

Research on the influence of social support on college students' positive mental health

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Abstract: During a public health emergency, we assessed 207 university students using the Perceived Social Support Scale (PSSS), the Chinese Version of the Perceived Stress Scale (CPSS), Generalized Anxiety Disorder (GAD-7), Warwick Edinburgh Positive Mental Health Scale, and WEMWBS. This study aims to examine the positive mental health status of university students during public health emergencies, analyze the factors influencing it, and provide a basis for improving their mental well-being. The results reveal a significant negative correlation between social support and stress/anxiety, as well as a significant positive correlation with positive mental health. Social support plays a significant role in mediating the effect of stress and anxiety on positive mental health. The relationship among social support, stress, anxiety, and positive mental health supports the mediating effect model. In conclusion, enhancing university students' understanding of social support can reduce their anxiety and stress, and improve their positive mental health in the face of sudden public health emergencies.

1. Introduction

Previous research has found that public health emergencies, as stressful events in social life, can have complex and far-reaching effects on college students' psychological [1]. When individuals experience major public health emergencies, they are prone to anxiety and depression, which in severe cases can lead to post-traumatic stress disorder and many other psychological problems [2]. Improving positive mental health can help reduce the negative impact of public health emergencies on people's mental health [3]. Positive psychology proposes that psychology should start from the actual or tap the potential strength of a person [4], and promotes a positive and optimistic attitude to face the difficulties in life, including psychological problems. Thus, it helps individuals to continuously discover their potential and achieve a happy life [5]. High social support contributes to the maintenance of a good physical and mental state of the individual [6]. At the same time, the cultivation of positive psychological qualities is also inseparable from a positive social environment, and harmonious interpersonal relationships help to establish a perfect social support system [7], which provides important support for the cultivation of positive psychological qualities [8].

Social support refers to the material and spiritual support that an individual receives from social relationships such as relatives, friends, colleagues or group organizations. According to Xiao Shuiyuan (1994), social support can be divided into three aspects: objective support, subjective support, and the degree of utilization of support. Studies have shown that social support has a positive effect on the mental health of individuals [9], and a sound social support system can effectively reduce psychological damage or help individuals recover from injury, provide hope for life and reduce the risk of depression and other related mental illnesses [10], and face the adverse effects of public health emergencies in a more positive state.

Stress is the psychological tension and discomfort manifested by stressors and stressful events in daily life that cause individuals to feel threatened [11]. Individuals under long-term stress can negatively affect daily life and even threaten physical and mental health. Studies have shown that stress is significantly and positively correlated with depression, anxiety, and fatigue, and that psychological stress is one of the key factors leading to illness and disease deterioration [12]. Improving the level of social support can help individuals face stress in a better state [13] and reduce the effects of stress on physical and mental health.

Generalized anxiety is dominated by persistent primary anxiety symptoms, manifested by persistent uncontrollable fear or preoccupation with no obvious object or fixed content, often accompanied by vegetative nerve dysfunction or motor restlessness, which includes psychogenic anxiety, somatic anxiety and psychogenic vigilance [14], which seriously affects people's quality of life. Studies have shown that public health emergencies can lead to a significant increase in anxiety levels among college students [15]. Being in a state of anxiety for a long time can have a serious impact on the positive mental health situation of college students.

Based on the literature review and theoretical framework, this paper hypothesizes that social support is closely related to positive mental health among college students. Social support improves positive mental health by reducing stress and anxiety. Three hypotheses are proposed:

Hypothesis 1: Social support has a significant positive effect on positive mental health.

Hypothesis 2: Anxiety partially mediates the relationship between social support and positive mental health.

Hypothesis 3: Stress partially mediates the relationship between social support and positive mental health.

2. Materials and methods

2.1. Research Sample

The experimental subjects were selected from college students of a university in Jilin Province, China, during the period of public health emergencies, using simple random sampling method, a total of 215 subjects were selected and screened according to the completeness of the general information of the samples, and 207 valid questionnaires were obtained, with an effective rate of 96.28%. Among them, 198 (95.65%) were male and 9 (4.35%) were female, and the average age was 19.85 ± 1.4 years.

2.2. Research tools

2.2.1. Perceived Social Support Scale

The Perceived Social Support Scale (PSSS) developed by Zimet was used for the evaluation, which consists of 12 entries and consists of three dimensions: family support, friend support, and other support (leaders, relatives, and coworkers), with four entries in each dimension. The scale is

scored on a 7-point Likert scale ranging from 1 "strongly disagree" to 7 "strongly agree". A higher total score on the scale indicates a higher level of social support [16]. The internal consistency coefficient α of the scale in this study was 0.932. The scale has good reliability and validity in the student population [17].

2.2.2. Chinese Version Perceived Stress Scale

The Chinese Version Perceived Stress Scale (CPSS) developed by Cohen, Kamarch, and Mermelstein in 1983 was used, which consists of 14 entries and uses a 5-point Likert scale with the subjects' feelings, reactions, and level of agreement as the rating indicators. Seven of the entries are reverse scored. Scores range from 1 "never" to 5 "always", with higher scores indicating greater stress. The scale not only measures the perceived stress of individuals, but also their ability to cope with stress and related coping characteristics. The internal consistency coefficient α of the scale in this study was 0.886, and the scale has good reliability and validity among Chinese adults [18].

2.2.3. Generalized Anxiety Disorder

The Generalized Anxiety Disorder scale (GAD-7), which is widely used in clinical practice, was used, which consists of 7 entries, "never", "several days", "most of the time", "almost every day" correspond to 0, 1, 2 and 3 points respectively, with a total score of 21 points, with 5-9 points representing mild anxiety, 10-13 points representing moderate anxiety, and 15-21 points representing severe anxiety. The GAD-7 has been shown to be a useful tool for anxiety management in college students in previous studies. It has been shown to have good reliability and validity for application in college student populations, and has good application value as it can effectively exclude non-anxious testers [19]. The internal consistency coefficient α of this scale in this study was 0.904, and this scale has good reliability and validity in the adolescent population [20].

2.2.4. Warwick–Edinburgh mental well-being scale

The Warwick-Edinburgh mental well-being scale (WEMWBS) was used, which was developed by Tennant et al. in 2006 and consists of 14 entries that integrate positive emotions, positive mental functioning, and interpersonal relationships, which respond to the 3 dimensions of mental health. Satisfaction 3 dimensions. Each entry is assigned a value from 1 to 4 according to the degree of conformity with its own situation (1=never; 2=rarely; 3=sometimes; 4=frequently), with higher scores representing better positive mental health [21]. The internal consistency coefficient α of this scale in this study was 0.912, and this scale has good reliability and validity in the adolescent population [22].

2.3. Research process

The questionnaire method was used, and the test was carried out uniformly according to the class in which the subjects were located, and the organizer explained in detail the purpose, significance, and process of the test before the test, and unified the language of instruction. A total of 215 questionnaires were distributed and 207 were recovered, with a recovery rate of 96.28%. SPSS 26.0 was used to statistically analyze the data.

2.4. Statistical processing

SPSS 26.0 software was used to organize and statistically analyze the data, and the measurements were expressed as mean \pm standard deviation ($\bar{x} \pm s$), and the counts were expressed

as percentage (%), and stepwise regression analysis was used to explore the relationship between social support, stress, anxiety and positive mental health [23]. Variable forced entry stratified regression analysis was used to explore the mediating effect of stress and anxiety in the relationship between social support and positive mental health [24], with $P < 0.05$ representing a statistically significant difference.

3. Conclusions

3.1. Correlation of Social Support with Stress, Anxiety and Positive Mental Health

3.1.1. Correlation of variables

The correlation analysis of the four research variables of social support, stress, anxiety and positive mental health was carried out, and the results are shown in Table 1. It can be seen that social support is significantly negatively correlated with stress and anxiety, and significantly positively correlated with positive mental health. Stress is significantly positively correlated with anxiety and negatively correlated with positive mental health. Anxiety is significantly negatively related to positive mental health. Preliminary support is provided for further testing of the hypotheses.

Table 1: Analysis of the correlation between social support, stress, anxiety and positive mental health (r , $n=207$).

Variant	Social Support	Stress	Anxiety
Stress	-0.54**	-	-
Anxiety	-0.32**	0.62**	-
Positive Mental Health	0.54**	-0.72**	-0.50**

** $P < 0.01$, *** $P < 0.001$.

3.2. Social support influences positive mental health: a model of the mediating effects of stress and anxiety

Based on the results of the above studies, mediation effect models with social support as the independent variable and positive mental health as the dependent variable were constructed using stress and anxiety as mediators, respectively, in order to explore the effects of social support on the positive mental health of college students during isolation.

First, social support significantly predicts stress and positive mental health, indicating that social support has both direct and indirect effects on positive mental health. Among them, the direct effect of social support on positive mental health is 0.12 accounting for 40.00% of the total effect (0.30), and the indirect effect is 0.18, accounting for 60.00% of the total effect. In addition, the 95% confidence interval of social support through the path of stress to positive mental health does not contain 0, indicating that there is a mediating effect of stress between social support and positive mental health and the 95% confidence interval of the path of social support to 95% confidence interval of the positive mental health pathway does not contain 0, indicating that stress is not the only mediating variable. The mediating effect test for stress is shown in Table 2.

Table 2: Mediating effect test for stress

	Effect	Boot SE	T	P	95% Confidence Interval	
					LLCI	ULCI
Aggregate Effect	0.30	0.03	9.24***	<0.001	0.24	0.36
Direct Effect	0.12	0.03	3.97***	<0.001	0.06	0.18
Indirect Effect	0.18	0.02		<0.001	0.13	0.22

** $P < 0.01$, *** $P < 0.001$.

Meanwhile, the 95% confidence interval of the pathway of social support to reach positive mental health through anxiety did not contain 0, which verified the mediating effect of anxiety between social support and positive mental health. Therefore, the relationship between social support, anxiety and positive mental health is consistent with the mediating effect model. The direct effect of social support on positive mental health was 0.23, accounting for 76.67% of the total effect (0.30), and the indirect effect was 0.07, accounting for 23.33% of the total effect. The regression path is shown in Figure 1.

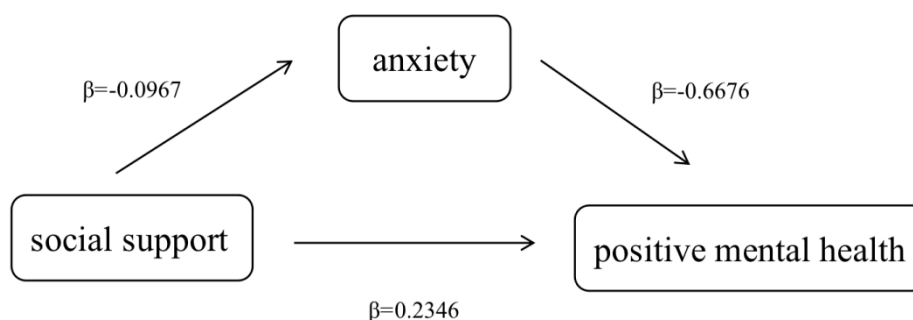


Figure 1: Regression paths with social support as the independent variable and anxiety as the mediating variable.

The above results suggest that stress and anxiety play a mediating role in testing the multiple mediating effects of social support on positive mental health, and that the relationship between social support, stress, anxiety, and positive mental health supports the mediating effects model.

4. Discussion

Good social support can help college students in public health emergencies maintain positive mental health and reduce the psychological damage caused by negative events such as epidemic quarantine and school closure, while a perfect social support system can help individuals relieve the stress and anxiety caused by public health emergencies, and face all kinds of negative impacts with a positive attitude. Different forms of social support will also provide more channels for college students in public health emergencies, which is conducive to their physical and mental health.

In this study, we use social support as the independent variable and anxiety as the mediator variable to construct the mediation effect model of social support affecting positive mental health through anxiety, and the results found that the regression path coefficient of social support affecting positive mental health through anxiety is significant, indicating that social support can improve the mental health of college students who are in the midst of public health emergencies by alleviating the level of anxiety. This may be due to the fact that individuals with a high level of social support have more care and help from people around them, and have more ways and means to alleviate

anxiety when encountering an anxiety event [25], and therefore will deal with public health emergencies in a more positive frame of mind. Taking stress as a mediator, we constructed a mediation model of social support affecting positive mental health, and found that social support can directly affect positive mental health, and at the same time can indirectly affect the level of positive mental health through stress, which is consistent with the results of existing research [26], and stress plays a partial mediating role between social support and positive mental health. Social support is a correlate of stress reduction and a factor that affects individual positive mental health, and the level of individual positive mental health is affected by both social support and stress. Individuals under chronic stress will undoubtedly reduce the level of positive mental health, leading to a series of diseases that affect physical and mental health [27].

Improving the level of positive mental health of college students under public health events requires not only strengthening the support of friends, family and others, but also paying attention to cultivating students' awareness of the use of social support. In daily education, counselors, classroom teachers, and psychological staff should pay more attention to the situation of social support for college students. At the same time, they can take the initiative to provide spiritual, material and information help and support for students in need. Especially during public health emergencies, teachers should focus on guiding and helping students to establish the awareness of actively seeking social support, and establishing ways and means for students to obtain social support. When encountering problems that cannot be solved by individuals, they can actively seek help at the first time, which plays a very crucial role in maintaining their mental health.

This study expands the research on the influencing factors of positive mental health and explores the effects of social support, stress and anxiety on positive mental health, providing an effective basis for college students to carry out mental health counseling under public health emergencies, revealing the mechanism of the influence of individual positive mental health in a more in-depth way, and understanding the multifaceted role of social support. It promotes students to develop a good state of mind, continuously improve the level of positive mental health, and jointly face possible public health events in the future.

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