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An Online Survey on the Relationship Between Positive Coping and Post-Traumatic Stress Symptoms (PTSS) of Medical Students in China During the COVID-19 Pandemic: The Mediating Role of Social Support

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Background: The COVID-19 pandemic has caused varying degrees of psychological stress among medical students. This research explored the post-traumatic stress symptoms (PTSS) of medical students in China and their relationship with positive coping and social support.

Material/Methods: In the form of cross-sectional online survey, 2280 medical students locked down at home were selected by random cluster method to investigate social support, coping style, and PTSS using the Social Support Rating Scale (SSRS), Simplified Coping Style Questionnaire (SCSQ), and Post-traumatic Stress Disorder (PTSD) Checklist-Civilian Version (PCL-C), respectively.

Results: This research found that the PTSS detection rate in medical students was 10.42% during the COVID-19 pandemic. The PTSS scores of females were significantly higher than that of the males. However, the PTSS detection rate in females (9.71%) was not significantly different from that in males (11.24%). Compared with those of the non-PTSS group, the total score and its all-factor score of social support, the total score of coping style and the positive coping score of the PTSS group were much lower, while the negative coping score of the PTSS group was much higher ($P<0.01$). Positive coping was positively correlated with social support, while positive coping and social support were negatively correlated with PTSS. The total effect of positive coping on PTSS was -0.310 ($P<0.001$), the direct effect was -0.128 ($P<0.01$), and the indirect effect was -0.182 ($P<0.001$). Social support played a mediating role between positive coping and PTSS, with the mediating effect accounting for 58.81% of the total effect.

Conclusions: Social support plays a mediating role between positive coping and post-traumatic stress symptoms. Objective support and positive coping are the 2 main protective factors of PTSS.

Keywords: COVID-19 • Coping Style • Social Support • Post-Traumatic Stress Symptoms • Medical Students

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Background

The novel coronavirus disease 2019 (COVID-19) has the characteristics of strong infectivity, sudden onset, and rapid progression [1,2]. Along with the increased number of new patients and lockdown at home, from front-line healthcare workers to the general public, many people were under varying degrees of psychological stress [3]. Relatively high rates of symptoms of anxiety (6.33% to 50.9%), depression (14.6% to 48.3%), post-traumatic stress disorder (7% to 53.8%), psychological distress (34.43% to 38%), and stress (8.1% to 81.9%) have been reported in the general population during the COVID-19 pandemic [4]. Compared with the general population, healthcare workers have a higher risk of psychological problems during the COVID-19 pandemic [5].

In addition to healthcare workers, college students, as another vulnerable group, are prone to mental health problems during the COVID-19 pandemic [6]. College students are in the transition phase from adolescence to adulthood, and their physical and mental development is still immature. A study shows that the incidences of anxiety, depression, and stressful negative moods among college students have been as high as 65.5%, 35.5%, and 10.95%, respectively, during the COVID-19 pandemic [7]. At the beginning of the pandemic, due to the lack of awareness of COVID-19, repeated media exposure to the COVID-19 pandemic may have improved the stress response of people [8]. Medical students, as prospective doctors with relevant professional backgrounds, have a higher awareness of epidemic information and more objectively interpret reports on COVID-19. During the COVID-19 pandemic, the levels of anxiety, depression, and stress of medical students were much lower than those of non-medical students in our previous research [9].

Exposure to the COVID-19 pandemic results in psychological trauma, which can lead to post-traumatic stress disorder (PTSD) in severe cases [10]. Meta-analysis shows that the prevalence rate of PTSD in severe COVID-19 patients is 16% [11], which was up to 21.5% among healthcare workers during the COVID-19 pandemic [12]. With improved awareness of the COVID-19 pandemic, the symptoms of anxiety, depression, fear, and other symptoms caused by the COVID-19 pandemic will gradually disappear, but post-traumatic stress disorder will continue for a long time [13]. A study showed that the cumulative proportion of patients with PTSD is 47.8% after the outbreak of severe acute respiratory syndrome (SARS), while 25.5% of patients still had PTSD 30 months after the SARS epidemic[14]. PTSD is a chronic mental illness with poor clinical treatment effects, which seriously affects mental health [15]. To improve people's mental health and prevent PTSD caused by COVID-19, it is necessary to study the development and mechanism of PTSD.

In the field of stress research, it is generally believed that social support has the role of reducing stress and is the individual's "available external resources" in the process of stress [16]. Social support can effectively reduce or alleviate stress intensity and protect individuals from the damage caused by COVID-19 [17]. Coping strategies and social support are 2 important factors that have affected mental health during the COVID-19 pandemic [18,19]. A study indicated that family support and coping strategies are closely related to mental health. Coping strategies play a mediating role between family support and mental health during the COVID-19 pandemic [20]. Research on patients with cured COVID-19 showed that emotional support was a protective factor against PTSD [21]. There are few research reports on the relationship between social support, coping style, and PTSS during the COVID-19 pandemic. According to current research, it is assumed that coping style, social support, and PTSS are related to each other, while social support plays a mediating role between coping style and PTSS.

During the COVID-19 pandemic, college students were isolated from each other and were on lockdown at home, and their psychological problems became more and more prominent [22]. To deal with the impact of COVID-19 on mental health, psychological rescue hotlines have been set up all over the world to actively carry out psychological rescue work. This current research sought to investigate the rate of PTSS in medical students during the COVID-19 pandemic. It also aimed to analyze the relationship among coping style, social support, and PTSS. The final purpose of this current research was to verify the mediating role of social support between coping style and PTSS to provide scientific methods to prevent PTSS.

Material and Methods

Ethics Considerations

This study was conducted anonymously. Informed consent was obtained before the study. The study received the approval from the Medical Research Ethics Committee of Bengbu Medical College (approval number 2022-2350).

Study Design and Population

A meta-analysis of mental problems in medical students during the COVID-19 pandemic reported that the prevalence of PTSD was 34% [23]. According to the sample size estimation formula $N=t^2(1-p)P/d^2$(p=0.34,d=0.1p,t=1.96), this study required at least 746 subjects with a 10% of margin error and 95% confidence interval. Using random cluster sampling, we selected 2280 medical students in lockdown at home. The following scales of were compiled into an electronic questionnaire

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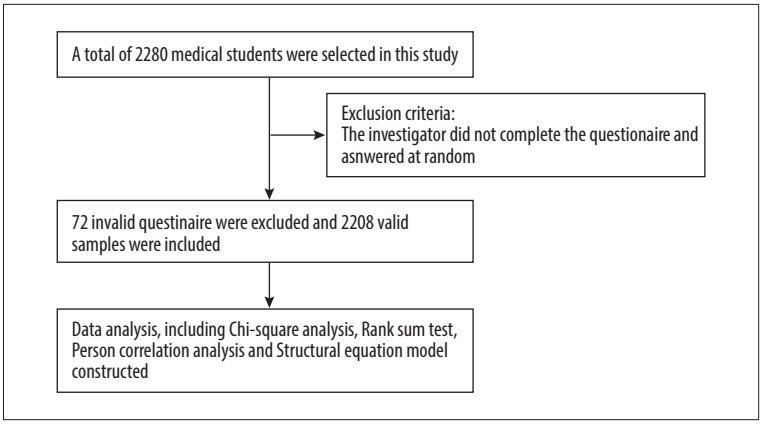

Figure 1. Flowchart of the sample recruitment.

Table 1. The characteristics of the samples (n=2208).

		Respondents	
		N	%
Sex	Male	801	36.28
	Female	1441	63.72
Education level	Undergraduate	1969	89.18
	Graduate student	239	10.82
Only child	Yes	601	27.22
	No	1607	72.78
Native place	Rural	1571	71.15
	Urban	637	28.85
Age(years)	17-20 years	1065	48.23
	21-38 years	1143	51.77

powered by www.wjx.cn. The questionnaire had 52 items, including self-compiled demographic questionnaire, SSRS, SCSQ, and PCL-C. The pre-test of the questionnaire was conducted before the research. The items of the questionnaire met the survey needs. It would take about 10-15 minutes to complete the questionnaire. Data were collected from February 28, 2020 to March 5, 2020. The questionnaire was released through WeChat and QQ, and the subjects responded independently online through WeChat or QQ links. We excluded people with history of mental illness, organic diseases, and history of psychoactive substance abuse. To ensure the integrity and correctness of the data collection, all test questions were required to be answered completely. To prevent repeated answers, each IP address could only answer once. During the test, if the subjects had chosen the wrong option, they could go back and choose again. Informed consent was obtained from all subjects. To reassure the subjects, their names were not required. If the subjects wanted to, they could stop halfway. After answering the questionnaire, subjects could randomly select gifts as rewards. All questionnaires were recovered, with a recovery rate of 100%. We excluded 72 invalid questionnaires with incomplete answers, and 2208 valid samples were included, with an effective rate of 96.84% (**Figure 1**). The characteristics of the subjects are shown in **Table 1**.

Study Instrument

The self-compiled demographic questionnaire was used to collect information about age, sex, only child status, education level, and place of residence.

The Simplified Coping Style Questionnaire (SCSQ) compiled by Folkman and Lararus was revised and tested by Xie Yaning [24,25]. SCSQ was used to investigate the coping style of medical students. It consists of positive and negative coping, including 20 items. Positive coping consisted of items 1 to 12, which mainly measured the characteristics of positive coping. In contrast, negative coping was made up of items 13 to 20, which mainly measured the characteristics of negative coping. The questionnaire was a self-rated scale with 4 grades. After each item of the coping style, there were 4 choices: not used, occasionally used, sometimes used, and often used (corresponding

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Table 2. The severity of post-traumatic stress symptoms in different Demographic characteristics group.

Variables		PTSS [Median (IQR)]	Z	p
Sex	Male	23 (18-32)	-3.557	<0.001
	Female	25 (20-32)		
Education level	Undergraduate	24 (19-31)	-1.167	0.243
	Graduate student	26 (19-34)		
Only child	Yes	24 (19-32)	-1.413	0.158
	No	25 (19-32)		
Native place	Rural	24 (19-32)	-1.373	0.170
	Urban	24 (18-32)		
Age (years)	17-20	24 (19-31)	-0.408	0.683
	21-38	24.5 (19-32)		

scores 0, 1, 2, 3). The subjects chose one of the answers according to their situation. The Cronbach's α for SCSQ in the current study was 0.877, while the Cronbach's α for positive coping and negative coping were 0.914 and 0.770, respectively.

The Social Support Rating Scale (SSRS) was compiled by Xiao Shuiyuan [26] and was used to investigate the social support of medical students. The SSRS consists of subjective support, objective support, and availability of support, including 10 items. Subjective support refers to the emotional experience and satisfaction of individuals being respected, supported, and understood in society, which is closely related to subjective feelings of individuals. Objective support refers to objective, visible, or practical support, including material direct assistance, social network, and the existence and participation of group relations. The degree of availability of support reflects the individual's active use of all kinds of social support, including the way of talking, the way of asking for help, and the situation of participating in activities. The higher the score of SSRS, the better the social support. In 2008, Liu Jiwen tested the reliability and validity of the scale [27]. The Cronbach's α for SSRS in the current study was 0.756.

The Post-traumatic Stress Disorder screening scale (PTSD Checklist-Civilian Version, PCL-C) was compiled by the Behavioral Science Division of the American Post-traumatic Stress Disorder Research Center according to DSM-IV [28]. The PCL-C was specially designed to evaluate the post-traumatic experience of ordinary people in normal life (as opposed to war). PCL-C investigated the post-traumatic stress symptoms of medical students. There are 17 items in the scale, and each item is divided into 5 grades: 1 "not at all", 2 "a little", 3 "moderate", 4 "considerable", and 5 "extreme". The score was proportional to the occurrence of PTSD. The higher the score of PCL-C, the greater the possibility of PTSD. The reliability and validity of the scale were tested by Yang Xiaoyun [29]. It also has a high correlation with SCL-90 and EPQ, with good reliability and validity. The cut-off point of screening for PTSD is usually suggested to be set at 38 [30]. In this current research, 38 was used to screen for PTSS. The Cronbach's α for PCL-C in the current study was 0.928.

Statistical Analyses

The database was established. SPSS 23.0 software was used for statistical analysis. Descriptive statistics were used to analyze the detection rates of PTSS in medical students. Chi-square analysis and Mann-Whitney U test were used to test the statistical difference between the PTSS group and the non-PTSS group. The relationship among coping style, social support, and PTSS was explored by Pearson correlation analysis. A structural equation model constructed by Amos17.0 was used to further verify whether social support played a mediating role between positive coping and PTSS. Stepwise forward logistic regression analysis (LR,λ_{enter}=0.05,λ_{out}=0.10) was performed to find the influencing factors of PTSS. In this current research, the two-sided *t* test was used and *P*<0.05 was used as the statistical significance test standard.

Results

Status of Post-Traumatic Stress Symptoms

The median of PTSS was 24 (IQR,19-32), ranging from 17 to 85. According to the critical value of PCL-C in the screening for PTSS [30], 230 medical students had PTSS among 2208 medical students. The detection rate was 10.42%. **Table 2** shows that during the COVID-19 pandemic, the severity of PTSS was different between males and females. The total PTSS score of females was much higher than that of males. The severity of PTSS did not have significant differences in the distribution of age, sex, only child status, education level, and place of residence.

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Table 3. Social support, Coping style status and demographic characteristics of the PTSS group and non-PTSS group.

Variables		Non-PTSS group (n=1978)	PTSS group (n=230)	χ^2/Z	*p*
Sex	Male	711	90	0.904	0.342
	Female	1267	140		
Education level	Undergraduate	1761	208	0.422	0.516
	Graduate student	217	22		
Only child	Yes	529	72	2.163	0.141
	No	1449	158		
Native place	Rural	1417	154	2.200	0.138
	Urban	561	76		
Age (years, mean±SD)		21.23±2.73	21.11±2.72	-0.826	0.409
Social support [median(IQR)]		37 (32-42)	32 (28-36)	-9.802	<0.001
Objective support [median(IQR)]		7 (5-8)	6 (5-7)	-6.231	<0.001
Subjective support [median(IQR)]		22 (19-26)	19 (16-22)	-8.246	<0.001
Availability of support [median(IQR)]		8 (7-9)	7 (6-8)	-7.286	<0.001
Coping style [median(IQR)]		36 (28-40)	34 (29-39)	-3.458	0.001
positive coping [median(IQR)]		27 (20-30)	23 (17-26)	-9.420	<0.001
Negative coping [median(IQR)]		9 (7-12)	11 (9-14)	8.603	<0.001

Table 4. Analysis of the relationship between coping style, social support and post-traumatic stress symptoms.

Variables	Coping style	Positive coping	Negative coping	Social support	Objective support	Subjective support	Availability of support
Positive coping	0.892*						
Negative coping	0.681*	0.277*					
Social support	0.366*	0.488*	0.054				
Objective support	0.219*	0.268*	0.031	0.632*			
Subjective support	0.260*	0.323*	0.030	0.892*	0.308*		
Availability of support	0.405*	0.481*	0.083	0.599*	0.307*	0.317*	
Post-traumatic stress symptoms	-0.143*	-0.310*	0.198*	-0.291*	-0.135*	-0.291*	-0.248*

N=2208 observations; * *P*<0.01 (2-tailed).

The Social Support, Coping Style Status, and Demographic Characteristics of the PTSS Group and Non-PTSS Group

The PTSS detection rates in the distribution of age, sex, only child status, education level, and place of residence did not have significant differences (*P*>0.05). Compared with those of the non-PTSS group, the total score and its all-factor score of social support, the total score of coping style and the positive coping score of the PTSS group were much lower, while the negative coping score of the PTSS group was much higher (*P*<0.01) (**Table 3**).

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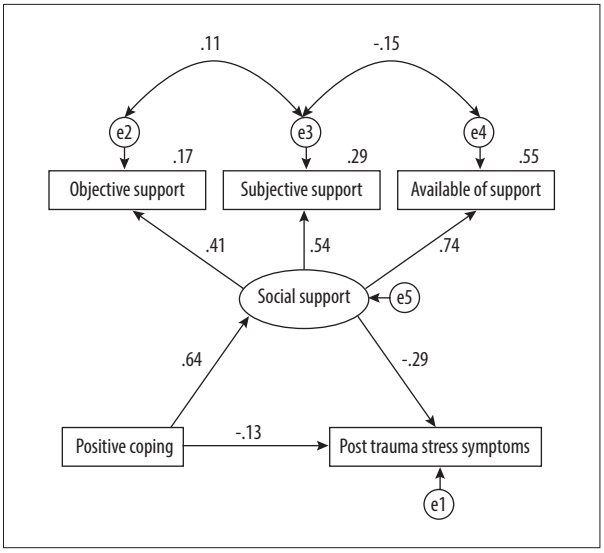

Figure 2. Path analysis of the relationship between active coping, social support, and post-traumatic stress disorder. The ellipse represents the latent variable, the box represents the observation variable, the arrow between the ellipse and the box represents the factor load, and the arrow between the ellipse and the ellipse represents the path system.

Analysis of the Relationship Between Coping Style, Social Support, and Post-Traumatic Stress Symptoms

Table 4 shows that during the COVID-19 pandemic, the coping style, positive coping, social support, and its all-factors were negatively correlated with PTSS ($P<0.01$). There was a significant positive correlation between negative coping and PTSS ($P<0.01$). Coping style and positive coping were positively correlated with social support and its all-factors ($P<0.01$), but there was no significant correlation between negative coping and social support and its all-factors ($P>0.05$).

Path Analysis of the Relationship Between Positive Coping, Social Support, and Post-Traumatic Stress Symptoms

The positive coping of medical students was used as the manifest variable to measure positive coping, while objective support, subjective support, and availability of support were used as the latent variables to measure social support. The total score of post-traumatic stress symptoms was used as the manifest variable to measure PTSS. The analysis of the structural equation model was carried out using Amos17.0. **Figure 2** (Amos17.0) indicates that the hypothetical model is appropriate and reasonable. Positive coping has a direct effect on social support and PTSS, while social support also has a direct effect on PTSS. It shows that positive coping can not only directly lead to PTSS, but can also lead to PTSS indirectly through social support. Social support plays a mediating role between positive coping and PTSS. Model fitting index: $\chi^2=18.927$, df=2, GFI=0.997, AGFI=0.974, NFI=0.988, RFI=0.940, IFI=0.989, TLI=0.946, CFI=0.989, RMSEA=0.062 ($P<0.07$).

Analysis of the Intermediary Effect of Social Support

The bootstrap method was used to analyze the mediating effect of social support. **Table 5** shows that the path differences in the model were statistically significant. The total effect of positive coping on post-traumatic stress disorder was -0.310 (95% CI: -0.346 to -0.271, $P<0.001$), the direct effect was -0.128(95% CI: -0.194 to -0.054, $P<0.01$), and the indirect effect was -0.182 (95% CI: -0.249 to -0.129, $P<0.001$). Therefore, the mediating effect of social support between positive coping and PTSS was 58.81% of the total effect.

The Influencing Factors of PTSS

Stepwise forward logistic regression analysis (LR,$\lambda_{enter}=0.05$, $\lambda_{out}=0.10$) was performed using the PTSS grouping (0 represents

Table 5. Bootstrap test of the mediating effect of positive coping on post-traumatic stress symptoms.

Pathways	Estimate	Standard error	95% CI	*p*
Total effect				
Positive coping→PTSS	-0.310	0.019	-0.346 to -0.271	<0.001
Direct effect				
Positive coping→PTSS	-0.128	0.036	-0.194 to -0.054	0.002
Positive coping→Social support	0.636	0.027	0.580 to 0.688	<0.001
Social support→PTSS	-0.286	0.041	-0.370 to -0.209	<0.001
Indirect effect				
Positive coping→Social support→PTSS	-0.182	0.030	-0.249 to -0.129	<0.001

CI – confidence interval.

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Table 6. The influencing factors of PTSS.

Independent variable	B	SE	Wals	Exp(B)	Exp(B) 95% CI		Nagelkerke R^2	*P*
					Low	Up		
Constant	1.334	0.347	14.783	3.798				<0.001
Subjective support	-0.096	0.017	33.601	0.908	0.879	0.938	0.074	<0.001
Positive coping	-0.066	0.010	39.924	0.936	0.917	0.956	0.036	<0.001

the non-PTSS group, 1 represents the PTSS group) as a dependent variable and age, sex, only child status, education level, place of residence, objective support, subjective support, availability of support, and positive coping as independent variables. The results show that only objective support and positive coping enter the logistic regression equation with PTSS as dependent variables (Hosmer-Lemeshow test, χ^2=5.209, df=8, *P*=0.735), accounting for 7.4% and 3.6%, respectively. Objective support and positive coping are the 2 main protective factors of PTSS (**Table 6**).

Discussion

As a public health stress event, COVID-19 has seriously affected people's mental health, causing problems such as anxiety, depression, and post-traumatic stress disorder [4]. During the COVID-19 pandemic, 34.9% of college students showed acute stress [31]. A large-sample study of Chinese college students in Guangdong Province during the epidemic reported that the incidence of stress symptoms among college students was 50.9% [32]. Another Chinese survey of adolescents during the COVID-19 pandemic found that the incidence of PTSS was 35.5% [33]. A meta-analysis of mental problems in medical students reported the prevalence of PTSD was 34% [23]. This current research found that during the COVID-19 pandemic, the PTSS detection rate in medical students was 10.42%. The prevalence of PTSS investigated in this current research is lower than that of other reported studies. The data of this current research were collected in the early stage of the COVID-19 outbreak. The time during which the participants had to be isolated at home was not very long. We found that the longer the isolation time, the higher the risk of post-traumatic stress disorder [34]. An investigation 1 month after the COVID-19 outbreak in China found that the incidence of PTSS was only 4.6% [35]. Therefore, the time at which an investigation was performed may be one of the reasons for inconsistent research results. Furthermore, the different scales used in the survey and the regional differences of the subjects may also have led to inconsistent results among studies.

This current research shows that during the COVID-19 pandemic, the severity of PTSS was different between males and females. The total PTSS score the females was much higher than that of the males. However, the PTSS detection rate in females (9.71%) was not significantly different from that in males (11.24%). A previous study has shown that there is a gender difference in the incidence of PTSS during the COVID-19 pandemic. The prevalence of PTSS in females is higher than that in males [36]. Interestingly, the prevalence rate of PTSD in healthcare professionals was also different by gender during the COVID-19 pandemic. One study showed that the prevalence of PTSD in female healthcare professionals (21.7%) is 4 times higher than that in males (5.1%) [37]. The gender difference in PTSS may be related to the greater psychological pressure to take care of the families for females [38]. It may also be that females lack coping skills in the face of epidemic pressure [39]. On the other hand, this gender difference of PTSS can be explained by genetic predisposition. Females are more likely to inherit factors related to anxiety [40]. There was no difference in the detection rate of PTSS in this current research, which may be related to the fact that medical students were isolated at home and did not show serious PTSS at the early stage of the COVID-19 pandemic. In addition to gender, mental illness is also a factor that increases the prevalence of PTSS. A study found that depression is significantly associated with PTSS. The incidence of PTSS in patients with depression during the epidemic was 16 times higher than that in normal controls [41].

We found that positive coping and social support were negatively correlated with PTSS. Social support and positive coping of the non-PTSS group were better than those of the PTSS group. Coping style is a conscious, purposeful, and flexible adjustment strategy for reality and environmental changes. If individuals are under high stress without positive coping, the risk of psychological problems can reach 43.3%, which is twice as high as that of the general population [42]. During the COVID-19 pandemic, the mental health of healthcare workers was positively correlated with positive coping and negatively correlated with negative coping [43]. Social support is defined as the influence that a person obtains through social contact, which can reduce psychological stress, relieve mental tension, and improve social adaptation. Lack of social support is a major risk factor for PTSD among healthcare workers during the COVID-19 pandemic [44]. In major traumatic events, a study

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has shown that the level and quality of social support are related to PTSD [45]. A study of post-traumatic stress disorder among rescue workers found that there is a negative correlation between social support and post-traumatic stress disorder, while social support plays an intermediary role in the effect of trait mindfulness on PTSD [46].

This current research also found that during the COVID-19 pandemic, social support and its all-factors of medical students were negatively correlated with PTSS. Family is the most important and main social support system for college students. Family disruption was related to maladaptation of children during the COVID-19 pandemic [47]. Family changes may be the main stressors that lead to PTSD. The lack of a social support system is an important cause of post-traumatic stress disorder among college students [48]. Healthcare workers with high social support had a low risk of PTSD [49]. Coping style and social support are the influencing factors for PTSS. The logistic regression analysis in this current research showed that objective support and positive coping were the 2 main protective factors for PTSS, accounting for 7.4% and 3.6%, respectively. Individuals with positive coping can get more social support, which may be an intermediary variable between positive coping and PTSS.

To clarify the relationship among positive coping, social support, and PTSS in medical students, structural equation models were constructed in this current research. The results showed that the lack of positive coping in medical students during the COVID-19 pandemic could lead to PTSS directly and indirectly through social support. Social support plays a mediating role between positive coping and PTSS. In earthquake disasters, the incidence of PTSD in people with high social support and high self-esteem is low. Social support can reduce the incidence of PTSD by improving self-esteem. There is a mediating effect on the level of self-esteem between social support and PTSD [50]. Thus, positive coping is conducive to seeking more social support resources to deal with stress. In the psychological rescue process, we can change the negative coping style of students to alleviate PTSS directly or indirectly through social support.

To the best of our knowledge, this current research is the first large-sample study on PTSS in medical students during the COVID-19 pandemic. It focused on the relationship among positive coping, social support, and PTSS. The mediating role of social support between positive coping and PTSS had been further clarified. The results of this current research will be used as scientific evidence to prevent PTSS. This current research also has some limitations. Social support played a mediating role between positive coping and PTSS, but this is only the result of the cross-sectional survey. The relationship between positive coping, social support, and PTSS needs to be verified by prospective research. Although the medical students in this study were all over China, some remote areas were not fully covered. Furthermore, an unbalanced distribution of gender, only child status, education level, and place of residence may be a deficiency of data collection in this current research. Our data need to be further expanded to be more representative. Although this current research used many control variables to prevent respondents from randomly answering the online questionnaires, some may not have responded truthfully due to concerns about disclosing personal privacy.

Conclusions

During the COVID-19 pandemic, the PTSS detection rate in medical students was 10.42%. The severity of PTSS was different between males and females. Positive coping was positively correlated with social support, while positive coping and social support were negatively correlated with PTSS. Social support plays a mediating role between positive coping and PTSS. Objective support and positive coping are the 2 main protective factors of PTSS. Our research suggests that we can change students' negative coping style to alleviate PTSS directly or indirectly through social support in the process of psychological rescue.

Department Completing The Work

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Declaration of Figures' Authenticity

All figures submitted have been created by the authors, who confirm that the images are original with no duplication and have not been previously published in whole or in part.

Abbreviations

COVID-19 – Coronavirus Disease 2019; **PTSS** – post-traumatic stress symptoms; **PTSD** – post-traumatic stress disorder; **SSRS** – Social Support Rating Scale; **SCSQ** – Simplified Coping Style Questionnaire; **PCL-C PTSD** – Checklist-Civilian Version; **SARS** – severe acute respiratory syndromes.

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