Formation Mechanism of Regional Stigma —— Impact of Major Public Health Emergencies

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Full Research Paper

Formation Mechanism of Regional Stigma —— Impact of Major

Public Health Emergencies

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Abstract: The COVID-19 was taken as an example to study the mechanism of regional stigmatization —— the impact of major public health emergencies. By collecting the data of Sina Weibo, a social media platform, and using the rooted theory method, the negative comments on the major public health emergency related to the epidemic situation of new crown virus pneumonia were coded. The model of the impact of major public health emergencies on regional stigma is constructed, and the theoretical saturation test is carried out. It is found that the topic events of major public health emergencies will produce regional stigma through the attribution of responsibility and negative emotions of Internet users. In order to reduce or eliminate the negative effects of regional stigma, this study suggests that the strategy and suggestion of de-stigmatization should be adopted for different subjects and different levels.

Keywords: Major public health emergencies; Regional stigma; Grounded theory; Attribution of responsibility

1. INTRODUCTION

A series of major public health emergencies have occurred frequently in recent years, such as the H7N9 avian influenza virus epidemic in 2013, the Ebola epidemic in West Africa in 2014, and the Zika virus epidemic in 2016. The COVID-19 at the end of 2019 was the second major public health emergency in Chinese mainland since the SARS of this century. major public health emergencies have the characteristics of poor foresight, fierce coming, wide spread and uncertain future development, which has caused serious health threats and physical and mental injury (An Lu et al,2018) [1].The information about the occurrence and development of the epidemic was read and spread quickly by Internet users. On January 23, 2020, Wuhan, with a population of 10 million, was closed, which caused a huge network public opinion.In the process of spreading public opinion, a large number of netizens comment and forward with personal emotions, which intensifies the breeding of various negative emotions. Among them, some netizens spread false remarks on social platforms, calling the new crown virus "Wuhan virus ", saying Wuhan is the birthplace of the virus. Including not only the US, led by Trump, and other Western dignitaries, but also the domestic and foreign people,who are full of discrimination against Wuhan and people from Wuhan, full of panic about the epidemic, and increasingly stigmatized Wuhan.Stigmatization not only brings psychological shadow to people living in Wuhan area, damages the city image of Wuhan, causes difficulties to resume work and production, but also reduces the investment of enterprises in Wuhan area, the number of tourists coming to Wuhan, and the deterioration of Wuhan business environment, which has a huge negative impact on Wuhan's economic and social development.

Most of the existing articles on the impact of public health emergencies focus on the construction of medical mechanism, early warning mechanism and so on. This paper uses the rooted theory research method to capture, refine and summarize the primary data of Sina Weibo, constructs the formation mechanism model of the influence of major public health emergencies on regional stigma, and complements the research on public health emergencies, network public opinion and stigma.The study discusses the impact of major emergencies, analyzes the causes of regional stigma, and puts forward strategies to eliminate stigma, which has certain practical

significance for guiding citizens to carry out correct self-cognition and improve group identity. It has certain reference significance for the media to construct a good public opinion information communication environment, the government and relevant departments to formulate and implement practical policies to weaken regional discrimination and conflict and promote the harmonious development of urban economy and society.

2.   LITERATURE REVIEW

2.1 Major public health emergencies

According to the definition of emergency response law of the people's Republic of China, public health emergencies refer to major infectious diseases, mass unexplained diseases, major food and occupational poisoning and other events that seriously affect public health that suddenly occur and cause or may cause serious damage to public health.According to the nature of public health emergencies, the degree of harm and the scope involved, public health emergencies can be classified into four levels: especially significant (grade I), major (grade II), larger (grade III) and general (grade IV). Therefore, major public health emergencies refer to public health emergencies of class II and above. Because of its negative impact on public health, economy and society, it is often the focus of attention, especially the new coronavirus pneumonia epidemic.

In recent years, the research on public health emergencies is increasing with the continuous occurrence of events. The research in medicine mainly focuses on exploring the source of emergencies and developing vaccines. The research in the field of public management mainly focuses on coping strategies of emergencies and establishing joint prevention and control mechanism. The research on communication and marketing mainly focuses on the communication of emergencies, the development of public opinion and the impact.Zheng Yu (2017) studied the influencing factors of public opinion information dissemination tendency in public health emergencies from the perspective of negative emotions of the public. The research shows that negative emotions play a regulatory role in the impact of emergencies on dissemination tendency [2].Wang Lin et al. (2019) studied the communication and evolution of emergencies in social media, and believed that information with strong timeliness and novel content would be more widely spread. If the official media's articles showed certain subjectivity, the amount of forwarding and attention would be greater, and put forward the corresponding public opinion monitoring and public opinion guidance scheme [3].Li Yuelin and Wang Shanshan (2020) believe that the information release of emergencies should be timely and standardized, form a multi-pronged dynamic release mechanism, establish two-way communication channels with the public, strengthen the investigation and attention of public information needs, ensure the accuracy of epidemic information release, and effectively meet the information needs of the public [4].

2.2 Geographical stigma

2.2.1 Definition of geographic stigmatization

The word "stigma" originated in ancient Greece. It refers to marking slaves, criminals or traitors by portraying special symbols in the human body. With the enrichment and development of the research theory of stigma, it is generally believed that stigma refers to the derogatory and insulting label that the public places on individuals or groups with some kind of social undesired and dishonorable [5].Sociologists Goffman(1967) believe that stigmatization is the process of undermining the social status of individuals or groups because they have certain characteristics that society does not expect [6].Kurzban(2001)   think that stigma is the inevitable result of evolution for the survival race [7].Corrgian P.W.(2004)further study holds that public stigma and self-stigma are a unified whole, and public stigma is a derogatory stereotype of stigmatized groups by other social groups. Self-stigma is self-deprecation and self-denial of stigmatized people after public stigma. Former definitions are limited by specific situations or understanding perspectives, too much attention to individuals and neglect of the corresponding social and cultural environment, which is not scientific and strict [8]. Linket

al.(2001)redefined the concept of stigma as referring to the simultaneous occurrence of labelling, stereotype, loss of status and discrimination in society [9].Yang et al.(2007)believe that stigma is essentially based on linguistic relationships, discourse power, and the process of imposing derogatory labels on vulnerable groups or individuals [10].

Influenced by the activities of western countries and international organizations to eliminate stigma, stigma research has first attracted the attention of medical psychiatry in China. In addition, some scholars pay attention to the domestic identity and group-based stigma.From the perspective of social representation, Guan Jian (2006) conducted a qualitative research on migrant workers in Tianjin n area to understand the construction and formation mechanism of social stigma [11].The research of stigma is mainly focused on sociological psychology in China, and the research from the angle of marketing management is relatively few. At present, the academic circles have not put forward the representative authoritative concept of regional stigma.Synthesizing the above research on stigma, this paper holds that regional stigma refers to the social public putting a derogatory or insulting label on the region. Such negative labels will make the relevant people in the region suffer unfair treatment, even exclusion and discrimination in the network and even in social life.

2.2.2 Causes and Characteristics of Regional Stigma

With regard to geographical stigma, there are still few domestic studies. But from the existing literature can explore the causes and characteristics of regional stigma. Chen Xuewei (2017) pointed out that the reasons for regional stigmatization are: the label has spatial displacement, the communicator's main body cognition is different, and the threshold of public domain under the participation of audience is low.In the context of the new media, it is easy for the public to form a certain prejudice and impression on a certain region, and the communicators continue to publish negative news about a certain region. The region is easy to be "pan-regional label ", today's network environment has a certain right to freedom of expression, some netizens tend to blindly follow the topic of regional label, will be irrational emotional catharsis [12].Li Qiang et al.(2008) believed that in addition to the biological needs of stigma (raising self-esteem, gaining personal superiority, relieving anxiety), it is also influenced by culture (sociopolitical, historical, cultural background, etc.), that is, stigma is the product of the interaction biological innate tendencies and cultural forces [13]. Zhang Le and Tong Xing (2010) believe that in emergencies, people will form a sense of crisis and perceive risk, and the consequences of risk perception are often accompanied by "stigmatization ".Stigma has the following characteristics: The first is destructive, distorting people's normal senses, so that it brings a kind of belittling color, it will cause social, political order and other chaos to a certain extent; the other is rapid pollution, which is often widely spread before the source of risk is identified; and the third is not easy to eliminate, once stigma is formed, it develops into stereotypes and cultural prejudices, and even if much is done, it is difficult to eliminate [14].

2.2.3 Impact of geographical stigma

Yang Xinde et al .(2009) believed that there is a close relationship between stigma and segregation, prejudice and discrimination. "Regional stigma" is not conducive to the employment and life of people in the stigmatized areas, affects regional coordination, and even affects the process of building a harmonious society. In general, geographical stigma can lead to prejudice against the region, social exclusion and discrimination, which may cause dual psychological and physical harm to the people of the region. Secondly, regional stigma can lead to group members feel inferiority complex for their identity and produce self-stigma for group culture, which is similar to the "Rosenthal" effect of psychology, which will cause psychological pressure on people in the contaminated area. There are   phenomena such as low self-esteem, low mood and self-abandonment [15]. At the same time, regional stigma will also damage the image of the region and have a negative impact on tourism and economic development. Wang Rong and Xie Changqing (2019) found that the negative emotions such as prejudice and anger caused by long-term regional will cause contradictions and conflicts between stigmatized

groups and contaminated groups, and will affect the of social stability [16]. In terms of moral ethics, regional stigma distorts the outside world's cognition of the region and violates the social ethics of fairness and justice. Finally, regional stigma can also damage the international image, today's world is a global integrated, pluralistic world, the stigma of a region must damage the overall image.

2.3 Review of literature

From the content of the study, the study of major public health emergencies around its definition, characteristics, diffusion cycle and its impact on public opinion and public sentiment has achieved more fruitful results.These studies provide a theoretical basis for the study of public opinion on major public health emergencies in the social media environment. However, the existing research on major public health emergencies caused relatively little regional stigma.With regard to stigma research, at present, more attention is paid to the stigmatization of people, such as "migrant workers ", which belong to the typical population stigma. Although some research have begun to pay attention to the issue of regional stigma, there is little research on the impact of major public health emergencies on regional stigma.From the research of view of research methods, most of the existing regional stigma is studied by literature review method, scenario simulation method and so on, which lacks real data.The Weibo text data has the characteristics of large quantity, timely, accurate and easy to obtain. Therefore, based on the rooted theory, this paper analyzes and studies how major public health emergencies cause regional stigmatization by influencing public psychology through the data of Weibo platform. In order to put forward some de-stigmatization strategies for different subjects such as the public, media and government, repair the image of the city, maintain social harmony and stability and economic development.

3.   RESEARCH DESIGN

This paper mainly studies the influence of major public health emergencies on regional stigma. Based on the rooted theory, this paper grabs data from Sina Weibo platform and collects relevant data. Sina Weibo is one of the most influential social media platforms in China, with a monthly activity of nearly 500 million.Since the outbreak of the COVID-19, related incidents have been concerned, causing heated discussion among the majority of Internet users.Sina Weibo from January to April 2020,"COVID-19"topic reading reached 2.12 billion, was discussed 445000 times.A large number of comments on the topic of epidemic related events have fully expressed the attention of netizens to the epidemic situation of COVID-19, the real emotional state of netizens, and provided a large number of raw materials for studying the mechanism and influence of major public health emergencies on regional stigma.Therefore, with"COVID-19" as the topic, using the octopus collector to grab CCTV news, People's Daily, China News Network,Southern weekly and other mainstream news media Weibo account related events user comment data as a sample.This study extracted the following nine user interaction rate (number of likes and comments) high, overheated search caused hot topic information for data analysis, see Table 1. Because of the large number of comments, the comments are coded according to the following criteria: first, delete comments unrelated to this topic event, delete comments that are not materially helpful or too simple; third, delete similar content published in the same ID.

Table 1.   Data capture.

Media	Date	Topic
The Paper	25 January 2020	85 hotels in Wuhan to support medical staff
China News Network	25 January 2020	Statement issued by Hubei Red Cross Society in Wuhan
People's Daily	7 February 2020	16 provinces, one province, one city to support Wuhan and other cities in Hubei
Southern Weekly	23 February 2020	Five foreign athletes of Wuhan Military Games are suffering from malaria
China News Network	26 February 2020	Details of patients with the earliest COVID-19 in Wuhan
CCTV news	9 March 2020	The Foreign Ministry responded to the U.S. Secretary of State's statement

Media	Date	Topic
Time video	24 March 2020	The woman was isolated from the landing of a Hubei nationality
China Newsweek	26 March 2020	Studies show that the new crown virus has spread in Italy since January 1
China Newsweek	30 April 2020	Wuhan has become the city where Internet users want to travel most

4. STUDY RESULTS

4.1 Coding and modelling

First of all, open coding, through the analysis of nine topics in Table 1, mining the original comments related to the research topic from the data, according to the sample event topic of the comments of the sentence serial number. The data are divided into coded data and reserved test data, which are distinguished by the second number of codes, such as the first comment of the first topic event that encodes 1-1-1, and the first comment that encodes 1-2-1 represents the first topic event of reserved data. Use short words or sentences to summarize the contents of the comments, develop them into concepts, and compare the concepts to classify the categories to sum up the categories. Finally ,34 concepts are abstracted from the original comment data and summarized into 11 categories (annotated with B1...Bn).

Then the main axis coding is carried out, and to connect the category formed in the open coding is by cluster analysis.Seek clues and analyze whether there are potential connections in each category at the conceptual level. Through the spindle analysis, it is found that there is a certain logical and causal relationship between the comments and topic events of Internet users.According to Bandura's three-dimensional interaction theory, the internal factors, external environmental factors and human behavior factors of human beings are independent and mutually determined after major emergencies [17]. Human internal and behavioral factors can be summarized as individual level (risk perception, individual behavior); the main external factors are divided into social level (media, social organization) and government level (government response, international dialogue).Finally, five main categories can be summed up from 11 categories (annotated with C1...Cn), as shown in Table 2.

Table 2.   Spindle encoding of comment data.

Fundamental Category	Subcategory
C1 Topic classification	B1 Event topic subject
C2 Attribution of responsibility	B2 The virus came from Wuhan
	B3 Failure of the Government and bodies
	B4 Improper media communication
C3 Request for assistance	B5 Other cities in Hubei request support
C4 Emotional response	B6 Negative emotional reactions
C5 Geographical stigma	B7 Self-stigmatization
	B8 Psychic trauma
	B9 Discrimination against others
	B10 Regional blackening
	B11 Urban image impaired

Then the selection coding is carried out to explore the core category from the main category, to connect it systematically with other categories, and to describe the whole phenomenon and event in the form of story line.On the basis of cognitive attribution [18] and emotional attribution [19] theory, it is found that can be classified into two core categories:One is the formation of event —— attribution —— behavior.When a major emergency

occurs, internet users will discuss the topic of the incident and find out the responsibility for the origin of the matter.After the outbreak of the epidemic,some netizens attributed the responsibility to Wuhan people, and some netizens attributed the responsibility to the government and relevant departments.These responsibilities were attributed to the regional stigmatization, which seriously damaged the image of Wuhan.Second, situational stimulation —— the formation of emotional —— behavioral patterns.The topic of major emergencies as a situational stimulus can trigger a variety of negative emotions,including anger, resentment, indignation, disappointment, sadness and so on. Negative emotions can not only directly lead to negative behaviors such as stigma related areas, but also the attribution of negative emotions is prone to self-stigma, psychological trauma, personnel discrimination, regional blackness and so on, which makes the image of the city damaged.

Finally, the two core categories were merged into a core category of "stimulating —— organism —— response" to establish a model of the impact of major public health emergencies on regional stigma with topic classification (C1), responsibility attribution (C2), emotional response (C4) and regional stigma (C5) as core variables, as shown in figure 1.
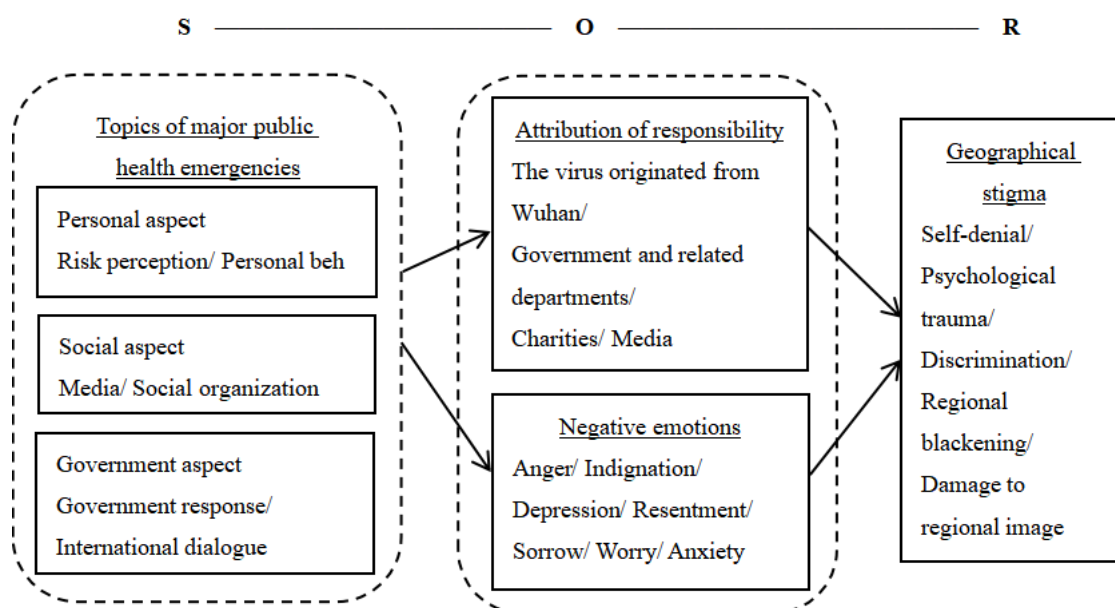

Figure 1.　Model of Impact of Major Public Health Emergencies on Regional Stigma.

4.2　Theoretical saturation test

A third of the collected samples were reserved for saturation test, and 3 topics were reserved, as shown in Table 3. The collection method and processing of sample data are the same as the data used for modeling. After analyzing the reserved data, all the comments are within the scope of coding, and there are no new categories, which indicates that the theory is saturated.

Table 3.　Data reservation.

Media	Date	Topic
China News Network	13 March 2020	The epidemic situation of other cities and counties in Hubei except Wuhan is low risk
CCTV News	26 March 2020	Geng Shuang batch of Penglaio reversion Wuhan virus
News Head	1 May 2020	Government report on the gathering epidemic situation in Heilongjiang

5.　RESEARCH CONCLUSIONS

Taking the epidemic situation of new coronavirus pneumonia as an example, using the method of taking root theory, this paper grabs the comments on new coronavirus pneumonia from Sina Weibo from January to April. The theoretical model of the influence of major public health emergencies on regional stigma is

established by open coding, spindle coding and selective coding, and the saturation test of the model is carried out.The study found that major public health events produce a variety of topics under social media conditions, which can be divided into three types: first, personal level, mainly including personal risk perception and personal behavior; second, social level, Mainly media and social organizations; third, government level, mainly government response and international dialogue.These topics lead to regional stigmatization through two paths, and the first makes the public attribute responsibility to the topic, thus creating regional stigmatization. Another path is that the topic creates negative emotions for the public, leading to regional stigmatization.The harm caused by regional stigma can be summarized as follows: self-stigma, psychological trauma of people in contaminated areas, discrimination and geographical blackness of personnel, damage to the image of contaminated areas, affecting the employment and life of people in contaminated areas, and hindering the economic recovery of contaminated areas.This includes many negative economic impacts, such as reduced investment, lower tourism revenues and lower employment rates.

6.   COPING STRATEGY

In general, regional stigma can have many negative effects and is extremely unfavorable to regional development. In order to reduce the negative impact of stigma, all walks of life should give full play to their strengths and make concerted efforts to work together for the cause of stigma removal in Wuhan. Therefore, we should be put forward of targeted de-stigmatization strategy for different subjects: At the individual level, we should keep sober, resist rumors, spread positive energy, insist on the national and collective interests as the most important, and appeal for individual interests through reasonable channels, and fully believe in the decisions made by the state and the government. At the social level, we should do our best to overcome the difficulties together with the city. Among them, the media should have conscience, resist rumors, unblock public opinion, propagate positive energy, and reshape the image of the city. The media can also invite stars, network celebrities and other webcast, to help the city with goods, to help the city restore and develop the economy. Social organizations should do their own work, not like the Hubei Red Cross to use power for personal gain.Enterprises should also actively assume social responsibility, actively donate donations, prohibit the development of difficult wealth, do not smear the city.At the national level, the government should actively monitor and guide the network public opinion, in the event of causing a greater stir, the government should disclose information to the public in time to clarify the facts; improve the ability of comprehensive management, open online government platform, actively listen to public opinion, understand the people, better serve the people, make public management more convenient and efficient; establish a reward and punishment mechanism to reward those who contribute during the epidemic period, and severely punish those who violate the law and discipline; actively organize the resumption of work, provide more preferential policies, and promote urban economic development; To oppose the politicization of the virus, for the insult from the west,we should take effective counter measures to enhance national self-confidence and social cohesion.

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