

The Influencing Factors of The Social Environment of Public Psychological Crisis In COVID-19

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Abstract

The COVID-19 epidemic spreads around the world early in 2020. As a public emergency, the COVID-19 epidemic has caused a public psychological crisis such as panic, anxiety and worry. Government trust and social support are considered social environmental factors affecting the public psychological crisis, but there is a lack of strong empirical evidence. Thus, it has important theoretical and practical significance to study the impact of government trust and social support on the public psychological crisis. Through regression analysis of the questionnaire during the pandemic, we found that government trust helps reduce public psychological crises, but informal social support increases public psychological crises. Therefore, strengthening government trust and preventing the negative effects of informal social support are effective ways to alleviate public psychological crises.

Introduction

At the beginning of 2020, novel coronavirus pneumonia (hereinafter referred to as "NCP") started to spread all over the world. On January 26, 2020, the National Health Commission released the *Notice on Issuing the Guiding Principle of Emergency Psychological Crisis Intervention of Novel Coronavirus Pneumonia*, bringing psychological crisis intervention into the overall deployment of epidemic prevention and control, aiming to reduce the psychological harm caused by the epidemic and promote social stability¹. Psychological crisis intervention is an indispensable constituent in the emergency system of national public health emergencies, playing an important role in emergency management². In addition, reinforcing persuasion and intervention of the public psychological crisis during public emergencies is an important part of reinforcing the construction of a social psychology service system and cultivating a positive social mentality.

The Raising Of Issue

Psychologist G. Caplan began to conduct systematic research on the psychological crisis in 1954 and proposed the psychological crisis intervention theory³. He thinks that when an individual faces dilemma and the method by which he usually deals with the problem and the supporting system are not enough to handle the dilemma, that is, when the dilemma he must face exceeds the individual ability, the individual will produce a temporary psychological imbalance. This imbalanced state is called a psychological crisis. The characteristic of the psychological crisis is high tension accompanied by anxiety, frustration and confusion⁴. According to the stimulating source of the psychological crisis, the psychological crisis can be divided into two types: the growth-related crisis and the environment-related crisis, among which the environment-related crisis is psychological crisis caused by external affairs and thus has higher uncertainty⁵. Negative psychological reactions, such as anxiety, frustration, confusion and nervousness, caused by NCP among individuals or groups are environment-related crises. Empirical research explores the causal relationship of affairs and strengthens the certainty cognition of human beings on affairs. Therefore, exploiting the influencing factors of the environment-related psychological crisis and conducting effective persuasion and intervention on the psychological crisis are prerequisites to relieve the psychological harm caused by public emergencies and safeguard public psychological health.

There is synchronicity between the research of the academic circle on the psychological crisis with its influencing factors and the breakout of public emergencies. This means that the breakout of public emergencies usually leads to the investigation of the academic circle on the psychological crisis. Existing studies accumulate abundant experience and foundations for the further investigation of psychological crises. In terms of the research content, researchers investigate the influencing factors of the psychological crisis mainly from the nature of public emergencies, individual, and social environment, among which the nature of public emergencies such as novelty, controllability and predictability is considered the important cause of the production of the psychological crisis⁶. Individuality, attitude, cognition toward public emergencies, and whether a person has experienced a similar public emergency are individual factors that influence the psychological crisis^{7 8}. In addition, social support and government trust are important factors that influence psychological crises in the social environment aspect⁹⁻¹⁰.

Agreement has basically been reached in the research on the nature of public emergencies and individual factors. However, common views have not yet formed on the social environment factors that influence the psychological crisis. Regarding the research method, the qualitative research approach is widely used in the existing research. Investigation is conducted mainly in aspects such as concept sorting, current situation description, theory investigation and logic inference. However, quantitative research is still insufficient. At present, there are only a few examples related to SARS using quantitative research on the psychological crisis and its influencing factors¹¹. From the perspective of research, the psychological crisis is widely considered from the perspective of psychology and sociology in the existing research. On the other hand, psychological crises are accompanied by public emergencies, and the persuasion and intervention of psychological crises have become important issues in the scope of public crisis management.

In conclusion, this research will take the NCP as the research background, investigate the social environment factors that influence the public psychological crisis under the circumstance of public emergencies by using a questionnaire, and focus on two social environment factors: public trust in the government and social support.

The following structure of this paper is arranged as follows: section two is the research assumption, which will sort the social environment factors that influence the public psychological crisis, reveal the possible effects of government trust and social support on the public psychological crisis, and propose the core assumption of this research; section three is the research design, which introduces the data sources, variable description, and econometric model; section four announces the result of the substantial evidence; and the last section sums up the whole paper and proposes the corresponding practical suggestions.

Research Assumption

Government Trust and Psychological Crisis. Government trust is the type of psychological approval and evaluation attitude of the public toward the operation and behavior of the government between their expectation and cognition¹². The psychological crisis is a state of psychological imbalance produced due to the inability of the individual to deal with the dilemma because of the uncertainty of the situation and the unpredictability of the future. Therefore, the individual who is unable to deal with the current situation turns to external forces to handle the current dilemma. In public emergencies, government trust mainly comes from the approval and evaluation attitude of the public toward behaviors such as the management and control of public emergencies by the government and the formulation of measures to handle public emergencies. When the public approves the behaviors of the emergency management of the government, their confidence to face the dilemma will strengthen accordingly, thus relieving the psychological imbalance level, that is, relieving the sense of psychological crisis of the public. In contrast, the lack of government trust will aggravate the anxiety and unease of the public, thus leading to negative affairs such as panic buying of goods, flowing of rumors, and public panic, affecting the harmony and stability of society. Therefore, the lack of social trust or government trust is considered an important reason for the production of psychological crises or psychological panics¹³. Therefore, this research proposes the following hypotheses:

Assumption H1: While other factors remain unchanged, the higher the level of government trust by the public, the lower the level of psychological crisis;

Assumption H1a: While other factors remain unchanged, the higher the level of trust of the public toward the information released by the government, the lower the level of their psychological crisis;

Assumption H1b: While other factors remain unchanged, the higher the level of trust of the public toward the measures of the government, the lower the level of their psychological crisis.

Social Support and Psychological Crisis. "Social support is the type of selective social behavior to conduct help free of charge on social inferiors by using certain substantial and spiritual measures by certain social networks"¹⁴. According to different social networks, social support includes formal social support and informal social support. Compared with

government trust, academic circles do not yet commonly view the influence of social support on the psychological crisis. Some scholars hold that groups that receive multiple dimensions of social support have a good interpersonal relationship, and good interpersonal interaction can strengthen the sense of psychological crisis. During interpersonal interaction, a specific social psychological atmosphere can be easily produced. The subject content related to public emergencies is repeatedly spread, causing psychological implications for the individual and finally aggravating psychological crises such as panic¹⁵. In contrast, some scholars hold that people who have higher social support can survive public emergencies more easily. Research related to social group stress also indicates that when the stress situation risk is shared with other people, the negative influence of the stress situation will be greatly reduced¹⁶. In addition, scholars have concluded based on data during the NCP epidemic situation that social support can relieve the relationship between internal stigmatization and the psychological crisis; that is, when the individual has a higher level of social support, the influence of internal stigmatization on the psychological crisis is likely to be reduced, thus relieving the level of psychological crisis of the public¹⁷. The different opinions of existing studies on the relationship between social support and the psychological crisis may be caused because the influence of different types of social support on the public psychological crisis has not yet been investigated. Therefore, in addition to investigating the influence of social support on the public psychological crisis, this research will also further investigate the different functions of formal social support and informal social support on the psychological crisis.

Similar to government trust, social support is an important way for individuals to receive external support. When facing public emergencies, the individual produces a psychological crisis due to the inability to compete with the dilemma, thus adopting the strategy of searching for external support. In detail, informal social support is the social network produced thanks to interpersonal interaction. In public emergencies, rumors and panic easily breed in social networks based on interpersonal interaction, thus aggravating the level of public psychological crisis. In contrast, formal social support from organizations and communities can normally provide correct information and powerful support measures in public emergencies, which has a certain defense against the production of the public psychological crisis. Therefore, this research proposed the following assumptions:

Assumption H2: While other factors remain unchanged, the higher the level of social support the individual owns, the lower the level of the psychological crisis;

Assumption H2a: While other factors remain unchanged, the higher the level of formal social support the individual owns, the lower the level of the psychological crisis;

Assumption H2b: While other factors remain unchanged, the higher the level of informal social support the individual owns, the higher the level of the psychological crisis instead.

Methods

Data collection. The research were approved by research ethics institution of Jinan University and all methods were performed in accordance with the relevant guidelines and regulations. The experiments was obtained from all subjects or their legal guardian(s) confirming that informed consent. All participants provided online informed consent prior to data collection.

Due to the influence of the NCP epidemic situation, the survey of this research cannot select samples by random sampling. Therefore, this paper conducted a questionnaire from 12 participants who received adult higher education and collected sample data on the public by using the network filling and answering method. The participants were all in-service personnel. The companies and cities where they were in have certain heterogeneity ensured that the data were more random and scientific. The survey was from May 29 to June 30, 2020. A total of 1,311 questionnaires were collected in this survey. After the questionnaires were collected, five samples whose answers were incomplete or whose results were the same were removed. Therefore, this paper had 1,306 valid questionnaires, accounting for 99.6% of the collected questionnaires.

Variable Description and Factor Analysis. The explained variable of this research is the psychological crisis. However, at present, quantitative research on psychological crises in academic circles is not yet systematic. Therefore, the measurement of the psychological crisis is conducted mainly from several aspects, such as anxiety, suspicion, trauma and depress¹⁸. This research uses Professor Jing Huaibin's measurement on the psychological crisis for reference¹⁹, respectively measuring the depression emotion by using some questions in the depression scale (CES-D) of the Center for Epidemiological Studies²⁰; measuring the trauma by using some questions in the impact of event scale (ISE-R)²¹; measuring the anxiety emotion by using some questions in the self-rating symptom scale (SCL-90)²²; and adding the measurement of the public suspicion (as shown in Table 1). Finally, the proxy variable of the psychological crisis is constructed by using the method of factor analysis.

Table 1
The explanatory variables versus core explanatory variables

Variables	Metric	Assign value
Psychological crisis	P1 I am worried about being infected with the novel coronavirus.	1=Strongly Disagree,
	P2 Even with the help of family members and friends, I am still unable to get rid of worries about infection of the novel coronavirus.	2= Disagree,
	P3 I had poor sleep because of the novel coronavirus.	3= Moderately Agree,
	P4 I feel nervous.	4= Agree,
	P5 I feel stressful.	5= Strongly Agree
	P6 I feel restless and uneasy.	
	P7 I think the novel coronavirus will happen again.	
	P8 Everything around me reminds me of the epidemic.	
	P9 Worry about the possibility of infected people in your work unit, and keep a certain distance for communication.	
	P10 Worry about the possibility of infected people in their living area, and keep a certain distance for communication.	
	P11 Worry about the possibility of infected people on the streets and reduce communication with strangers.	
	P12 I think exposure increases the risk of infection, so I avoid contact with other people.	
	P13 I can't help searching the Internet for the related information about the novel coronavirus.	
Government trust	C1 What is your attitude toward the announcement of the novel coronavirus by the central government?	1=Complete disbelief; 2=Less convinced;
	C2 What is your attitude toward the announcement of the novel coronavirus by the local government?	3=Medium consistent;
	C3 The policies and measures taken to prevent and control the epidemic have made me trust the central government more.	4=Be more confident in;
	C4 The policies and measures taken to prevent and control the epidemic have made me trust the local government more.	5=Totally believe
	C5 The policies and measures adopted to prevent and control the epidemic have effectively safeguarded the interests of the country and its people.	1=Strongly Disagree,
Social support	S1 When I encounter difficulties, the company leaders will timely pay attention to help me.	2= Disagree,
	S2 I can share the happiness and sadness with the company leaders.	3= Moderately Agree,
	S3 I can get emotional help and support from the company leader when I need it.	4= Agree,
	S4 The community helps me when I am in trouble.	5= Strongly Agree

Variables	Metric	Assign value
	S5 I can get emotional help and support from the community when needed.	
	S6 Friends help me when I am in trouble.	
	S7 I share happiness and sadness with friends.	
	S8 I can get emotional help and support from my friends when needed.	
	S9 My family pays timely attention to help me when I am in trouble.	
	S10 I can share my happiness and sadness with my family.	
	S11 I can get emotional help and support from my family when needed.	

The core explanatory variables of this research are government trust and social support. In public emergencies, government trust normally comprises two aspects: the trusting level of the public on the public emergency information released by the government and the trusting level of the public on the measures adopted by the government to deal with public emergencies. Second, according to different levels of the government, government trust is divided into central government trust and local government trust. Therefore, this research measures government trust by querying the trusting level of respondents on the information and measures released by the central government and the local government. In addition, this research focuses on public social support, which includes informal social support from relatives and friends and formal social support from organizational leaders and communities. Therefore, we query the respondents whether they receive help on emotion and substance from their relatives, friends, organization leaders and community during the dilemma to measure the social support situation of the public in public emergencies. The measurement of the core explanatory variable is shown in Table 1.

As mentioned above, both individual factors and public emergencies are important factors that influence psychological crises. Therefore, this research regards individual factors such as gender, age, educated level, vocation and marital status as the control variables. In addition, the provinces where the respondents were located in the NCP epidemic situation were regarded as the control variable, and the influence of public emergencies on the individual psychological crisis was controlled as much as possible to ensure the correctness and credibility of the research results. The definition and the measurement of the control variable are shown in Table 2.

Table 2
Control variables

Variable	Assignment
Gender	1= male; 2 = female
Age	Truthfully fill in
Marital Status	1= Unmarried; 2 = married; 3 = divorce; 4 = widowed
Education	1= Junior high school or below; 2=Senior high school/secondary vocational school; 3= Junior college (adult higher education); 4= Junior college (formal higher education); 5= Undergraduate (adult higher education); 6= University degree (formal higher education); 7= Master degree or above
Occupation	1= worker; 2 = farmer; 3 = soldier; 4= medical personnel; 5= scientific, educational and cultural personnel; 6= enterprise management personnel; 7= government/public institution personnel; 8 = students; 9= migrant workers; 10= retirees; 11 = others

This research uses SPSS 22.0 to analyze the reliability of the index among the three variables of psychological crisis, government trust and social support. After the analysis, the Cronbach's alpha coefficients were 0.911, 0.727 and 0.855, all greater than 0.70, indicating that the index internal reliability of the three variables was good. Meanwhile, the construct validity of the indices contained in the three variables is measured by using the KMO and Bartlett's test of sphericity. As shown in Table 3, the KMO values of the three variable indices are 0.915, 0.720 and 0.806, all greater than 0.7, and the

significance levels of Bartlett's test of sphericity are all 0.000, smaller than 0.05, meaning that there is a good degree of association among the indices of psychological crisis, government trust and social support. The data is suitable for factor analysis.

Table 3
KMO and Bartlett test results

		Psychological crisis	Government trust	Social support
Clone Bach Alpha		0.911	0.727	0.855
KMO sampling suitability quantity		0.915	0.720	0.805
Bartlett sphericity test	The approximate chi-square	10648.894	2559.203	8599.346
	Degrees of freedom	78	10	55
	significance	0.000	0.000	0.000

The common factors of the psychological crisis, government trust and social support are extracted by using principal component analysis, and the load values of all factors are obtained through varimax rotation. The common factor of the two variables of psychological crisis and government trust is extracted with the standard that the characteristic value is greater than 1. The common factor of social support is extracted by fixing the number of factors to 2. Explanations are conducted on 74.90%, 77.38% and 63.21% of the population variance variation information. Table 4 renames the common factor indices based on the specific content contained in the common factor indices. Meanwhile, the scores of the psychological crisis, government trust and social support are calculated according to the scores after the rotation of the common factor of each variable and the percentage of variance of sum of squares of rotating load.

Table 4
Factor analysis results

Variable	Common factor naming	Containing index sequence	Cumulative percentage of square and variance of rotating load
Psychological crisis	Anxiety	P3□P4□P5□P6	27.97%
	Doubt	P7□P8□P9□P10□P11	49.60%
	Traumatic	P12□P13	62.79%
	Depression	P1□P2	74.90%
Government trust	Trust in government measures	C3□C4□C5	48.99%
	Trust in government information	C1□C2	77.38%
Social support	Formal social support	S1□S2□S3□S4□S5	31.78%
	Informal social support	S6□S7□S8□S9□S10□S11	63.21%

Hypothesis testing methods and Variable Description. The explained variable and the core explanatory variable designed in this research both belong to the interval variable. Therefore, evaluation of the research assumption is conducted by using the linear regression model. The model setting is as follows:

$$y = \alpha_0 + \alpha_1 C + \alpha_2 S + \beta CV + \varepsilon \quad \text{Formula (1)}$$

In formula (1), C and S stand for the core explanatory variables of government trust and social support, respectively, and their estimated coefficients and are the focus of this research. According to the research assumption, the anticipations and are both negative. In addition, CV is the control variable, is the random disturbance, and is the constant term.

Table 5 shows the descriptive statistics of the main variables. In the research, all the samples were divided into two groups, “low psychological crisis” (the psychological crisis score was smaller than 4.83) and “high psychological crisis” (the psychological crisis score was greater than or equal to 4.83), according to the average (4.83) psychological crisis score, and comparisons were conducted between the different groups. The data show that different aspects of government trust levels and social support situations have a significant influence on the psychological crisis of the public during the epidemic situation. In addition, individual characteristics such as age and education level can also significantly influence the psychological crisis level of the public.

Table 5
Descriptive statistics of main variables

Variable	Index	Total	Low psychological crisis	High psychological crisis	Difference test
		Mean (standard deviation)	Mean (standard deviation)	\bar{x}/n (standard deviation)	Significance
		Percentage (frequency)	Percentage (frequency)	/ percentage (frequency)	
Government trust	Trust in government information	6.52(1.38)	6.72(1.21)	6.27(1.54)	180.558***
	Trust in government measurement	10.95(2.32)	10.64(2.47)	11.37(2.02)	137.350***
Social support	Official social support	10.70(3.02)	9.98(2.91)	11.67(2.90)	353.866***
	Informal social support	19.11(2.74)	19.11(2.84)	19.12(2.59)	445.405***
Gender	Male	52.8%(689)	53.0%(397)	52.3%(292)	0.030
	Female	47.2%(616)	47.0%(352)	47.5%(264)	
Age		32.87(8.45)	31.72(8.03)	34.41(8.77)	108.246***
Education	Junior middle school or below	8.3%(108)	7.5%(56)	9.4%(52)	24.044***
	Senior high school/secondary vocational school	24.4%(318)	26.8%(201)	21.0%(117)	
	Junior college	27.4%(357)	30.7%(230)	22.8%(127)	
	Master degree or above	40.0%(522)	35.0%(262)	46.8%(260)	

Note:

1. The last column is chi-square test for the difference of characteristics between the two types;
2. *p <.05, **p <.01, ***p <.001;
3. The mean value and standard deviation of the distance of the variables were reported above; and the percentage and frequency of the fixed variables were also reported;
4. Junior college includes junior college (adult higher education) and junior College (formal higher education);
5. Bachelor degree or above including university degree (adult higher education), university degree (formal higher education) and master degree or above.

Result

Regression Result. Table 6 reports the regression result of the model. The regression result of model (1) shows that when other variables are not controlled, the coefficient of government trust is 0.043, but its significance level is greater than 10%, indicating that government trust is not statistically significant in relieving the production of the public psychological crisis; the coefficient of social support is 0.307, significant at the 1% level, indicating that social support significantly increases the sense of psychological crisis of the public. In model (2), after the control variables such as province, gender, age, marital status, educated level and vocation are added, the influencing direction and significance level of government trust and social support on the psychological crisis remain unchanged. Therefore, both assumption H1 and assumption H2 are not correct.

To further consider the influences of different types of government trust and social support on the public psychological crisis level, different types of government trust and social support are brought into model (3). As is known in the regression result of Table 6, under the premise of controlling other variables, different types of government trust and social support are significant at the 1% level. However, their coefficients are different in the plus and minus characteristics. In other words, different types of government trust and social support have significant influences on the psychological crisis level, but the functions they play are not the same. The coefficients of the public on the trust of information released by the government and the informal social support are minus, indicating that the higher the level of the trust of the public on information released by the government during the epidemic situation, or the more informal social support the public own, the lower the psychological crisis level; in contrast, the coefficients of the public on the trust of measures of the government and the formal social support are plus, indicating that the higher the level of the trust of the public on measures by the government to handle the epidemic, or the more formal social support the public own, the higher the psychological crisis level. In short, the trust level of the public on the information of the epidemic released by the government and informal social support are helpful in relieving the sense of psychological crisis of the public; the trust level of the public on the measures by the government to handle the epidemic and formal social support increase the sense of psychological crisis of the public instead. Therefore, assumption H1a is correct, that is, while other factors remain unchanged, the higher the level of trust of the public toward the information released by the government, the lower the level of their psychological crisis. In addition, assumptions H1b, H2a, and H2b are all incorrect.

Table 6
Regression results

	Model (1)			Model (2)			Model (3)		
	Coefficient	Standard Error	VIF	Coefficient	Standard Error	VIF	Coefficient	Standard Error	VIF
Government trust	0.043	0.038	1.081	0.055	0.038	1.109			
Trust in government information							-0.331***	0.032	1.140
Trust in government measurement							0.148***	0.019	1.161
Social support	0.307***	0.033	1.081	0.270***	0.033	1.118			
Official social support							0.199***	0.015	1.191
Informal social support							-0.054***	0.016	1.176
Province				-0.004	0.009	1.035	0.002	0.008	1.038
Gender				0.165*	0.093	1.035	0.227***	0.085	1.034
Age				0.035***	0.006	1.428	0.021***	0.006	1.459
Marital status				0.136	0.103	1.452	0.215**	0.094	1.463
Education				0.128***	0.029	1.221	0.082***	0.027	1.273
Occupation				-0.044***	0.013	1.038	-0.043**	0.012	1.037
(Constant)	1.510***	0.368		0.079	0.576		2.652***	0.544	
Adjust R2	0.070			0.125			0.287		
F	50.132***			21.610***			47.313***		
Durbin-Watson	1.164			1.301			1.656		
Note:*p <.05, **p <.01, ***p <.001.									

In addition, in the control variables, gender, age, educated level, and vocation type all have a significant correlation with the psychological crisis, indicating that individual characteristics such as gender, age, educated level and vocation type all influence the psychological crisis of the public during the epidemic situation.

Multicollinearity and Endogeneity. There may exist multicollinearity issues in the regression; that is, there exists correlation among the explanatory variables in the regression model, and each explanatory variable influences each other, thus influencing the regression result of the model. This research tests the multicollinearity issue of the regression model by evaluating the VIF value of the variables in the model. The range of the VIF value is between 1 and 10. The closer to 1 the VIF value of the variable, the less serious the multicollinearity issue of the model. As shown in the result of Table 6, the VIF values of each variable in model (1), model (2), and model (3) are all between 1.035 and 1.459. Therefore, this research holds

that there is no serious multicollinearity issue in the regression model. The regression result comparatively correctly describes the relationship among government trust, social support and psychological crisis.

The previous regression result indicates that under the circumstance of controlling other variables, the government trust and social support of the individual have significant influences on the psychological crisis level. However, strictly speaking, this significant relationship cannot indicate that there is a causal relationship among factors because there may be other explanations. For example, other factors that may influence the psychological crisis level are not yet added to the control variables; the lower the psychological crisis of the individual, the higher the trust level of the government may be, or the lower the social support may be, that is, there is a “self-selection” mechanism, in which the psychological crisis may conversely influence the government trust and the social support of the individual. The previous endogeneity issue may lead to the deviation and inconsistency of the evaluation result of the regression model.

Therefore, the endogeneity issue of the model can be tested by evaluating the Durbin-Watson value of the regression model. The range of the Durbin-Watson value is between 0 and 4. The closer to 2 the value is, the less relation there is among the residual values. As shown in the result of Table 6, the Durbin-Watson values of model (1), model (2) and model (3) are between 1.164 and 1.656, comparatively close to 2. Therefore, it stands to reason that the endogeneity of the model is not serious.

Discussion

This research takes the NCP epidemic situation as the research background, focuses on the two social environmental factors that influence the public psychological crisis—government trust and the social support of the public—obtains individual microcosmic data by using the network survey method, and quantitatively studies the influences of government trust and social support on the public psychological crisis by using a linear regression model. This is the main contribution to psychological crisis research. The results of the empirical research indicate that under the prerequisite that other variables remain unchanged, the trust of the public toward the government in public emergencies cannot significantly relieve the psychological crisis of the public, and the social support of the public significantly increases the sense of psychological crisis. Furthermore, the influences of different types of government trust and social support on the public psychological crisis are considered. The regression result indicates that the trust level of the public in the epidemic information released by the government and informal social support are helpful in relieving the sense of psychological crisis of the public, and the trust level of the public in the measures by the government to handle the epidemic and formal social support increase the sense of psychological crisis of the public instead.

The data of this survey were collected in June 2020. Early on March 19, 2020, China realized “zero report” of the newly increased local confirmed case and suspected case for the first time. There are 18 provinces and Xinjiang Production and Construction Corps that have no local existing confirmed and suspected cases²³. On April 29, China General Secretary Xi Jinping pointed out that decisive results were achieved in Hubei Province, and major strategic achievements were acquired in the battle of epidemic prevention and control in China²⁴. Therefore, the data of this survey were collected when the NCP epidemic situation was basically controlled. With the NCP epidemic situation basically controlled, the measures to handle the epidemic and the formal social support provided by the government are likely to cause inconvenience to the daily life of the public. A university teacher who accepts the interview expresses that the prevention and control measures and the support of the campus community have had a certain impact on their daily life: *“To prevent the epidemic situation, the university requires the staff living in the university to enter or exit the university community via the campus card. Therefore, it would be quite inconvenient for those who occasionally forget to bring the campus card with them to enter or exit the university. Moreover, the university does not allow outsiders to enter or exit the university. If our relatives or friends want to visit us, they need to apply for a pass in advance, which also causes great inconvenience. (Interview data. Data code: 20200701)”* In addition, formal social support that is suddenly added during the epidemic situation, especially formal social support from the community, is likely to cause certain psychological crises for residents. This situation appears especially evident in the

community where the openness of the information about the epidemic situation is not so strong. One interviewee said, *"Suddenly there was a time when a large-scale disinfection was conducted in the residence community where we live. The residence community arranges volunteers to measure the body temperature at the entrance and exit. We all began to feel slightly worried and scared and guessed whether the epidemic situation worsened. Later, we knew that residents in our residence community were indeed infected with the NCP. (Interview data. Data code: 20200701)"* Thus, under the background when the epidemic situation is basically controlled, the trust of the public in the measures by the government and formal social support are likely to strengthen the psychological crisis level of the public instead. In contrast, in the aspect of resisting the psychological crisis, the informal social network is likely to have a lasting and stable positive function. However, in the beginning of the NCP epidemic situation, informal social networks and interpersonal contact are likely to aggravate the spread of the novel coronavirus and rumors, thus increasing the sense of the psychological crisis of the public. However, with the improvement of the epidemic situation, informal social networks can often play a role in uniting people and resisting the epidemic together, thus relieving the sense of psychological crisis of the public.

This research answers the influencing degree of government trust and the social support of the public on public emergencies by using the quantitative method, deepens the understanding of the public psychological crisis and its social environment influencing factors, and has a certain reference function on the management practice of public emergencies.

1. Strengthen government trust and lower public psychological crisis risk. In public emergencies, reliable information released by the government is an effective way to defend against the public psychological crisis. Therefore, the government should strengthen the judgment and plan research of public emergencies and build a long-term steady joint prevention and control system of public crises and social credit systems to strengthen the credibility of the public toward the government. The government should promptly and correctly release information by using various official channels, correctly guide the public on the understanding and judgment of the developing situation of public emergencies, prevent the negative influence of social rumors on public psychology, and promptly conduct scientific judgment and intervention in the public psychological crisis.

2. Play the positive role of informal social support in public emergencies. On the one hand, we should prevent the negative function of the individual formal social support on the public psychological crisis, clear the responsibility boundary of the organizations such as government, community and social group, and prevent the epidemic prevention and control measures from influencing the psychological crisis level of the public; on the other hand, we should play the positive role of the informal social network of the public on the prevention of psychological crisis, and increase the understanding of the public on public emergencies and its psychological crisis. Popularizing the common sense of handling public emergencies and relieving the negative influence of the psychological crisis is one of the effective ways to scientifically handle public emergencies.

Although this research studies the social environment factors of the psychological crisis by using the quantitative method, there exists a defect in the aspect of the adopted survey data. On the one hand, the survey questionnaires are released through the network platform in the special stage; thus, it cannot ensure that the data totally conform to the requirement of possibility sampling. On the other hand, the NCP epidemic situation belongs to the public health emergency, merely one of the types of public emergencies. Therefore, whether the conclusion is correct for public emergencies of other types still needs to be discussed.

Declarations

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Authors contribution

T.Y. E conceived the studies. K.W. K, P.Z. J and G.S. performed experimentation and wrote and edited the manuscript. All authors reviewed the manuscript.

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References

1. Bureau of Disease Prevention and Control. Notice on Issuing the Guiding Principle of Emergency Psychological Crisis Intervention of the Novel Coronavirus Pneumonia at <http://www.nhc.gov.cn/jkj/s3577/202001/6adc08b966594253b2b791be5c3b9467.shtml> (2020).
2. Yi Ling, Wang Zhongcan, Jiang Zhikuan, Zheng Yijun & Wu Wenzhi. Research Development of the Psychological Intervention of Public Health Emergencies. *China Public Health* **7**, 929–930 (2010).
3. Long Di. The Concept, Category, Evolution and Ending of the Psychological Crisis *Youth Research* **12**, 42–45 (1998).
4. Caplan G. *The Theory and Practice of Mental Health Consultation* 180–181 (New York, 1970).
5. Caplan G. *Support Systems and Community Mental Health: Lectures on Concept Development* 682–683 (New York, 1974).
6. Liang Baoyong. Normal Psychological Stress Reaction and Psychological Intervention of the Public During the Epidemic Phase of SARS. *Research on Psychology and Behavior* **3**, 223–230 (2003).
7. Huang HP, Zhao WJ & Li GR. Survey on Knowledge and Psychological Crisis Related to COVID-19 among Nursing Staff: A Cross-sectional Study [published online ahead of print, 2020 Jul 7;2020;10.2196/20606. doi:10.2196/20606]
8. Fan Fumin. Crisis Reaction and Crisis Psychological Intervention of SARS. *Journal of Tsinghua University (Philosophy and Social Sciences Edition)* **4**, 32–37(2003).
9. Liu Yi. Viewing the Importance of Government Credibility from the Psychological Panic Caused by SARS. *Journal of Guangzhou Institute of Socialism* **3**, 68–71(2003).
10. Zhu Huagui. Analysis on the Panic Behaviors of the Victims and the Influencing Factors under the Circumstance of the Unexpected Disasters. *Journal of Xuehai* **5**, 90–96(2012).
11. Jing Huaibin & Hu Bin. Influencing Factor Mechanism of the Public Negative Psychological Reaction During the Public Crisis and Its Enlightenment on the Public Management. *Public Management Research* **1**, 129–149(2006).
12. Miller, Arthur H. Political issue and trust in government: 1964 -1970. *American Political Science Review* (1974).
13. Liu Yi. Viewing the Importance of Government Credibility from the Psychological Panic Caused by SARS. *Journal of Guangzhou Institute of Socialism* **3**, 68–71(2003).
14. Chen Chengwen & Pan Zequan. On the Sociological Meaning of the Social Support. *Journal of Social Science of Hunan Normal University* **6**, 25–31(2005).
15. Xu Bo. Analysis on the Negative Social Psychological of SARS. *Journal of the Party School of CPC Changchun Municipal Committee* **4**, 73–75(2003).
16. Nilson D C, Nilson L B & Olson R S. The Planning Environment Report for the Southern California Earthquake Safety Advisory Boards. Redlands, CA: Social Research Advisory & Policy Research Center (1981).
17. Li J, Liang W, Yuan B & Zeng G. Internalized Stigmatization, Social Support, and Individual Mental Health Problems in the Public Health Crisis. *Int J Environ Res Public Health*. **17**(12):4507(2020).
18. Yan Ji. Research of Chinese Government on the Psychological Crisis Intervention in the Major Disaster. Shenyang Normal University (2014).

19. Jing Huaibin & Hu Bin. Influencing Factor Mechanism of the Public Negative Psychological Reaction During the Public Crisis and Its Enlightenment on the Public Management. *Public Management Research* **1**, 129–149(2006).
20. Cole J C et al. Development and Validation of a Rasch-Derived CES-D Short Form. *Psychological Assessment* **16**,360–372 (2004).
21. Allden K. Assessing Psychological Trauma and PTSD. *Journal of Nervous & Mental Disease* **186**, 448(1998).
22. Derogatis L R, Lipman R S & Covi L. SCL-90: An Outpatient Psychiatric Rating Scale–preliminary Report. *Psychopharmacology Bulletin* **9**, 13–28(1973).
23. Beijing Youth Daily. National Health Commission: On March 19, China realized “zero report” of the newly increased local confirmed case and suspected case for the first time. There are 18 provinces and Xinjiang Production and Construction Corps that have no local existing confirmed and suspected cases.
<http://news.ynet.com/2020/03/20/2468089t70.html>(2020)
24. CNS. Xi Jinping Has Made the Latest Judgment and Deployment on Epidemic Prevention and Control!
<http://www.chinanews.com/gn/2020/04-30/9172355.shtml>(2020).