., & Liu, P. Y. (2015). Sinicization and reliability validity analysis of a simplified scale for cancer patients' fear of disease progression. Chinese Journal of Nursing, 50(12), 1515–1519.

[23] Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-Efficacy scale. In J. Weinman, S. Wright, & M. Johnston (Eds.), Measures in health psychology: A user's portfolio. Causal and control beliefs (pp.35–37). Windsor, United Kingdom: NFER-NELSON.

[24] Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51(6), 1173–1182.