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Community resilience and anxiety among Chinese older adults during COVID-19: The moderating role of trust in local government

Jinfeng Zhang¹ | Yan Wang¹ | Mingjie Zhou^{2,3} | Jihong Ke^{2,3}

¹School of Public Policy and Administration, Chongqing University, Chongqing, China

²CAS Key Laboratory of Mental Health, Institute of Psychology, Chinese Academy of Sciences, Beijing, China

³Department of Psychology, University of Chinese Academy of Sciences, Beijing, China

Correspondence

Jinfeng Zhang, School of Public Policy and Administration, Chongqing University, 174 Shazheng Street, Shapingba District, Chongqing 400044, China. Email: psyzhangjf@cqu.edu.cn

Mingjie Zhou, CAS Key Laboratory of Mental Health, Institute of Psychology, Chinese Academy of Sciences, 16 Lincui Road, Chaoyang District, Beijing 100101, China. Email: zhoumj@psych.ac.cn

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Abstract

The worldwide spread of COVID-19 has resulted in an enormous threat to public health, causing global panic, especially older adults suffering severe anxiety due to their vulnerability. With a questionnaire survey on 213 Chinese older adults in April 2020, we examined the role of community resilience in protecting older adults from anxiety during the COVID-19 pandemic, and simultaneously considered the moderating role of trust in local government. The results indicated that community resilience was negatively associated with older adults' anxiety, and this association was weakened for older adults with low trust in local government. This study has implications for intervention designs that combine resilient factors related to communities and local governments to relieve older adults' anxiety during the pandemic. Please refer to the Supplementary Material section to find this article's Community and Social Impact Statement.

KEYWORDS

anxiety, community resilience, COVID-19, older adults, trust in local government

1 | INTRODUCTION

The COVID-19 pandemic, with which humans have no prior experience, not only poses a huge threat to human life and physical health (Buenaventura, Ho, & Lapid, 2020), but also triggers a wide range of panic (Huang & Zhao, 2020). Anxiety, as a common form of negative emotional response in a pandemic, attracts researchers' attention (Cisler & Olatunji, 2012; Meng et al., 2020). Since the aging immune system and underlying diseases make older adults more vulnerable to death from COVID-19 (Applegate & Ouslander, 2020), they are at high risk for anxiety during the pandemic (Meng et al., 2020). In addition, the necessary stay-at-home orders disrupt older adults' important daily activities and social connectedness, which may also intensify older adults' anxiety (Buenaventura et al., 2020). Thus, how to relieve older adults' anxiety during the pandemic becomes an important issue. From the ecological system perspective, individuals are nested within a series of environmental systems, and their interactions with this multi-level environment determine their development (Bronfenbrenner, 1977). During the COVID-19 pandemic, the community is the first line of defence against the pandemic in China (Zhang & Yang, 2020), and community resilience as an important ability for the community to respond to crises (Matarrita-Cascante, Trejos, Qin, Joo, & Debner, 2016), may be effective for maintaining older adults' mental health. Beside communities, the local government is another important external resource to cope with crises (Ma & Christensen, 2018), and older adults' trust in local government may affect their use of external resources, thereby affecting their psychological status during the pandemic. Therefore, this study examined the effect of community resilience on older adults' anxiety relief and further discussed how community resilience interacted with trust in local government to relieve older adults' anxiety.

2 | THEORETICAL BACKGROUND

2.1 | Community resilience and anxiety during the pandemic

Community is usually defined as an interconnected collectivity living in a continuous geographic space with common interests or sharing activities (Meng, Li, & Fang, 2018; Sherrieb, Norris, & Galea, 2010). In China, however, the concept of community has been given a specific definition through reforms around local governance and social welfare to eliminate the shortcomings of the timeworn system (Bray, 2006). Community in China is designed as a basic administrative unit demarcated by the government according to geographical factors and social and political forces (Yip, Leung, & Huang, 2013); it provides important social services to residents and plays a largely administrative role (Bray, 2006). Therefore, community in China is not only a geographical concept but also has administrative implications.

In recent decades, with the frequent occurrence of crisis events, community resilience has increasingly attracted attention from academics (Meng et al., 2018). *Community resilience* refers to a community's ability to prepare for, cope with, and recover quickly from crises through cooperation (Leykin, Lahad, Cohen, Goldberg, & Aharonson-Daniel, 2013; Townshend, Awosoga, Kulig, & Fan, 2014). From the perspective of community members' attitudes and perceptions in a crisis, Leykin et al. (2013) indicated that community resilience consisted of five important constructs, which were leadership, collective efficacy, preparedness, place attachment, and social trust. Researchers usually study community resilience in the context of crises because the most emphasis on community resilience is the ability to quickly recover from disturbances, so that the value of community resilience is more prominent during periods of change and crisis (Matarrita-Cascante et al., 2016).

There have been many studies on the models of community resilience, among which the most recognised was the model of stress resistance and resilience (Norris, Stevens, Pfefferbaum, Wyche, & Pfefferbaum, 2008). The model believes that the community crisis is the result of a combination of external pressure and internal resources within the community. When faced with severe or prolonged external pressure, although the resource system of the community cannot cope with it in a short time, resilient communities can recover their resources and improve their capacity as soon as possible to adapt to the altered environment. At this time, community functions have been restored, and the residents' negative emotions can be effectively alleviated.

In crisis situations, previous empirical studies have indicated that community resilience was a preventive factor for mental health problems. For example, Braun-Lewensohn and Sagy (2014) found that community resilience was strongly linked to decreased anxiety for rural citizens during missile attacks. Similarly, Kimhi, Eshel, and Bonanno (2020) pointed out that community resilience was negatively associated with depression and anxiety symptoms following intensive terror attacks. In addition, some scholars also claimed that, in general, resilient communities adapt to disasters more effectively and experience better outcomes (Pfefferbaum, Van Horn, & Pfefferbaum, 2015). Thus, community resilience might protect residents from anxiety during the COVID-19 pandemic.

Scholars have noted that research on community resilience should pay special attention to older adults (Cohen et al., 2016; Wiles, Wild, Kerse, & Allen, 2012). In China, residential communities provide various resources for older adults and are the primary places in which they participate in social activities (Lu, Lum, & Lou, 2016; Zhang, Yu, Zhang, & Zhou, 2017). Older adults care about their residential communities and become socially and actively involved in community affairs (Wiles & Jayasinha, 2013). Thus, communities are vital to older adults, and community resilience as an important community resource during a crisis may greatly affect older adults. For instance, Eshel, Kimhi, Lahad, and Leykin (2016) found that community resilience could promote older Israelis' self-efficacy and sense of coherence in the crisis. During the COVID-19 pandemic, communities have implemented some measures specifically aimed at older adults, such as assigning specific personnel to provide one-to-one personal services of convenience for older adults to help them return to daily life as soon as possible (Zhang & Yang, 2020), which may be conducive to older adults' healthy mental status. Therefore, we hypothesised that community resilience would be negatively associated with older adults' anxiety during the COVID-19 pandemic.

2.2 | Community resilience and anxiety: The role of trust in local government

During a crisis, the local government is the front-line administrative unit in dealing with the crisis, and in most cases, the local government faces, responds to, and copes with the crisis directly (Ma & Christensen, 2018). In the COVID-19 pandemic, Chinese local governments have conducted objective evaluations on rapidly changing local epidemics, formulated appropriate coping policies, and made reasonable adjustments based on the development of the pandemic within their jurisdiction; these plans and instructions have effectively suppressed the further deterioration of the pandemic (Gong et al., 2020).

When citizens perceive the local government's strong prevention measures during the COVID-19 pandemic, they consider the local government credible and trustworthy and generate trust in the local government (Ma & Christensen, 2018). Citizens' trust in local government is of vital importance in the context of a crisis. *Trust in local government* refers to citizens' trust in local bureaucracy based on their rational judgement, experience, and normative expectations (Li & Tan, 2018). The root of trust in local government lies within the government's capacity and performance; if citizens experience desirable policy outcomes and satisfaction with government services, they would trust the local government more (Fitzgerald & Wolak, 2014; Liang, 2015). Many previous studies have indicated that in the crisis, citizens' trust in local government could reduce the public's perceptions of risks associated with the crisis, and enhance their controllability of the crisis, to effectively protect their mental health (Cheung & Tse, 2008; Ma & Christensen, 2018; Seebauer & Babcicky, 2018; Tang et al., 2016).

During the COVID-19 pandemic, compared with other groups, older adults have fewer coping resources such as social support, economic resources, and the ability to self-regulate (Buenaventura et al., 2020), resulting in increased dependence on the local government to address the COVID-19 pandemic. Therefore, for older adults, the role of trust in local government on mental health may be more prominent.

Considering that community in China is designed as a basic administrative unit, residents' trust in local government may affect the role of community resilience in alleviating mental health problems. During a crisis, older adults with more trust in local government may have more affirmation and trust in the residential community, and at this time, community resilience as an important community capacity can play a more effective role in responding to the crisis. However, if older adults lack trust in local government, it most likely means that their trust in the community would be weakened, and the role of community resilience would be limited. According to the model of stress resistance and resilience (Norris et al., 2008), in this circumstance, the capacity and resources of the community cannot



FIGURE 1 The hypothesised effect of community resilience on anxiety: Moderated by trust in local government

function effectively, and the community may fall into persistent dysfunction, so that it would be difficult for the residents to recover their mental health. Therefore, we hypothesised that the association between community resilience and anxiety would be moderated by trust in local government, and this association would be weakened for older adults with low trust in local government.

2.3 | Hypothetical research model

In this study, we focused on the association between community resilience and anxiety during the COVID-19 pandemic, and further examined the moderating role of trust in local government in this association. We hypothesised the following (Figure 1):

- 1. Older adults' community resilience would be negatively associated with their anxiety.
- Older adults' trust in local government would moderate the association between community resilience and anxiety. Specifically, for older adults with low trust in local government, the association between community resilience and anxiety would be weaker.

3 | METHODS

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3.1 | Participants

We calculated the sample size in this study using G*Power 3.1.9.2 (Faul, Erdfelder, Lang, & Buchner, 2007), by choosing linear multiple regression and setting the significance level of .05, the effect size of .15 (medium effect size), and the statistical power level of 95%. The total sample size is estimated to be at least 119 (Beck, 2013). Thus, we surveyed 213 older adults in this study, and the sample size is appropriate. Among the participants, 49.3% of whom were female, and they had an average age of 70.56 ± 7.21 years (range: 60–96), with an average of 47.48 \pm 23.47 years (range: 1–89) of residence in their communities. The participants' sociodemographic information was displayed in Table 1.

3.2 | Procedure

We completed this research with the assistance of a social work institution that provides services to 12 communities in the Sichuan province of China. To facilitate the data collection, we selected these 12 communities to implement

TABLE 1 Sociodemographic information of the participants

Variable	Mean ± SD (range) / N (%)
Age	70.56 ± 7.21 (60-96)
Gender	
Male	108 (50.7%)
Female	105 (49.3%)
Marital status	
With a spouse	167 (78.4%)
Single (unmarried/divorced/widowed)	46 (21.6%)
Education	
Uneducated	51 (23.9%)
Primary education	118 (55.4%)
Secondary education or above	44 (20.7%)
Monthly income (RMB)	
<1,000	160 (75.1%)
1,000-2,000	37 (17.4%)
>2,000	16 (7.5%)
Number of children	
≤1	104 (48.9%)
>1	109 (51.1%)
Living arrangement	
Living alone	19 (8.9%)
Living with others	194 (91.1%)
Years of residence	47.48 ± 23.47 (1-89)

Note: Sample size, N = 213. SD = Standard deviation, 1USD = 7 RMB.

this research. All interviewers received professional training in conducting a questionnaire survey. We conducted the research from April 5 to 25 in 2020, when the stay-at-home orders in China had been lifted. To reduce gathering sizes, we did not recruit participants centrally but conducted a case-by-case survey of older adults through the interviewers' home visits. The participants gratuitously completed the survey at their doorsteps; this took about 20 min. Some participants (N = 29) were able to complete the questionnaire independently, and most (N = 184) with vision diseases and physical deficiencies answered questions orally through a question-and-answer procedure conducted by an interviewer. If participants encountered any difficulties during the survey, the interviewers provided effective assistance. This study obtained ethics approval from [redacted for blind review].

3.3 | Measures

Community resilience was evaluated with a 10-item version of the Conjoint Community Resiliency Assessment Measure (CCRAM-10; Leykin et al., 2013), which appears in the Data S1. We totaled the scores for all items, and higher scores indicated higher community resilience. This measure has been proved to have good psychometric properties in Chinese participants (Cui & Han, 2019). In this study, the α reliability for the CCRAM-10 was .97.

Trust in local government was assessed with three items (see the Data S1) adapted from the model of trust proposed by Mayer, Davis, and Schoorman (1995). We computed the three items' total scores, and higher scores

indicated more trust in local government. In this study, Cronbach's α coefficient for trust in local government was .93. An exploratory factor analysis indicated that the three items loaded on one dimension together explained 87.55% of the variance. The values of factor loadings ranged from .87 to .88. The correlation between each item and the total trust in local government score ranged from .81 to .82. These results showed that the measure of trust in local government in this study had good psychometric properties.

Anxiety was assessed using the seven-item anxiety subscale of the Depression Anxiety Stress Scales (DASS; Antony, Bieling, Cox, Enns, & Swinson, 1998), which appears in the Data S1. We added the scores of each item, and higher scores indicated a higher level of anxiety. Previous studies demonstrated that DASS had good cross-cultural validation and psychometric properties for investigating Chinese participants' mental health (Wang et al., 2016). In this study, the α reliability for the anxiety subscale was .83.

Control variables included age (years), gender (0 = female, 1 = male), marital status (0 = unmarried/divorced/widowed, 1 = with a spouse), education (uneducated, primary education, secondary education, tertiary education), monthly income (<1,000 RMB, 1,000–2,000 RMB, 2,001–3,000 RMB, 3,001–4,000 RMB, >4,000 RMB), number of children, living arrangements (0 = living alone, 1 = living with others), years of residence, self-reported physical health compared to peers (from 1 = unhealthier than peers to 5 = healthier than peers), and cognitive reappraisal.

3.4 | Statistical analysis

We computed Pearson correlations to determine the bivariate associations among the study variables (see Table 2). Next, we applied a regression analysis to test the association between community resilience, trust in local government, and anxiety, as shown in Table 3. First, we input all control variables into the regression model (Model 1). Second, we examined the main effect of community resilience on anxiety (Model 2). Finally, we entered trust in local government and the two-way interaction term into the regression model to investigate the moderated effects (Model 3). In the regression model, we used Z-scores for the study variables and reported standardised coefficients. In addition, we graphed the two-way interaction effect and presented the slopes of community resilience on anxiety at a high and low level of trust in local government in Figure 2. High and low values of moderators were defined as one standard deviation above and below the mean, respectively. We also presented the conditional effects at various values of the moderator (1 *SD* below the mean, the mean, and 1 *SD* above the mean) in Table 4. Moreover, we further probed the region of significance at continuous levels of the moderator using the Johnson-Neyman technique, and it was more precise than the common pick-a-point approach, which presented the effect at only three points (low, average, and high) of the moderator (Bauer & Curran, 2005). SPSS 22.0 was used for all analyses, and p < .05 was considered statistically significant.

4 | RESULTS

The bivariate correlations of the study variables were shown in Table 2. Community resilience was significantly associated with anxiety (r = -.47, p = .000). In the regression analysis, after including all covariates in the regression model, the main effect of community resilience on anxiety was significant (see Table 3, Model 2; $\beta = -.41$, p = .000). Therefore, Hypothesis 1 was supported.

Hypothesis 2 predicted that trust in local government would moderate the association between community resilience and anxiety. The two-way interaction of community resilience and trust in local government was significant in predicting anxiety (see Table 3, Model 3; $\beta = -.19$, p = .02). In the comparison between Model 2 and Model 3 in Table 3, the R-square change was significant ($\Delta R^2 = .05$, p = .02). To further interpret the results, we graphed the interaction effect in Figure 2. Compared with older adults with high trust in local government, the association between community resilience and anxiety was weaker for older adults with low trust in local government.

Variable	-	2	e	4	5	6	7	8	6	10	11	12	13
1. Community resilience	I	0.58	-0.47	-0.04	0.02	0.02	-0.10	-0.08	-0.14	-0.13	0.24	0.26	0.42
2. Trust in local government		I	-0.41	0.02	-0.01	-0.02	-0.07	-0.16^{*}	-0.14	-0.08	0.28	0.05	0.32
3. Anxiety			I	0.10	-0.03	-0.18^{*}	0.02	0.04	0.13	-0.05	-0.07	-0.20	-0.27
4. Age				I	-0.08	-0.38	-0.24	-0.09	0.50	-0.05	0.11	-0.22	-0.02
5. Gender					I	0.10	0.22	0.10	-0.06	-0.08	0.28	0.08	0.08
6. Marital status						I	0.32	0.22	-0.06	0.44	-0.07	0.12	0.08
7. Education							I	0.54	-0.08	0.20	-0.19	0.19	0.09
8. Monthly income								I	0.06	0.15	-0.40	0.12	0.13
9. Number of children									I	0.24	-0.14	-0.03	-0.01
10. Living arrangement										I	-0.17^{*}	0.05	-0.08
11. Years of residence											I	-0.16*	0.06
12. Physical health												I	0.10
13. Cognitive reappraisal													I

TABLE 2 Descriptive statistics and bivariate correlations of the study variables (N = 213)

p < .05, p < .01, p < .001.

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	Model 1	Model 2	Model 3
Age	-0.05	-0.04	-0.03
Gender	0.01	-0.03	-0.04
Marital status	-0.17*	-0.15	-0.17*
Education	0.10	0.04	0.05
Monthly income	0.05	0.08	0.06
Number of children	0.15	0.11	0.07
Living arrangement	-0.06	-0.07	-0.05
Years of residence	-0.04	0.07	0.08
Physical health	-0.19**	-0.07	-0.08
Cognitive reappraisal	-0.26***	-0.10	-0.07
Community resilience		-0.41***	-0.34***
Trust in local government			-0.32***
Community resilience \times trust in local government			-0.19*
R ²	0.16***	0.27***	0.32***

TABLE 3 The effects of community resilience and trust in local government on anxiety (N = 213)

Note: Standardised coefficients are presented. Age, gender, marital status, education, monthly income, number of children, living arrangement, years of residence, physical health, and cognitive reappraisal were controlled in all models.

^{*}p < .05, ^{**}p < .01,

****p < .001.





TABLE 4 The conditional effects of community resilience on anxiety at different values of trust in local government (N = 213)

Values of trust in local government	β [95% CI]
Low trust in local government	$-0.24 \ [-0.4059, \ -0.0679]$
Average trust in local government	-0.34 [-0.5038, -0.1775]
High trust in local government	$-0.42 \left[-0.6115, -0.2324 ight]$

Note: CI = Confidence intervals. Bootstrap = 5,000. Age, gender, marital status, education, monthly income, number of children, living arrangement, years of residence, physical health, and cognitive reappraisal were controlled.

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FIGURE 3 The conditional effect of community resilience on anxiety with bootstrap confidence intervals. *Note: Z*-scores for the variables are used. The horizontal dashed line denotes an effect of zero, and the vertical dashed line represents the boundary of the region of significance. Cl, confidence interval

Furthermore, to illustrate the presence of moderation, we reported the effect at various values of the moderator in Table 4 (1 *SD* below the mean, the mean, and 1 *SD* above the mean). For older adults with a high level of trust in local government, the effect of community resilience on anxiety was significant and largest ($\beta = -.42$, 95% CI [-0.6115, -0.2324]); for older adults with an average level of trust in local government, the effect was weakened ($\beta = -.34$, 95% CI [-0.5038, -0.1775]); whereas for older adults with a low level of trust in local government, the effect was smallest ($\beta = -.24$, 95% CI [-0.4059, -0.0679]). Moreover, the magnitude of the effect at continuous levels of trust in local government with a 95% confidence interval was graphically illustrated in Figure 3. The right side of the vertical dashed line represented the region of significant effect, and when the standard score of trust in local government was higher than -1.48, the effect of community resilience on anxiety was significant. Thus, Hypothesis 2 was verified.

5 | DISCUSSION

In this study, we found that older adults' community resilience was a protective factor that relieved their anxiety during the COVID-19 pandemic. Meanwhile, older adults' trust in local government moderated this association. For older adults with low trust in local government, the effect of community resilience and anxiety was weakened. These findings were consistent with the model of stress resistance and resilience (Norris et al., 2008), suggesting that we should address older adults' anxiety from the community and local government during the pandemic.

The study results indicated that community resilience was critical for relieving older adults' anxiety, which was in line with previous studies on crises (Braun-Lewensohn & Sagy, 2014; Kimhi et al., 2020). Communities with high resilience can satisfy their physical needs during the crisis, as well as lead, gather, and unite the community members (Obrist, Pfeiffer, & Henley, 2010). Older adults in resilient communities can rely on their communities to withstand disasters, so they experience less anxiety. Therefore, community managers should improve communities' disaster prevention and mitigation capabilities by improving objective infrastructure and the publicity of subjective disaster prevention awareness, thus continuously optimising the community emergency management system and

building resilient communities. In addition, considering that older adults are vulnerable to disasters (Meng et al., 2020), community resilience building should take into account the characteristics of older adults. For example, community workers could conduct household counselling for older adults regularly to promote their disaster prevention knowledge, and organise community volunteers to provide post-disaster one-on-one assistance to older adults to help them return to daily life as soon as possible.

We also found that the relieving effect of community resilience on the older adults' anxiety was weakened for older adults with low trust in local government. In China, communities as basic administrative organisations undertaking political functions (Yip et al., 2013), their utilisation of resources and performance of ability are affected by the residents' trust in local government in China. If older adults do not trust the local government, their trust and dependence on the community are likely to be limited. For such older adults, during the COVID-19, the role of community resilience is difficult to perform effectively, and the effect of community resilience on anxiety relief is weakened. This result emphasised the importance of trust in local government, and the local government must win the public's trust based on its excellent management capabilities and effective crisis prevention role. In addition, trust in local government is a long-term stable political attitude that cannot be formed in a short period (Li & Tan, 2018). Therefore, local governments should maintain smooth interactions with citizens in daily administration, continuously improve administrative capabilities, represent citizens' interests well, and keep trust in local government at a high level for a long time; in this way, citizens can trust the local government more easily during crises.

We must acknowledge some limitations of this study. First, a cross-sectional design in this study cannot infer the temporal ordering and causal association among study variables, which perhaps should be considered in future longitudinal or experimental studies. Second, because it is too difficult to conduct a strict probability sampling offline during the current pandemic, we used convenience sampling, which might have restricted the generalisability of our findings. Finally, the findings are based on a sample in the Sichuan province of China. Because the pandemic has spread throughout the country and the world, further examination could verify the findings for the entire nation of China or other countries.

In conclusion, Chinese older adults with high community resilience experienced less anxiety during the COVID-19 pandemic. In addition, low trust in local government weakened the relieving effect of community resilience on anxiety. Therefore, anxiety relief interventions should combine factors of community and local government comprehensively.

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CONFLICT OF INTEREST

The authors declare there is no conflict of interest.

DATA AVAILABILITY STATEMENT

The data used to support the findings of this study are available from the corresponding author upon request.

ORCID

Jinfeng Zhang b https://orcid.org/0000-0001-8131-552X Yan Wang b https://orcid.org/0000-0002-8676-5316

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of this article.

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