

Research on Public Risk Perception and Mental Health of Public Crisis Events—Taking COVID-19 Pandemic as an Example

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Abstract:

Public crisis is a catastrophic event that endangers the lives and safety of the masses. It is characterized by sudden outbreak, value neutrality, responsibility bearing, time urgency, process continuity and destructiveness. The global outbreak of COVID-19 is a classic example of a public crisis. This paper examines the public's risk perception and mental health status of public crisis events using COVID-19 as a sample. This study based on a new outbreak of coronary events as the background, in June, 2021 to the outbreak of parts of the public in China online interview and offline questionnaire, the research aims to explore in a new outbreak of crown environment public risk perception characteristics and analyzing risk perception effect of coping style and mental health to the public. I also read a large number of literature related to keywords and made comments on the shortcomings of the research, so as to make guiding guidance in the subsequent research and get better results. During the epidemic period, the government provided free treatment for COVID-19 patients, the government and local non-social organizations cooperated with each other to provide convenience for people living in the closed management area, and the government issued various preferential policies to reduce the public burden. During the epidemic period, government agencies at all levels worked together to inform the public of the specific situation of the epidemic in the form of several press conferences every day. These measures made the information of the epidemic more transparent, enhanced the public's trust in the government, and made the public more familiar with the situation, effectively reducing the public's perception of the risk. Through empirical research on the influencing factors of public risk perception during the COVID-19 epidemic, this study mainly draws the following Conclusions: First, the more unfamiliar and difficult the public is to control the risk events, the higher the public's risk perception will be; Second, epidemic information can significantly affect risk perception; Third, in addition to directly affecting mental health, risk perception can also indirectly affect mental health through negative behaviors, leading to more and more serious psychological problems suffered by more people. Mental health is the single most important factor affecting life satisfaction. Actively establish the wind vane of risk perception, establish a new interpretation framework and practical concept for information dissemination after the occurrence of major events, turn risk discourse into healthy discourse, try to eliminate the uncertainty perception of the masses, and avoid linking risk information with specific groups or individual characteristics.

Keywords: Risk perception, Mental health, Public crisis events, The public

I. INTRODUCTION

Public crisis is a kind of catastrophic event that endangers the life and safety of the masses. It is characterized by sudden outbreak, value neutrality, responsibility bearing, time urgency, process continuity and destructiveness, such as natural disaster, economic crisis and public health emergency. COVID-19 pandemic worldwide is a typical case of a public crisis. In a sudden public crisis, it is a cross-border, common and normal phenomenon for the public to have anxiety and panic. However, people in anxiety often confuse subjective feelings and objective facts, and under the influence of emotions, lead to cognitive closure, thus making impulsive and irrational decisions and behaviors. In such an era of media development, anxiety and panic can spread in a group instantly, resulting in the group's blindness. Under public crisis events, the public's risk perception of "crisis" will be improved. Studies show that when people think they are in a high-risk environment, they tend to be in a state of anxiety and worry, seek more social support or collect information, and also engage in some irrational behaviors such as rush and grab or herd behavior. Mental ill-health can also lead to physical ill-health, anti-social behavior that harms oneself and others. After outbreaks in some areas of The Times, can also began to reconsider and balance other important social problems and health problems, therefore to understand the impact of risk cognition of people can help alleviate the crisis event public panic psychology, and can provide risk management institutions and the relevant departments with some advice on how to guide people to make reasonable behavior.

II. RESEARCH STATUS

At present, there are many researches on risk perception and psychological behavior, which can be roughly divided into four aspects through sorting out the existing research results:

2.1 Risk Perception and Influencing Factors

The research on risk perception originated in foreign countries. Slovic defined risk perception as "a judgment made by the public on the risk of the environment based on their first intuition, which is a subjective response of people". Wildavsky understood risk perception as "people's understanding of the factors contained in the living and working environment, which is a kind of social culture that can directly reflect ideology" [1]. Cutter called the public's understanding of specific risks and the subsequent process of assessment and judgment of specific risks risk perception [2]. Domestic scholar Li Hongfeng defined risk perception as "people's perception of a specific category. The subjective judgment made by the characteristics and severity of risks is an important indicator to measure public psychological panic". [3] Liu Jinping believes that "risk perception is the public's subjective perception of objectively existing risks and behavioral judgment based on subjective perception" [4], etc. After reviewing the above literature, this paper defines risk perception as people's subconscious behaviors and psychological reactions stimulated by environmental information under the environment they are in.

2.2 Risk Perception and Psychological Coping Behavior

Relevant studies have shown that risk perception has an impact on people's coping behavior. Lazarus and Folkman believed that coping refers to the thoughts and behaviors of individuals to deal with stressful internal and external situations proactively [5]. Compas et al. defined coping as an individual's conscious effort to emotion, cognition, behavior and environment in the face of stressful events and risky environments [6]. Burton believes that risk coping behaviors refer to those that can consciously or unconsciously reduce the threat of threatening events in the environment [7]. Terpstra and Lindell summarized several risk response behaviors that the public can take in the event of flood risk, such as preparing an emergency package containing water, food, radio and other emergency items, searching flood dynamic information and making emergency plans [8]. Coping strategies are behavioral strategies that people purposefully adopt to reduce the impact of anxiety, panic and stress in sudden public health crises, and coping behaviors are specific manifestations of coping strategies adopted by people. Amirkhan(1990) divided coping strategies into problem solving strategies, support seeking strategies and avoidance strategies [9]. Billings and Moos (1984) proposed problem-centered strategy, emotion-centered strategy and evaluation-centered strategy [10] Lyne and Roger (2000) divided coping strategies into emotion-centered strategy, positive strategy and avoidance strategy, etc. Based on existing analysis, this paper divides coping strategies into positive coping strategies and negative coping strategies, and corresponding coping behaviors can be divided into positive coping behaviors and negative coping behaviors. This article risk perceived by the public for public health crisis of familiarity and control level, when people perceive the crisis events are not familiar with or uncontrolled, take corresponding coping behavior to reduce familiarity and cannot control, with the perceived risk will decline, such as the outbreak of the new champions league people wearing masks, reduce go out are coping behavior.

2.3 Coping Behavior and Mental Health

Coping style is closely related to mental health. Lazarus pointed out that if individuals adopt positive coping behavior, psychological stress can be reduced. Folkman and Lazarus pointed out that greater psychological stress would also cause people to take a variety of coping behaviors including avoidance. Su Xi et al argued that coping style, workload and interpersonal relationship have significant predictive effects on mental health status. Billings et al. found that proactive coping style is beneficial to the development of events, thus reducing the occurrence of psychological problems and diseases, while negative coping style will cause adverse effects on mental health. Ray et al. found that in the face of emergencies, if individuals lack appropriate coping behaviors, the probability of negative psychological problems can reach 43.3%, twice that of the general population. When people face the COVID-19 with a strong infectivity, the high intensity of risk perception causes people to feel depressed and depressed, leading to a decline in their mental health. Meanwhile, the high risk perception forces people to take certain coping behaviors to relieve or eliminate the perceived pressure. Generally speaking, positive coping behavior of the public is beneficial to mental health, and vice versa.

Research shows that risk perception has a direct impact on mental health. Cho and Lee believed that the higher the risk people feel in a certain environment, the more likely they are to take measures to reduce the risk, because high risk places people in a state of high pressure and naturally urges people to take coping behaviors to alleviate the state. Wineman believed that the direction of sudden public health crisis and the severity of its consequences were uncertain, and such uncertain risk perception would increase people's psychological pressure and negative emotions, seriously affecting people's mental health. In the early stage of the outbreak, due to opaque information, lack of scientific knowledge, and a variety of false information on the Internet, people often perceive increased risk and show a series of irrational behaviors and negative emotions, such as anxiety, depression, overeating, and repeated washing of hands. If people are exposed to a high-risk environment for a long time, it can seriously affect their mental health and even their mental health

It causes a high incidence of depression and increases the suicide rate. Therefore, it is very necessary to reduce the risk perception of the public during the epidemic and carry out mental health education and guidance for the public.

2.4 The Mediating Effect of Coping Behavior

Studies have shown that coping is an important psychological mediator between stressors and stress results, and coping style will directly affect people's emotional state, and then affect people's physical and mental health. Folkman et al. believe that coping affects the consequences and severity of stress to a large extent and plays a very important role in individuals' physiology and psychology. Coyne et al. considered stressors as independent variables, coping style and social support as mediators, and emotional response as outcome variables. Studies by Huang Yanping et al. show that sudden stress events are closely related to public health, which not only directly affect public mental health, but also indirectly affect mental health through coping style as an intermediary variable. Lu Cuiping found that the effect of thinking style on mental health is mediated by positive and negative coping behaviors, and the indirect effect of negative coping style on psychological symptoms is greater than the direct effect of thinking style on psychological symptoms. According to the existing literature can be found that coping behavior and mental health in emergencies have the effect of core intermediary variables, under the background of the outbreak, while taking strict control measures, but still from time to time to update the infections, especially the death case reports information about infectious, and will bring people the most true feelings, if psychologically vulnerable groups to take negative coping behavior, It can lead to severe mental illness and even death.

III. RESEARCH OBJECTIVES AND ASSUMPTIONS

3.1 Research Objectives

Based on the information stimulation background of the COVID-19 event, this study conducted online questionnaire survey and offline interview among people in parts of China where the epidemic occurred from early April to early May in 2020. The purpose of this study is to explore the characteristics of the

public's risk perception in the context of COVID-19 and to analyze the impact of risk perception on people's coping styles and mental health.

3.2 Research Hypothesis

Based on the analysis of existing literature, this study proposed the following hypotheses:

Hypothesis 1: The more unfamiliar or difficult the public feels to control the crisis, the more likely it is to arouse the public's perception of high risk

Hypothesis 2: Positive epidemic information can reduce people's risk perception

Hypothesis 3: Negative epidemic information can increase people's risk perception

Hypothesis 4: The higher the perceived risk, the lower the level of public mental health

Hypothesis 5: The more the public tends to adopt negative coping behaviors, the lower their mental health level will be

Hypothesis 6: The more the public tends to adopt positive coping behaviors, the higher their mental health level will be

Hypothesis 7: The higher the risk perception, the more frequent the negative behavior

Hypothesis 8: The higher the risk perception, the more frequent the positive behavior appears

Hypothesis 9: Coping behavior plays an intermediary role in the relationship between risk perception and mental health

IV. RESEARCH METHODS

COVID-19 information question. This part of the questionnaire was compiled on the basis of reference to the survey of SARS epidemic information in 2003 [26] and the specific characteristics of the COVID-19 epidemic. According to the related research on risk information, information is usually divided into negative information reflecting the severity of the consequences of crisis events and positive information reflecting rescue and prevention. When investigating the impact of COVID-19 information on the public, this study divided information into two dimensions and four parts. The first part contains information on the treatment of COVID-19 patients, such as the number of newly cured and discharged patients and the number of newly cured and discharged patients every day. The second part is the government rescue and prevention information, such as the government's information on treatment conditions and environment improvement, the government's information on the supply of daily necessities, etc. The first and second parts belong to the

positive epidemic information of the first dimension. The third part is disease information, such as information on the number of new deaths per day, information on the intensity of COVID-19 infect; The fourth part is about yourself and the surrounding environment, such as you. Are there any infected persons in your unit or community, and are there any infected persons you know? The third and fourth parts belong to the second dimension of negative epidemic information. A total of 15 measurement items were measured by like scale.

V. DISCUSSION OF RESULTS

5.1 The Effect of Positive and Negative Epidemic Information on Risk Perception

This paper explores the impact of positive and negative information of COVID-19 on risk perception. Positive epidemic information can help reduce people's risk perception, while negative epidemic information can cause people's risk perception to increase. Further analysis of the most important factors affecting people's risk perception in positive and negative epidemic information shows that the most important factor affecting people's risk perception in negative epidemic information is self-related and surrounding environment problems, followed by infectious problems in disease information, which is consistent with existing research results. When the epidemic is about to or has threatened the interests of themselves and their loved ones around them, people usually feel worried and panic, leading to increased risk perception. Will be COVID-19 infectious problem has long been the public attention, combining with the current epidemic situation, the first case of infection so far found from the total to more than ninety thousand people diagnosed with the number and intermittent is still increasing, highly infectious people consequences higher sense of uncertainty and serious consequences, lift the level of risk perception. In terms of time cycle, disease

The speed of infection of poison is extraordinary, and it can cause people's perception of high risk, which is also in line with people's cognitive law. Among the positive epidemic information, the most important factor affecting people's risk perception is the government's rescue and protection measures, followed by the cure information. [34] believes that among 47 factors that can affect risk perception, trust is the most important one. The premise of trust is good risk communication.

It is a process in which patients exchange information with the government or hospitals about their COVID-19 experiences. This risk information communication process can avoid information asymmetry between the two sides, so that both sides or even multiple parties can cooperate and coordinate with each other to better prevent and control the epidemic. Based on the actual situation, the government provided free treatment for COVID-19 patients, the government, local non-governmental organizations and foundations cooperated with each other to facilitate the provision of clothing, food, housing and transportation for people in the closed management areas, and the government introduced various preferential policies to reduce the burden of people. During the epidemic period, government agencies at all levels worked together to inform the public of the specific situation of the COVID-19 through several press conferences every day. These measures made the information of the epidemic more transparent, strengthened the public's trust in the

government, and made the public more familiar with the situation of the epidemic, effectively reducing the public's perception of risk.

5.2 The Relationship Model between Risk Perception and Psychological Behavior

In this study, statistical software was used to verify the relationship between variables in the risk perception and psychological behavior reaction model. The results showed that positive behavior was not significantly correlated with mental health, and the results of risk perception and positive behavior were contrary to the hypothesis. The possible explanation that these two paths have not been verified in light of the specific situation of the current epidemic is as follows: Through the analysis of all the samples participating in this survey, it can be seen that there are a large number of samples between 20 and 29 years old, and most of them are students. At the beginning of the epidemic, most students had already been at home during the winter vacation, but due to the epidemic prevention and control needs, most schools have not even fully reopened during the wrong peak. Under the double pressure of epidemic crisis and study, it is extremely unfavorable to the mental health of college students who stay at home for nearly half a year, especially those who are in the graduating class and have scientific research tasks. Therefore, in order to relieve such stress, they may tend to adopt more negative coping behaviors, such as smoking, drinking, taking drugs, and messing up the schedule. Stress can be dealt with in ways such as discipline and overeating. But what is the opposite of the positive and negative coping styles, and not the positive coping styles will have positive consequences, and negative coping styles will produce negative consequences, no matter adopt what kind of coping behavior, its purpose is to give the individual psychological balance, keep the sense of risk manage health level within a reasonable range.

5.3 Research Deficiencies and Prospects

This study investigated the impact of epidemic information on people's risk perception and the relationship between risk perception and psychological behavior, verified the mediating role of negative coping behavior, enriched the research on risk perception and psychological behavior, and provided guidance for people's mental health education during the epidemic. However, this study also has the following shortcomings: (1) it is not a longitudinal study, so it is difficult to make causal inferences about variables in the model. In the future, longitudinal studies should be taken as the starting point to investigate the differences between risk perception during and after the epidemic and the psychological behavior of the public, revealing the psychological behavior rules of the public in the face of crisis events, which will help the society to reflect, so as to guide people's attitude and behavior in the face of crisis events more scientifically.(2) This study did not verify the relationship among risk perception, positive behavior and mental health. In addition to the survey sample factors, there may be some other factors affecting the significance of the relationship between the three factors, and future studies need to continue to find such factors.

VI. CONCLUSION

Through empirical research on the influencing factors of risk perception and the relationship model between risk perception and psychological behavior during the COVID-19 outbreak, this study mainly draws the following conclusions: First, the less familiar people are with risk events and the more difficult they feel to control them, the higher their risk perception will be; Second, epidemic information can significantly affect risk perception; Third, risk perception can not only directly affect mental health, but also indirectly affect mental health through negative behaviors.

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