

The Relationship Between Fear of COVID-19 and Psychological Distress in Tour Guides: The Mediating Role of Job Insecurity and the Moderating Role of Psychological Resilience

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Purpose: The COVID-19 has greatly affected the tourism industry in China, leading to an increase in psychological distress among tour guides. This study explores the mechanisms by which tour guides' fear of the COVID-19 affects psychological distress, using job insecurity as a mediating variable and psychological resilience as a moderating variable.

Patients and Methods: From August 11 to 30, 2022, 447 Chinese tour guides were invited online to fill in a questionnaire, and SPSS and Mplus tools were used for statistical analysis and hypothesis testing to conduct an empirical analysis of the relationship between COVID-19 fear and psychological distress.

Results: A total of 417 questionnaires (effective rate was 93.3%) were collected, among which female ($n = 243$) and male ($n = 174$). The age concentration of participants was 46.5% between 26 and 35 years old, 9.1% under 25 years old, and 9.8% over 46 years old. Guides' fear of COVID-19 positively and significantly influenced psychological distress ($\beta = 0.3051$), and the relationship between fear of COVID-19 and psychological distress was mediated by job insecurity ($\beta = 0.196$, 95% CI = 0.141, 0.255). In addition, psychological resilience significantly moderated the pathway from fear of COVID-19 to job insecurity and from fear of COVID-19 to guided psychological distress ($\beta = 0.1371$; $\beta = 0.116$).

Conclusion: The diversion of fear of COVID-19 and job insecurity can alleviate the psychological distress of tour guides; strengthening their own psychological construction also helps to alleviate the effects of fear of COVID-19 on job insecurity and psychological distress. The findings of the study can provide theoretical support for the prevention and counseling of psychological problems of tourism employees in public health crises.

Keywords: fear of COVID-19, job insecurity, psychological distress, psychological resilience

Introduction

COVID-19, officially named "2019-nCoV" by the World Health Organization, is a type of coronavirus that has never been found in humans before, so human immunity to it tends to be zero, which is one of the reasons why it is fatal to humans.¹ WHO Director-General Tedros Adhanom Ghebreyesus reported in Switzerland (Geneva) that since the outbreak of COVID-19 in early 2020, the number of confirmed cases worldwide has reached hundreds of millions and the cumulative death toll has exceeded 20 million. COVID-19 has dealt a heavy blow to the tourism industry. In 2020, the number of domestic tourists was 2.879 billion person-times, a decrease of 3.022 billion person-times or 52.1% from the same period the previous year.² In 2021, the number of travel agency employees in China dropped from 416,000 in 2019 to 279,000, a sharp decline of about 33%.³

The guide is

A person with an effective combination of enthusiasm, knowledge, personality qualities and high standards of conduct and ethics who leads groups to the important sites, while providing interpretation and commentary.⁴

Tour guides are very typical front-line employees in the tourism industry, serving as an important link between destinations and tourists⁵ and are one of the groups most affected by COVID-19. Since early 2020, as a traumatic event, the COVID-19 pandemic has threatened people's lives, interfered with their social and professional abilities,⁶ and increased the fear of the tour guides, leading to unemployment concerns and emotional disorders.^{7,8} In the unknown market environment and difficult employment situation, nearly half of tourism professionals were mentally unbalanced or even on the verge of collapse,⁹ which in turn affected their work attitude,¹⁰ motivation¹¹ and work behaviors.¹² Research on the psychology of tour guides during the public health crisis can provide useful inspiration for the management of tour guides in the post-epidemic context.

The theory of resource conservation points out that both the actual and possible loss of resources will pose a threat to people, and individuals are more likely to experience tension and stress reactions.¹³ Fear of COVID-19 as a negative emotion,¹⁴ can be interpreted as a loss of resources caused by COVID-19 in individuals, resulting in a series of poor performance at work, including psychological distress, job insecurity, and other psychosomatic outcomes. Job insecurity is one of the most common workplace stressors, and for individuals, it can affect employees' performance and psychosomatic health,¹⁵ and even bring forth pressure response such as depression and psychological distress.¹³ Reports of increased psychological distress among the public as a result of the COVID-19 outbreak have been alarming,¹⁶ but few scholars have examined the effects of COVID-19 on psychological distress in tour guides. To fill this gap, the research aims to investigate whether fear of COVID-19 increases the probability of psychological distress in tour guides, and to reveal the intrinsic mechanism of fear of COVID-19 and psychological distress in tour guides.

According to COR theory, individuals will inject and increase certain resources in response to stressful situations to relieve tension and pressure.¹⁷ Tour guides can overcome psychological fears by increasing self-awareness and largely reduce the loss of resources resulted from the stress of job insecurity generated by the fear of COVID-19. In existing studies, it has been shown that resilience has a moderating effect on individual stress, such as resilience in post-traumatic growth,¹⁸ emotional behavior problems,¹⁹ and anxiety/depression.²⁰ This study explores the impact of COVID fear on tour guides' job insecurity and mental health during the pandemic, and the moderating role of resilience between COVID-19 fear and psychological distress. This is helpful to understand the impact of public health crisis events on the psychology of tour guides, and provide theoretical support for the prevention and counseling of psychological problems of tour guides.

The theoretical contribution of this study is twofold. On the one hand, there is a lack of research on tour guides in the existing articles on psychological distress. In the context of the COVID-19 epidemic, information spreads rapidly and widely, and the negative emotions of tour guides may have an impact on tourists' travel experience, which in turn can have a huge negative impact on the tourist destination, and even a fatal blow. Therefore, it is meaningful to explore the psychological distress of tour guides in the context of COVID-19. This article fills a gap in the research on mental health of tour guides. On the other hand, this study reveals a new mechanism of how COVID-19 fears affect tour guides' psychological distress; By doing so, this study contributes to a theoretical understanding of the psychological and behavioral characteristics of tour guides, enriching the research results on the mechanism of of tourist guide job insecurity, and helping the managers of tourist destinations to formulate policies in the face of public health crises.

Literature Review and Hypotheses Development

Fear of COVID-19 and Psychological Distress

According to COR theory, emotional exhaustion can arise in individuals when they perceive the threat of losing resources or experience an actual loss of resources, and are unable to replenish those resources after investing in them.¹⁷ Fear is one of the basic human emotions, it is a disturbing emotion that arises when a person encounters danger or imagines danger, and is thought to cause intense psychological distress.¹⁴ Psychological distress is a negative state which includes anxiety and depression.²¹ It has been demonstrated that fear has the potential to influence psychological distress,¹⁴ and in the medical field, patients' fear of disease progression can have a positive significant impact on patients' psychological

distress.²² In the context of illness, people become more fearful of COVID-19, and higher level of fear can cause intensified level of psychological distress.²³ Outbreak of COVID-19 pandemic disrupted basic activities of daily life and led to an acute and potential long-term effect on individuals' psychosomatic health, including psychological distress, anxiety, and depression.²⁴ In the general population, measures of COVID-19 prevention and control can have an impact on people's mental health problems.²⁵ Fear of COVID-19 and repetitive negative thinking indicate psychological distress during a pandemic,²⁶ as COVID-19 leads to limited social distance, with home quarantine order and isolation measures making life boring, and uncertainty about the future and interruption of daily life are likely to exacerbate people's psychological distress.²⁷ The impact on the tourism and hospitality industry is also inevitable, with the fear of COVID-19 having a profound effect on the mental health of employees (eg stress, anxiety, depression).¹⁶ Based on the above information, it appears that fear of COVID-19 in different populations may affect people's psychosomatic health. This study hypothesizes that fear of COVID-19 has a positive significant effect on psychological distress.

The Mediating Role of Job Insecurity

The COR theory states that employees are more vulnerable to the loss of resources when they are threatened by loss (eg, job insecurity) (eg, increased levels of psychological distress).¹⁷ Job insecurity is defined as a "sense of powerlessness" due to the potential threat to job continuity.²⁸ Referring to the available research, fear of COVID-19 reduces service staff's job participation through job insecurity,²⁹ and has a significant impact on employees' psychosomatic health.³⁰ Thus, it is reasonable to expect that job insecurity mediates the relationship between fear of COVID-19 and psychological distress in tour guides.

The instability and expanding job uncertainty caused by COVID-19 have made many employees change industries.¹⁶ Fear of COVID-19 can affect job satisfaction and job security,³¹ and the increased job insecurity caused by COVID-19 severely affects and exacerbates employees' turnover intention. Seen as "guardians" in the tourism industry, the respondents still considered searching for new job opportunities.³⁰ It has been suggested that job insecurity might depend on the severity of the threat³² that is, the higher the threat perceived, the higher the job insecurity. Whereas fear affects one's internal threat,³³ this study proposes that it is probable that the fear of COVID-19 may also have an impact on job insecurity in tour guides.

Job insecurity is one of the most common sources of job stress, and stressors are associated with increased psychological distress and emotional exhaustion as well as decreased dedication. Previous studies have also shown that job insecurity could have a positive significant effect on psychological distress, such as studies on nurses in China,³³ employees of government organizations³⁴ and university professors.³⁵ The impact of COVID-19 can cause some workplaces to close down and the consequent insecurity can also deepen employees' levels of psychological distress.³⁶ In summary, job insecurity is likely to be a key variable in the psychological distress caused by fear of COVID-19, and this study hypothesizes that job insecurity is a mediating variable in the effect of fear of COVID-19 on psychological distress.

The Moderating Role of Psychological Resilience

COR theory suggests that an individual's coping abilities can be enhanced by their personal resources, such as resilience, which can provide energy or safeguard against the maladaptive psychological states that may be triggered by a stressor.¹⁷ Psychological resilience refers to an individual's ability to thrive in the face of past or present adversity.³⁷ Psychological resilience is a protective mechanism that operates in the face of negative stresses, and it is always associated with mental health.³⁸ There is a link between high levels of individual mental resilience and reduced anxiety, distress, feelings of danger, depression, and anxiety.^{20,39} Research on individual mental resilience has demonstrated that it plays a mediating role in invasive rumination and post-traumatic growing,¹⁸ between social support and emotional-behavioral problem,¹⁹ or in stress, burnout, and anxiety/depression.²⁰ An employee's personal resources, such as resilience levels, may be a positive mechanism that helps employees combat stress and anxiety.⁴⁰ Mental resilience can buffer against the adverse effects of post-traumatic stress⁴¹ and fear of COVID-19 on mental health.⁴⁰ However, the concept of psychological resilience has been widely studied as a clinical treatment while rarely been applied to the investigation into public mental

health rehabilitation. To sum up, this study hypothesizes that psychological resilience moderates the fear of COVID-19 —job insecurity —psychological distress process and tests specific moderating pathways and methods.

In summary, the purpose of this study is threefold: firstly, it aims to investigate whether there's positive significant correlation between fear of COVID-19 and psychological distress among tour guides (Hypothesis 1). Secondly, it investigates whether the relationship between guides' fear of COVID-19 and psychological distress is mediated by job insecurity (Hypothesis 2). Thirdly, it investigates whether the direct and indirect relationships between guides' fear of COVID-19 and psychological distress will be moderated by psychological resilience (Hypothesis 3). The proposed mediating model of regulation is shown below in Figure 1.

Materials and Methods

Participants

In the valid sample for this study, more than 58.3% of participants were women ($n = 243$) and 41.7% were men ($n = 174$). The largest proportion of participants was concentrated between 26 and 35 years of age at 46.5%, with 9.1% under 25 years of age and 9.8% over 46 years of age. The majority of participants (65.9%) were married, compared to 30.5% who were unmarried. Approximately 45.3% of participants had a college degree and 42.2% had a bachelor's degree or higher. The majority of participants (40.7%) reported working as a tour guide for 3 to 10 years, while 37.4% had been in the position for more than 10 years. 26.4% of participants reported an average monthly income of less than ¥3000, 25.9% earned between ¥5001 and ¥8000, 7.9% reported between ¥8001 and ¥10,000, and 6.7% earned more than 10,001.

Measures

For this study, the original scales were translated according to the recommendations of the International Test Commission (ITC). A forward-backward translation method was used to adapt the fear of COVID-19, Job Insecurity, Psychological Resilience and Psychological Distress scales into Chinese. Two independent translators translated the four scales into Chinese (forward translation). In the back-translation process, both versions were translated into English by a professional translator with experience in psychological research and a bilingual neuropsychology professor (who was blind to the original versions of the 4 scales). A panel of three experts suggested changes and approved the final version. It consisted of the more reliable and valid existing multi-item scales and demographic characteristics commonly used in surveys (eg gender, age, education, years of work, etc.). Participants used a 5-point Likert scale (1 = “strongly disagree”, 5 = “strongly agree”) to indicate their level of agreement with the stated fear of COVID-19, job insecurity, psychological resilience, and psychological distress.

Fear of COVID-19

A seven-question questionnaire on fear of COVID-19, developed by Akhtar⁴² was used to assess personal fears of COVID-19 (“My heart beats faster when I think about the possibility of contracting the COVID-19”, “I cannot sleep because I am worried about contracting the COVID-19”, “I get nervous or anxious when I watch news and events about

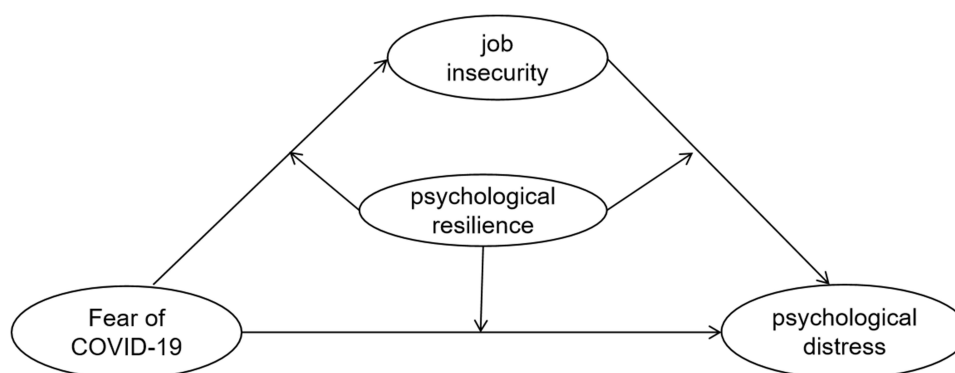


Figure 1 Hypotheses model.

the COVID-19 on social media”, “I am afraid of losing my life because of the COVID-19”, “My hands get wet and cold when I think about the COVID-19”, “I am most afraid of the COVID-19” and “I feel sick when I think about the COVID-19”). A 5-point Likert scale (1 = “strongly disagree”, 5 = “strongly agree”) was used, with higher scores indicating a higher level of fear of COVID-19. Coefficient was 0.929. The fitting index of confirmatory factor analysis of the scale: $\chi^2/df = 2.202$, GFI = 0.994, AGFI = 0.959, IFI = 0.998, TLI = 0.989, CFI = 0.998, RMSEA = 0.054, indicating that the scale has good reliability and validity.

Job Insecurity

The job insecurity questionnaire developed by Darvishmotevali⁴³ was used (“I am worried that I may be fired”, “I am worried about the continuation of my tour guide career”, “I am worried that I may lose my job”, “I am uncertain about the future of my tour guide job”) with four questions. A 5-point Likert scale (1 = “strongly disagree”, 5 = “strongly agree”) was used, with higher scores representing higher levels of job insecurity for the subjects, and the Cronbach’s alpha coefficient for the job insecurity scale in this study was 0.902. The fitting index of confirmatory factor analysis of the scale: $\chi^2/df = 0.586$, GFI = 0.999, AGFI = 0.993, IFI = 1.00, TLI = 1.002, CFI = 1.00, RMSEA = 0.00, indicating that the scale has good reliability and validity.

Psychological Distress

The psychological distress questionnaire developed by Shea⁴⁴ was used (“I do not have any positive feelings because of the presence of the COVID-19”, “I am depressed because I am afraid of the presence of the COVID-19”, “In the presence of the COVID-19, it makes me unenthusiastic about anything”, “It is difficult for me to increase my work initiative because of the presence of the COVID-19”, “In the presence of the COVID-19, it is difficult for me to realize my personal values” and “The presence of the COVID-19 makes me feel that life is meaningless”) with six questions. A 5-point Likert scale (1 = “strongly disagree”, 5 = “strongly agree”) was used, with higher scores representing higher levels of psychological distress. The Cronbach’s α coefficient for the psychological distress scale in this study was 0.948. The fitting index of confirmatory factor analysis of the scale: $\chi^2/df = 1.278$, GFI = 0.998, AGFI = 0.978, IFI = 1.00, TLI = 0.998, CFI = 1.00, RMSEA = 0.026, indicating that the scale has good reliability and validity.

Psychological Resilience

Using the psychological resilience questionnaire developed by Stein⁴⁵ (“I can adapt to changes in my surroundings”, “I can quickly calm unpleasant or painful feelings of sadness, fear, and anger”, “I can be strong face challenges and difficulties in life”, “I do not get discouraged in the face of failure”, “I can remain focused and think clearly in the face of stress”, “No obstacle can stop me from achieving my goals”, “I will recover quickly after experiencing illness, injury or other difficulties”, “The more stressful it is, the stronger I will be”, “When I face problems I try to see the good side of things” and “I can handle anything”). A 5-point Likert scale (1 = “strongly disagree”, 5 = “strongly agree”) was used, with higher scores indicating a higher degree of psychological resilience of the subjects. The Cronbach’s alpha coefficient for the psychological resilience scale in this study was 0.957. The fitting index of confirmatory factor analysis of the scale: $\chi^2/df = 1.276$, GFI = 0.988, AGFI = 0.967, IFI = 0.999, TLI = 0.997, CFI = 0.999, RMSEA = 0.026, indicating that the scale has good reliability and validity.

Control Variables

Consistent with previous studies, in addition to selecting gender, age, education, and years of work as control variables,⁴⁶ we selected marriage and monthly income as other control variables.

Procedures

The research has been reviewed by the Academic Committee of the School of Tourism and Landscape Architecture of Guilin University of Technology. During the research, participants were informed of the research contents at the beginning of the questionnaire, then the contents were verbally restated, and participants agreed to and completed the questionnaire after being told about the confidentiality of the research. As this study deals with the psychological distress of tour guides, it was difficult to contact the certified tour guides through a random sample and in order to minimise

unnecessary human contact. Therefore, we contacted the members of the TOUR NEW CONCEPT CON to help survey tour guides on online platforms (WeChat, QQ, etc.) through convenient sampling social networks. TOUR NEW CONCEPT CON is a consortium of 31 travel agencies in China and enjoys high popularity at home and abroad. The data was collected from 2022.8.11 to 2022.8.30, and the whole process was distributed to each tour guide in the form of an electronic questionnaire to fill in. Generally, in order to ensure the scientific rationality of structural equation model analysis, the total number of the sample size is at least 10 times of measured indicators.⁴⁷ This study used 17 measures to reflect 3 relevant latent variables. A total of 447 questionnaires were collected, among which 417 were valid after excluding those taking anti-anxiety drugs and those with disabilities. The effective rate of the questionnaires was 93.3%, which met the sample size requirement.

Analytic Strategy

Model fitting and validated factor analysis (CFA) were conducted using Amos 24.0 software to validate the validity and reliability of the structural models and scales used; descriptive statistics and correlation analysis were conducted using SPSS 26.0 software; and 95% confidence intervals for the mediating effects were estimated using a bias-corrected percentile Bootstrap method for a sample of 5000. In addition, this study used PROCESS 3.5 to validate the moderating effect of psychological resilience.

Results

Common Method Deviation Test

As the questionnaire method was used in this study, data were obtained from subjects' self-reports, which may lead to common method bias effects. Therefore, a common method bias test was conducted using the Harman one-way test. The exploratory factor analysis of all items revealed a first factor of 33.84% for the total variance, which is less than the 40% threshold. Therefore there was no significant common method bias for the variables in this study. Exploratory factor analysis based on the collected data shows that the values of each item are greater than 0.7. The factor analysis of this study shows that it still has good structural validity: the cumulative contribution rate of the common factor is above 70%, and the load value is above 0.4, and there is no double load phenomenon.

Descriptive Analyses and Bivariate Analyses

Descriptive statistics and correlation analyses were conducted on participants' fear of COVID-19, job insecurity, psychological distress and psychological resilience. The mean values and correlation coefficients for each variable are shown in Table 1. The results show that fear of COVID-19 was positively correlated with job insecurity ($r=0.375$, $P<0.01$) and psychological distress ($r=0.453$, $P<0.01$). Job insecurity was positively correlated with psychological distress ($r=0.620$, $P<0.01$).

Table 1 Descriptive Statistical Analysis

	Fear of COVID-19	Job Insecurity	Psychological Distress	Psychological Resilience	M	SD
Fear of COVID-19	0.805				2.722	0.983
Job insecurity	0.375**	0.840			3.562	0.976
Psychological distress	0.453**	0.620**	0.859		3.000	1.071
Psychological resilience	-0.044	-0.082	-0.201**	0.834	3.776	0.668

Notes: ** $p < 0.01$. The values in bold are the square root of the AVEs. Values below the diagonal are the correlations.

Abbreviations: M, Mean; SD, Standard Deviation.

Testing for the Mediation Effect

In this study, the analysis program of Bias-corrected Bootstrapping (5000 times) was used to verify the significance of the mediating effect of job insecurity between COVID fear and psychological distress. Analyses indicated that the model's goodness-of-fit values were within an acceptable range [CMID=260.382, DF=99, CMID/DF=2.63<3, GFI=0.936>0.9, AGFI=0.901>0.9, CFI=0.974>0.9, TLI=0.965>0.9, SRMR=0.039<0.08, RMSEA=0.063<0.08]. By examining the direct effects in the hypothesized model, it was found that guides' fear of COVID-19 predicted job insecurity ($\beta = 0.355$, $P < 0.001$) and severity of psychological distress ($\beta = 0.272$, $P < 0.001$), that is, hypothesis 1 was true (Table 2). The results of the analysis showed that the indirect effect of the guide's Fear of COVID-19 through job insecurity to psychological distress had a value of 0.196 with a 95% confidence interval of [0.141, 0.255], not including 0 and $P < 0.01$, indicating that the indirect effect of fear of COVID-19 on psychological distress reached a significant level, that is, hypothesis 2 was true (Table 2).

Testing for the Moderated Mediation Effect

We used model 59 in PROCESS to analyse whether psychological resilience moderates the direct and indirect pathways between fear of the COVID-19 and psychological distress in the guides. All covariates were included in the model as control variables. As shown in Table 3, fear of the COVID-19 had a positive and significant effect on both job insecurity

Table 2 Description of Hypothetical Results

Assume	The Model Path	Result
Hypothesis 1	Fear of COVID-19→psychological distress	Yes
Hypothesis 2	Fear of COVID-19→job insecurity→psychological distress	Yes
Hypothesis 3	Fear of COVID-19 x psychological resilience ^a →psychological distress	Yes
	Fear of COVID-19 x psychological resilience ^a →job insecurity	Yes
	Job insecurity x psychological resilience ^b →psychological distress	No

Notes: ^aInteraction term of fear of COVID-19 and psychological resilience. ^bInteraction term of job insecurity and psychological resilience.

Table 3 Test of Regulatory Effects

	M1 (Job Insecurity)			M2 (Psychological Distress)		
	Coeff	Se	p-value	Coeff	Se	p-value
Constant	-0.2550	0.3360	0.4484	3.4397***	0.2933	0.0000
Fear of COVID-19	0.3728***	0.0463	0.0000	0.3051***	0.0434	0.0000
Job insecurity				0.5266***	0.0431	0.0000
Psychological resilience	-0.0584	0.0662	0.3781	-0.2166***	0.0580	0.0002
Fear of COVID-19 psychological resilience*	0.1371	0.0548	0.0128	0.1160*	0.0504	0.0218
Job insecurity psychological resilience*				-0.0831	0.0512	0.1050
Sex	-0.1167	0.0927	0.2086	-0.3623***	0.0806	0.0000
Age	-0.0162	0.0687	0.8140	-0.0197	0.0595	0.7403
Marriage	0.0420	0.0985	0.6701	0.0567	0.0854	0.5068
Education	0.0728*	0.0421	0.0848	0.0291	0.0367	0.4279
Age limit	0.0920*	0.0446	0.0396	0.0616	0.0392	0.1164

(Continued)

Table 3 (Continued).

	M1 (Job Insecurity)			M2 (Psychological Distress)		
	Coeff	Se	p-value	Coeff	Se	p-value
Income	-0.1332*	0.0403	0.0010	-0.0832*	0.0354	0.0194
R	0.4456			0.7091		
R ²	0.1986			0.5028		
F	10.0593***			34.0452***		

Note: * $p < 0.05$, *** $p < 0.001$.

(M1, $\beta = 0.3728$, $P = 0.001$) and psychological distress (M2, $\beta = 0.3051$, $P < 0.001$), and job insecurity had a positive and significant effect on psychological distress (M2, $\beta = 0.5266$, $P < 0.001$). The interaction item “fear of COVID-19*psychological flexibility” had a positive significant effect on either job insecurity and psychological distress ($\beta = 0.1371$, $P < 0.05$; $\beta = 0.116$, $P < 0.05$), suggesting that psychological flexibility significantly moderated the effect of fear of COVID-19 on job insecurity and psychological distress; the interaction item “job insecurity*psychological flexibility” did not have a positive significant effect on psychological distress ($\beta = -0.0831$, $P > 0.05$), suggesting that psychological flexibility did not moderate the effect of job insecurity on psychological distress, that is, hypothesis 3 parts are true (Table 2).

To illustrate the possibility that psychological resilience significantly moderates the effect of perceived fear of COVID-19 on psychological distress or job insecurity, there is a standard deviation (SD) below and above the mean, indicating lower and higher levels respectively. The simple slope test (Figure 2) shows that perceived fear of COVID-19 may significantly reduce the psychological distress of tour guides at higher levels of psychological resilience, that is, psychological resilience weakens the positive association between fear of COVID-19 and mental health problems; A simple slope test (Figure 3) suggests that fear of COVID may significantly reduce perceived job insecurity and thus improve job security at higher levels of psychological resilience of tour guides, psychological resilience weakens the positive association between fear of COVID-19 and job insecurity issues.

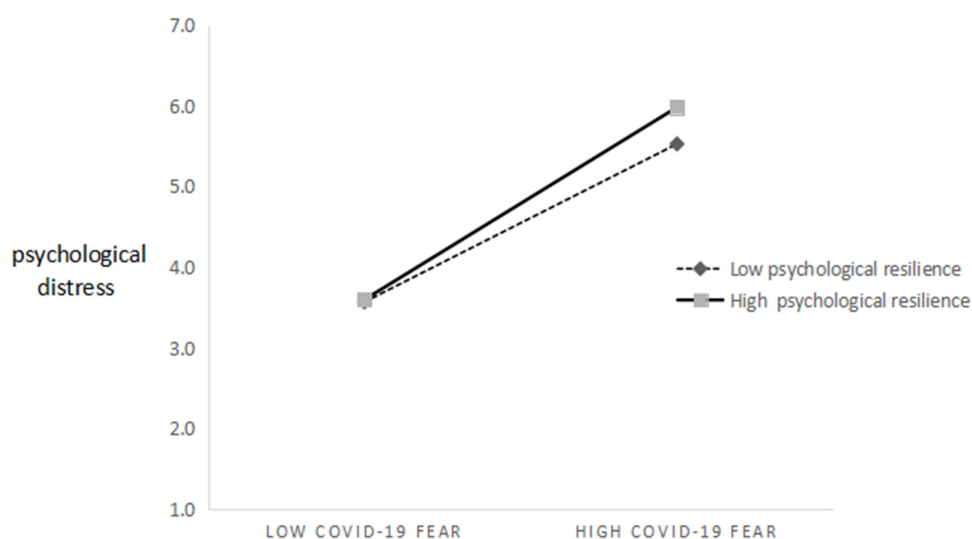


Figure 2 Resilience slows the positive relationship between COVID-19 fear and psychological distress.

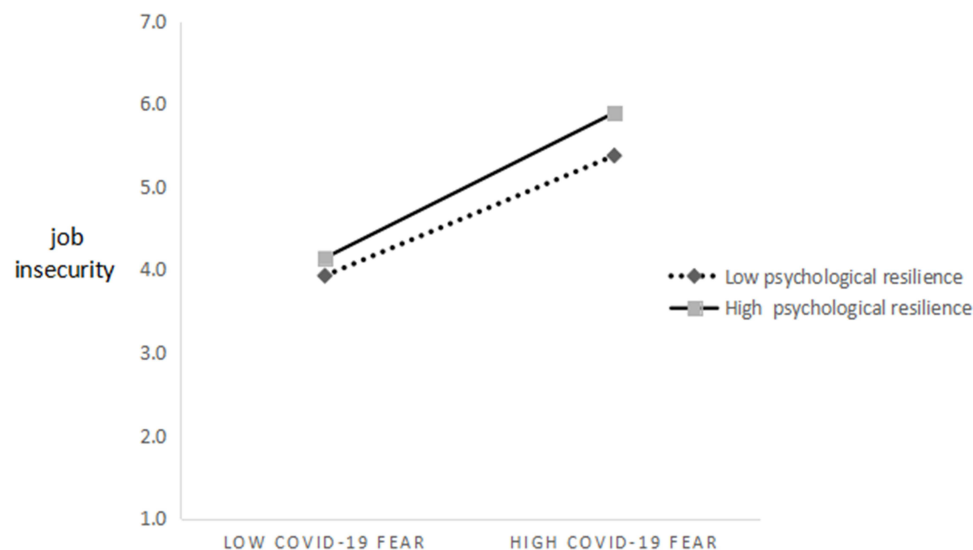


Figure 3 Resilience slows the positive relationship between COVID-19 fear and job insecurity.

Discussion

Despite the large body of literature studying psychological distress, there is still a lack of literature studying psychological distress from the perspective of tour guide groups, and even fewer studies have investigated the impact of fear of COVID-19 on tour guides' psychological distress and the mediating and moderating mechanisms behind its correlation. To address these gaps, this study investigated the relationship between fear of COVID-19 and psychological distress among tour guides in the tourism industry of China. More importantly, this study developed a mediated model with moderation to elucidate the mechanisms behind this hypothetical correlation. Firstly, our findings suggest that background and individual factors influencing guides' psychological distress may not be independent, but rather correlated. The study found support hypothesis 1, which proves that fear of COVID-19 significantly and positively predicted guides' psychological distress, which is consistent with the findings of Khudaykulov scholars¹⁴ that there is a profound impact on employees' psychosomatic health (eg stress, anxiety, depression).²³ It suggests that individual resource loss can be accompanied by tension and stress reactions.³⁷ Thus as a manifestation of resource loss, fear of COVID-19 can lead to more negative stress responses (eg psychological distress) developed in tour guides.

Secondly, the study found support hypothesis 2, which confirmed the mediating role of tour guides' job insecurity between fear of COVID-19 and their psychological distress. In addition to the overall mediating results, each of the hypothetical paths in the mediated model is noteworthy. On the one hand, tour guides more fearful of the COVID-19 are more likely to feel job insecurity, which is consistent with findings from other available literature on nurses,³³ employees of government organizations,³⁴ and university professors.³⁵ Job insecurity depends on the severity of the threat.³² That is, the higher the threat perceived, the higher the job insecurity. And fear affects the person's internal threat.³³ On the other hand, guides with high level of job insecurity are more likely to develop psychological distress. Job insecurity can cause significant psychological damage to employees, which may be detrimental to their physical and mental development.^{15,19} In addition, a sense of lacking control in the face of working conditions can cause a state of anxiety.³⁶ Uncertainty about work reduces individual performance and confidence. As jobs become less secure, psychological stress becomes more prominent. So with the fear of facing a COVID-19, job insecurity can exacerbate tour guides' psychological stress, which in turn reduces their psychosomatic health and causes psychological distress, affecting their daily work.

Finally, the results also partially support hypothesis 3, suggesting that psychological resilience moderates the relationship between fear of COVID-19 and job insecurity, and the relationship between fear of COVID-19 and psychological distress. Specifically, the positive effect of fear of COVID-19 on job insecurity is much weaker for tour guides with high psychological resilience. Psychological resilience is an important psychological resource for tour guides, and the psychological resilience can serve as a positive moderator of the guides' internal distress and job

insecurity perceptions under COVID-19.²⁰ That is, compared with tour guides with low psychological resilience, the guides with high psychological resilience have been less affected by the fear of COVID-19 and consequent job insecurity or psychological distress.

Theoretical Contribution

The current study makes several important contributions to the existing literature. On the one hand, this study is among the few that examine the mental health of frontline employees, more specifically tour guides, during a crisis. This study responds to calls for further studies on the impact of COVID-19 on the mental health of frontline employees.⁴⁰ Due to the infectious volatility of COVID-19, guides are at a higher risk of contracting COVID-19 and are more likely to have mental health issues.⁵ To our knowledge, there was no prior research analyzing the mechanism effect between tour guides' working status and psychological status in the context of COVID-19. At present, this theory mainly focuses on the study of tour guide's job satisfaction⁴⁸ and sustainable performance,⁴⁹ but neglects the study of tour guide's negative mental state. This study attempted to fill this gap. Furthermore, the study applied COR theory¹⁷ to emphasize the buffering effect of psychological resilience in the positive relationship between fear of COVID-19 and psychological distress, further deepening our understanding of the significance of employee resilience in crisis situations. The empirical results have enriched the literature research on the psychological distress of tour guides in China, and provided a new perspective for further understanding the mental health of tour guides under the COVID-19 pandemic.

On the other hand, our results can help to explain why some authors' argue that natural disasters can change the effect of job insecurity on mental health. Previous studies mainly focused on the relationship between job insecurity and psychological distress among nurses,³³ government organization employees³⁴ and university professors³⁵ in China, but did not study the relationship between job insecurity and psychological distress among tour guides. An understanding of the psychological factors that moderate the negative effects of stress and anxiety in the context of COVID-19 is critical to developing effective interventions and prevention measures for stress, depression and mental health-related issues in the face of public health crises. In this research, the psychological condition of tour guides is studied from the background of tour guides' perception of work insecurity, which is helpful to help tour guides better cope with difficulties and challenges in work, reduce possible work mistakes and conflicts, and improve service quality and customer satisfaction. It has enriched the research results on the mechanism of tourist guide job insecurity, changed the previous research model of tourist guide, and contributed Chinese cases to the world to solve the problem of tourist guide psychological distress.

Management Enlightenment

This study delivers practical implications and useful guidance for destination management. Firstly, for local governments and policy makers, some policy measures should be adopted, such as reducing taxes and fees for tourism enterprises, giving financial subsidies, and guiding tourism consumption, etc., to help tourism enterprises tide over difficulties. Provide real-time epidemic information to tourism enterprises, publicize the government's epidemic prevention measures and tourism safety tips, organize professional training and guidance, improve tourism enterprises' tourism safety awareness and skills, and enable tourism enterprises to objectively understand the scientific and necessary nature of epidemic prevention and control.

Secondly, for tourism companies, in the context of the normalization of the fear of COVID-19, it is necessary to find effective measures that can reduce job insecurity to ensure the enthusiasm of tour guides in their work. Managers should promote sustainable living systems for tour guides to mitigate the negative impact of job insecurity on tour guides. Tourism enterprises can provide tour guides with sufficient protective materials and safe working conditions to ensure the personal safety protection of tour guides; Strengthen vocational skills training to improve self-protection capacity in response to the epidemic; Strengthen psychological care for tour guides and reduce their anxiety and psychological burden.

Finally, for individual tour guides, overcoming the psychological distress caused by the epidemic can promote their own survival and development ability by increasing their own psychological resilience. Tour guides should strengthen their own psychological construction, receive publicity and training on epidemic prevention and control, mental health, etc., fully understand the knowledge of the new crown epidemic, and increase their confidence and ability to fight the

epidemic. Tour guides should maintain a positive attitude, actively participate in the team building activities organized and carried out, take the initiative to learn new skills, and enrich their lives. Guides can seek the support of professional counselors for psychological counseling and counseling to alleviate psychological distress caused by COVID-19 and promote the formation of a positive attitude.

Limitations and Future Research

Applying resource conservation (COR) theory, this study revealed the impact of guides' fear of COVID-19 on job insecurity and psychological distress; it also confirmed that psychological resilience could moderate the impact of fear of COVID-19 on job insecurity or psychological distress. There are three main limitations in our study need to be noted for future research.

Firstly, this paper only studied a group of Chinese tour guides. In future research, it is necessary to verify the explanatory power of the model in different cultural contexts.

Secondly, the investigation time of this paper is in the post-epidemic era, the study only used a cross-sectional design with a short time span, which is non-time series data. Whereas the fear of the virus among tour guides may vary at different stages in the development of the epidemic, it is necessary to carry out a diachronic follow-up to test the robustness of the model in future studies. Finally, because the mature scale adopted in this paper has not been pre-investigated, potential problems in the questionnaire may not be discovered. Similar future studies are necessary to conduct pre-investigations to verify the applicability of the selected scale and to understand potential data limitations and biases.

Conclusion

Generally speaking, our research shows that fear of COVID-19 will increase the psychological distress of tour guides. There is another important step in the relationship between fear of COVID-19 and psychological distress of tour guides, that is, the mediating role of job insecurity. Job insecurity is a potential mechanism related to fear of COVID-19 and psychological distress among tour guides. Especially for tour guides with high psychological resilience, the negative impact of fear of COVID-19 on tour guides' job insecurity and psychological distress has been reduced. The main contribution of this study is that we show that job insecurity does not necessarily reflect only the stability of a particular society during a health crisis, but can reflect someone's ability to be psychologically resilient. Therefore, the results presented may not be limited to Chinese tour guides, but should be further explored in countries with different socio-economic conditions.

The role of perceived job insecurity, fear of COVID-19 and psychological resilience can be used as a standpoint to build resilience in the work environment, and it leaves room for practitioners to develop plans that increase psychological resilience to uncertainty but also provide better guidelines for managing stress. Uncertainty and fear are inevitable in times of crisis and change, so we can work to develop the capacity of individuals to cope with crises. By paying attention to employees' fear of COVID-19, it can provide practical enlightenment for tourism enterprises to reduce the job insecurity of tour guides and reduce the psychological distress of tour guides. Specifically, tourism enterprises need to pay attention to the management of internal and external emotional expression of employees, which needs to do a good job in epidemic prevention and control, guide employees to use in-depth action strategies, and provide sincere services to customers.

Ethical Approval

The study is in accordance with the Declaration of Helsinki, and this research was approved by the Academic Committee of the School of Tourism and Landscape Architecture of Guilin University of Technology.

Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically

reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

The authors report no conflicts of interest in this work.

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