A Study on the Influence of Social Media Information Reception on Preventive Behavior of New Coronary Pneumonia Epidemic from A Risk Perception Perspective

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Abstract: In the context of repeated outbreaks of New Coronary Pneumonia (NCP), social media information dissemination and reception play an important role in the prevention and control of the epidemic. This paper investigates the relationship between social media information reception, personal risk perception, and preventive behavior of the Newcastle pneumonia outbreak using a questionnaire survey method. This paper analyzed data from 339 questionnaires using Pearson correlation analysis. The data analysis concluded that social media information reception was positively correlated with personal epidemic prevention behavior; social media information reception was positively correlated with personal risk perception, and personal risk perception was positively correlated with epidemic prevention behavior. In conclusion, social media information reception affects users' outbreak prevention behaviors of New Coronary Pneumonia.

Keywords: new coronary pneumonia, risk perception, social media, copy domination, third-person effect

1 Introduction

In the context of repeated outbreaks of New Coronary Pneumonia, the role of the media in guiding people's behavior through the dissemination of information has become increasingly prominent. Meanwhile, social media has become the main channel for people to learn about the epidemic situation due to its multiple and convenient communication methods. People use social media to learn about changes in the epidemic situation and make risk perceptions based on the information they receive. This perception further influences what behaviors people adopt to prevent the outbreak. For example, reducing the number of people going out or wearing masks outside. Based on this, this paper will analyze the relationship between social media information reception and precautionary behaviors for the new coronary pneumonia outbreak.

2 Literature Review

2.1 Risk society-related studies

In 1986, German sociologist Ulrich Beck put forward the warning that the world was entering a risk society. In his Review of Risk Society Theory, Xuedong Yang pointed out that risk society as a concept but is not in the sense of historical staging, nor is it a historical stage of a specific society and country, but a figurative depiction of the characteristics of the times in which mankind is currently living [1]. At the same time, Ulrich Beck in "Risk Society" also mentions that in the context of a risk society, unintelligible and unpredictable consequences become the dominant force in history and society [2].

According to scholar Chengbin Liu, the New Coronavirus epidemic revealed new directions of risk society, namely, the non-technological selectivity of risk society outbreaks, the social-institutional nature of risk tumble processes, and the non-regional nature of risk outreach [3]. First, the New Coronavirus itself was not generated by technology. Second, the occurrence of NCPV outbreaks in different countries is fundamentally different, especially the differences between the two social systems, socialism represented by China and capitalism represented by European and American countries, are obvious. Once again, the New Pneumonia epidemic has become a major global risk event, and the outreach of the risk is generally no longer limited to the regional level.

Professor Zheng Weiwei of The Renmin University of China pointed out that the arrival of the "risk society" has increased the possibility of crisis, and various resources and means are needed to resolve and avoid risks. Among them, social media has become an important resource for solving various problems in a risk society because of its special functions in information communication, news dissemination, public opinion guidance, and social services [4]. Social media should disseminate relevant risk information promptly from users' needs in crisis communication in risk , so that users can accurately understand the objective environment and thus make accurate risk perceptions, and at the same time take appropriate preventive behaviors.

Some scholars believe that online social media can become a new source of social risks. Due to the low threshold of social media, the complex composition of users, and the strong arbitrariness of information dissemination, the quality of information on social media varies. For example, at the beginning of the epidemic outbreak, a large number of epidemic rumors were spread on the Internet. This will not only bring obstacles to risk prevention , but also affect new social risks to a certain extent [5]. Therefore, in the context of a risk society, it is crucial to regulate the production and dissemination of information in social media to minimize social risks.

2.2 Risk perception-related research

Risk perception is people's feelings and perceptions about the characteristics and severity of a particular risk, and is an important indicator of public psychological fear [6]. Risk perception determines how people perceive risks and what behaviors they adopt to cope with them. Also, the reception and dissemination of information in social media can influence the emergence and transformation of people's health behaviors [7]. In addition, risk perception and the effectiveness of preventive behaviors can directly influence the public's preventive behaviors. When the public perceives the risk as more serious, they will have a greater fear of the severity and degree of harm of the disease and will also have a higher degree of fragility perception to their health, and thus may adopt preventive behaviors; when the public perceives the risk as manageable, they tend to believe that preventive measures can effectively prevent the disease and are more willing to adopt preventive behaviors [8].

In addition, journalism and communication have been studied from the perspective of crisis communication. Professor Xu Bailing pointed out that risk is a social construct and cultural definition. The imagination of the audience, the disclosure of information by the government and experts, etc. together define the risk. During the epidemic, risk information disseminated by the media played an amplifying and weakening role in people's risk perceptions [9]. On the one hand, the low frequency of media coverage of risk information is not sufficient to raise alarm and can lead to a severely diminished bias in people's risk perceptions based on media information. On the other hand, the dissemination of risk information through the media can play a role in revealing risks and providing early warning to the public, but at the same time, the cumulative effect produced by the dissemination of information in the media can cause risks to be further magnified.

2.3 Research on social media information reception and epidemic prevention and control

In the context of the epidemic, how social media can better play the function of disseminating information to assist in the prevention and control of the epidemic has become the focus of academic circles. Jing Su and Jing Zhang, scholars of health communication at Tsinghua University, have analyzed the role of media in public crisis events from the perspective of risk broadcast and risk communication. They believe that risk is a unity of subjective perception and objective existence. Therefore, the communication and interaction of all parties in the risk are particularly important. Risk communication can, to a certain extent, unify the perception of risk among all parties. In the context of an epidemic, social media is considered one of the intermediate variables in the risk construct. The reception and dissemination of information in social media effectively promote the process of risk communication but also increase the complexity of public emergency management [10].

Scholars such as Huang Kun and Zhang Qingcun pointed out that social media played an important role in epidemic prevention and control. They argue that the participation of social media in epidemic prevention and control has truly shifted public crisis management from monolithic governance to a pluralistic governance model with government leadership and social participation. In addition, the participation of social media has improved the crisis information communication mechanism to a certain extent, and the information dissemination of social media has contributed to the social reconstruction while responding to the crisis [11].

All of the above studies take the functions and roles played by social media as an entry point to study the information dissemination and reception of social media in the context of public crises. However, few studies have systematically revealed the function and role of social media information reception in individual risk perception and the relationship between social media information reception and people's outbreak-prevention behavior. Therefore, this paper presents an in-depth study of the relationship between social media information reception and people's outbreak prevention behavior from the perspective of risk perception and the actual context of repeated outbreaks. This paper not only remedies the shortcomings of existing studies but also provides a basis and reference for how social media can function better under the situation of an epidemic.

2.4 Asking questions

This paper, therefore, attempts to answer the following questions from a risk perception perspective.

Why do users' preventive and control behaviors towards the New Coronavirus epidemic outbreak emerge? How do social media influence users' prevention and control behaviors about/to/with concerning the NCCP epidemic? What is the relationship between social media information reception and individual risk perception and epidemic prevention behavior?

3 Method

This paper uses a questionnaire survey method to try to answer the above questions.

3.1 Hypothesis building

Based on the questions above, the following hypotheses are formulated here.

H1: Social media information reception is positively related to individuals' epidemic prevention behaviors

H1a: The frequency of receiving social media information is positively correlated with the willingness of individuals to adopt "wearing a mask".

H1b: The frequency of receiving social media information is positively correlated with

individuals' willingness to "stay at home".

H2: There is a positive correlation between social media information reception and individual risk perception

H3: Personal risk perception is positively correlated with epidemic prevention behavior

H3a: Personal risk perception is positively correlated with the willingness to adopt "wearing a mask"

H3b: Personal risk perception is positively correlated with the willingness to "stay at home".

To prove the hypothesis, this paper adopts the questionnaire method to sample the whole population and make a questionnaire.

3.2 Sampling method

This hypothesis is based on a representative sample of the group with social media exposure habits. A total of 354 questionnaires were collected, of which 339 were valid. 95.7% of the respondents had been exposed to information related to epidemic prevention on social media.

4 Results and Discussion

From the descriptive analysis, it can be seen that WeChat is the most frequently used social media channel when people are exposed to information related to epidemic prevention and control, with the proportion reaching 39.7%.

4.1 Impact of social media information reception on personal epidemic prevention behavior

Pearson correlation analysis was used to analyze the relationship between the frequency of receiving social media information on epidemic prevention and people's willingness to prevent the epidemic, and it was found that the more frequently people were exposed to epidemic prevention information on social media, the stronger their willingness to "wear a mask" ($r=0.609$, $p=0.000$). The more frequently people were exposed to epidemic prevention information on social media, the stronger their willingness to "stay at home" ($r=0.563$, $p=0.000$). That is, the frequency of social media exposure to epidemic prevention information showed a significant positive correlation with the willingness to "wear masks" and the willingness to "stay at home". [12]-[15]

In the background repeated outbreaks, social media uses the media framework to disseminate epidemic-related information to users through re-posts, likes, comments, and interpersonal and intergroup interactions by opinion leaders. After receiving the information, individuals adjust their perceptions of the external environment and form "subjective truths", based on which they adopt preventive measures such as "wearing masks" and "staying home". Based on the "subjective reality", individuals will adopt preventive behaviors such as "wearing masks" and

"staying at home" to avoid their own risk of epidemics. In this process, social media plays an important role in receiving information. The length and frequency of receiving information about the epidemic through social media and whether the information will be disseminated will affect the preventive behavior of individuals. In summary, the research hypothesis H1ab is supported. Therefore, the research hypothesis H1 is supported.

4.2 Impact of social media information reception on individual risk perception

Pearson's correlation analysis was used to analyze the relationship between people's frequency of exposure to social media epidemic prevention information and epidemic risk perceptions, and it was found that the more frequently people were exposed to epidemic prevention-related information on social media, the higher their personal risk perceptions ($r=0.638$, $p=0.000$), i.e., there was a significant positive correlation between the frequency of exposure to social media epidemic prevention information and personal risk perceptions. [12]-[15]

The "copy domination" theory states that people are only able to access information through the media due to the increasing expansion of the environment and the indirectness of social life and that people are always in the process of "copying" due to the mass production and availability of media. In the context of the epidemic, social media timely release information about the epidemic and build a "mimetic environment" about the situation through accumulation, resonance, and omnipresence. Due to the prolonged exposure to the "symbolic reality" constructed by social media and the influence of group dynamics, the public will be gradually connoted by social media and change their perception of external environmental risks. The questionnaire data suggest that the longer an individual browses information about the outbreak on social media, the more consistent his or her perception of the risk of the outbreak is with media reports. The more individuals perceive the risk of an epidemic, the more importance they attach to it. Therefore, the timely release of information by the media is conducive to helping the public clarify risks and prevent them, which in turn enhances the public's risk perception. Research hypothesis H2 is supported.

4.3 The influence of individual risk perception on epidemic prevention behavior

Pearson's correlation analysis was used to analyze the relationship between people's risk perception of the epidemic and preventive behaviors and found that the higher people's risk perception of the epidemic, the more likely they are to adopt preventive behaviors of "wearing masks" and "staying at home" ($r=0.8$). ($r=0.816$, $p=0.000$; $r=0.779$, $p=0.000$.), i.e., there was a significant positive correlation between individual risk perception and preventive behavior. [12]-[15]

After the public is exposed to the information related to the outbreak disseminated by social media, the public will adjust the level of risk perception of the outbreak. The increase

in risk perception will further cause the emergence and adjustment of preventive behaviors. In addition, this result can be explained by the "third-person effect" theory of communication and Tarde's "law of imitation". When confronted with negative information, people tend to perceive it as having less impact on themselves while more impact on others. Based on this psychology, the epidemic-preventive behavior of the public is often not directly generated by social media messages, but by the belief that the epidemic-related information disseminated by social media will have an influence on others, and that the behavior of others based on the information will have an impact on themselves, thus generating epidemic-preventive behavior. The research hypotheses H3a, H3b, and H3 were supported.

5 Conclusion

This study investigated the influence of social media information reception on the preventive behavior of NCCP from the perspective of risk perception through a questionnaire survey method, and attempted to answer questions such as the reasons for NCCP preventive behavior of social media users; the mechanism of how social media influences users' preventive behavior of NCCP; and the relationship between social media information reception and individual risk perception and preventive behavior of NCCP. The study found that.

The frequency of receiving social media information was positively correlated with individuals' willingness to "wear a mask" and "stay home". Social media information reception was positively correlated with individual risk perception. The hypotheses that personal risk perception is positively correlated with epidemic prevention behavior and that personal risk perception is positively relevant with the willingness to adopt "wearing masks" and "staying at home" are supported.

This study presents the effect of social media information dissemination from the perspective of risk perception, which reflects the mechanism of receiving and responding to epidemic prevention information at the micro level of society, and thus helps to better analyze how epidemic prevention information is disseminated in a more persuasive and macro-stable discourse system in the context of normalized epidemic prevention and control. On the other hand, this study also provides a strong reference for the public's psychological and behavioral tendencies of epidemic prevention and control in the post-epidemic era. Nevertheless, it is noteworthy that this study finds that health information dissemination cannot emphasize tension, policy, and social regulation and that a continuous serious dialogue model can intensify public panic about the epidemic and cause the public to doubt the flexibility of epidemic prevention policies and the humanistic tendency of risk society, increasing the potential risk factors in society.

However, this study has shortcomings in terms of total sample size and systematic representativeness of the sample, and researchers in the field of health communication may need to pay more attention to audience feedback mechanisms and to the analysis of the

communication effects of official discourse in future studies.

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