Epidemic prevention should prevent suppression: Psychological capital and social support's joint effect on college students' mental health

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Abstract: At present, COVID-19 persists. We are in a post-epidemic period focused on prevention and suppression. This study mainly discusses the joint effect of psychological capital and social support on college students' mental health in this post-epidemic phase. A questionnaire survey was administered to 194 college students at a university in Shanghai. The results show that college students have greater psychological capital but less perceived social support. At the same time, they have better mental health and less psychological disturbance. In addition, psychological capital and social support were positively correlated with psychological well-being and negatively correlated with poor mental health states. Finally, psychological capital and social support can be substituted for each other, alleviating the adverse impact on mental health when one or the other resource is missing.

1. Introduction

Due to the effective epidemic prevention efforts of the Chinese government, COVID-19 restrictions are easing, and people are gradually returning to normal life. However, as autumn and winter approach, COVID-19 cases reappear in many areas. The government has put forward strict requirements for epidemic prevention and control. People are anxious about the possibility of recurrence. Thus, we are in a post-epidemic period of epidemic prevention and suppression. In addition, according to the World Mental Health Day 2020 theme, "promoting the spirit of anti-epidemic and protecting mental health," combined with the policy requirements of "building a national mental health service system for young people," an urgent need exists to establish a maintenance mechanism to ensure the mental health of college students in the post-epidemic period. Thus, epidemic prevention remains important in this period, and college students' mental health is still a concern. This study provides an in-depth discussion of college student's mental health status during the post-epidemic period. This analysis also examines influencing factors and ways to help college students maintain their psychological wellness. Moreover, it provides guidance for colleges and universities to promote college students' mental health education.

The primary objectives of this study include (1) clarifying college students' mental health status in the post-epidemic period; (2) analyzing the key factors that affect college students' mental health in the post-epidemic period; (3) exploring the relationship between psychological capital, social support, and college students' mental health; (4) investigating whether the mental health status of college students with different demographic backgrounds differs. This study aims to make several research contributions. First, it addresses the temporal and spatial context of the current epidemic situation. Therefore, it enriches the body of research on college students' mental health in the post-epidemic period. Second, to ensure college students' mental health, it provides motivation for promoting mental health education. For college students themselves, this study will increase their awareness of the key factors affecting mental health. For university, it will encourage universities to monitor college students' mental health closely, set up relevant mental health courses to improve

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college students' mental health education.

2. Relevant Concepts and Research

2.1. Psychological Capital

Luthans et al. (2005) [1] defined psychological capital as "a positive psychological state displayed by individuals in the process of growth and development." Luthans et al. (2005) [1] claimed that the four dimensions of psychological capital are (1) Self-efficacy: having the confidence to successfully accomplish challenging tasks; (2) Optimism: taking a favorable view of what has happened and being positive about what is and is not happening now; (3) Resilience: when encountering difficulties, a resilient individuals quickly recovers and persists in their efforts, or overcomes the crisis and actively changes and grows; (4) Hope: referring to a positive motivational state of striving in various ways to achieve the desired goal. In a prior study on positive psychological capital, Zhang (2013) [2] explored the relationship between positive psychological qualities and mental health. The results showed that a significant negative correlation exists between positive psychological qualities and poor mental health. Wang (2014) [3] explored the relationship between college students' psychological capital, social support, and campus life satisfaction. They found that college students' psychological capital and social support levels were high. However, they were only moderately satisfied with campus life. Moreover, psychological capital indirectly affected campus life satisfaction via social support.

2.2. Social Support

Social support is the degree of contact between individuals and all social aspects in the spiritual and material realms, including friends, colleagues, acquaintances, families, and leagues/organizations (Ye and Dai, 2008) [4]. Three aspects reflect social support. (1) Objective support refers to tangible sources, including the direct funding of material resources and the existence of and direct participation in social organizations and groups; (2) Subjective support is the experience or emotion personally felt by an individual, including respect, support, understanding, satisfaction, and pleasure; (3) Support utilization refers to the extent to which individuals use or consider using external social support (Xiao, 1987) [5]. Song's (2013) [6] research explored the relationship between college students' life events, social support, and mental health. The results showed that college students' life events and social support directly predict their mental health and affect it through psychological consistency. Yang (2015) [7] explored college students' psychological resilience and investigated the impact of stressors, individual differences, social support, and positive coping styles on their school adaptation. The research found that stress events and individual differences will adversely affect school adaptation, while social support and positive coping styles positively affect it.

2.3. Mental Health

Mental health is the development of an individual's state of mind to an optimal state in the areas of brain, cognition, and emotions that do not compromise others' psychological wellness. A state of mental health refers to the absence of disability or disease of the mind and good social adaptability. Mental health can be divided into three types: (1) poor mental health refers to the presence of psychological obstacles and problems; (2) positive mental health refers to a sense of happiness and well-being (3) complete mental health is a state of sound physical, psychological and social functioning. In terms of relevant research, Jiang et al. (2020) [8] discussed factors that influenced college students' mental health during the epidemic. Their results showed that males had better mental health than females. Junior students fared better than senior students. Students' mental health was relatively poor when the epidemic peaked in their area of residence, or their family members were working on the front line. Wang et al. (2020) [9] analyzed college students' mental health during the epidemic. They found that the anxiety level of new graduates was higher than that of students in other grades. Female students had more severe symptoms than males. Furthermore, during the epidemic, college students showed more psychological disturbances, such as anxiety and depression, than they did in ordinary times.

3. Research Design

3.1. Research Model and Hypotheses

Based on the conservation of resources theory, resources are a key component of stress assessments, which determine how individuals respond to stressful situations. Thus, we propose that individuals consume resources to manage their response to the epidemic (i.e., a stressor). Psychological capital is an internal resource; social support is external. A theoretical model of college student's mental health in the post-epidemic period is constructed (see Figure 1) by combining them, and the following hypotheses are proposed:

Hypothesis 1: Psychological capital can predict college students' mental health.

Hypothesis 2: Social support can predict college students' mental health.

Hypothesis 3: The interaction between psychological capital and social support can predict college students' mental health.

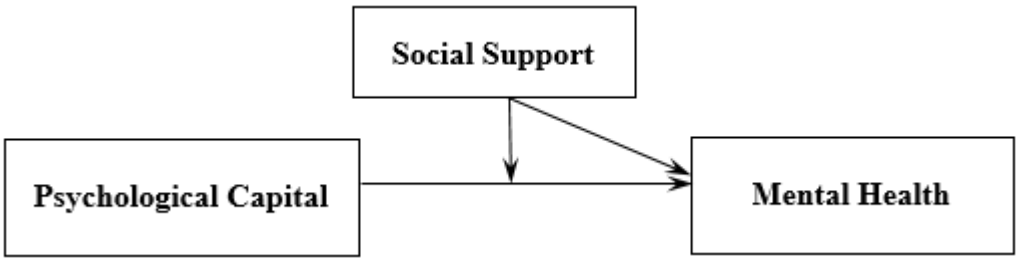

Figure 1 Theoretical Model

3.2. Research Sample and Procedure

College students from a university in Shanghai participated in the study. A questionnaire survey was administered. We modified a paper version into an online questionnaire platform and then generated a QR code. Next, we sent the QR code to online QQ and WeChat college student groups to collect the data. After excluding six incomplete questionnaires, 194 valid ones were analyzed. Among the respondents, 79% were female, and 76.29% were freshmen. The students were mostly from other places (63%), their families were mostly urban residents (53.61%), and most were only children (65%).

3.3. Measures

Except for social support, all items were evaluated with a 5-point Likert scale, ranging from 1=completely inconsistent to 5=completely consistent. Psychological capital was measured using the 26-item scale by Zhang et al. (2010) [10]. Sample items included statements such as "My opinions and abilities exceed those of ordinary people." Cronbach's alpha for this scale was 0.96. Social support was measured using the 10-item scale by Xiao (1994) [11]. Sample items included "How many close friends do you have who can receive support and help: (1) none (2) 1-2 (3) 3-5 (4) 6 or more." Psychological wellness was measured using the 9-item scale by Yuan (2014) [12]. Sample items included "I feel I can handle life and difficulties in life." Cronbach's alpha for this scale was 0.96. Poor mental health was measured using the 21-item scale by Yuan (2014) [12]. Sample items included "I feel that life is meaningless." Cronbach's alpha for this scale was 0.97.

4. Data Analysis

4.1. Difference Analysis

First, a significant difference was detected between males and females in terms of good mental health status ($t=3.20$, $p<0.01$). Among them, males (mean=4.20, SD=0.69) reported significantly better mental health than females (mean=3.71, SD=0.91). In addition, a significant difference between local students and those from outside the region in terms of psychological well-being ($t=2.80$, $p<0.01$). Among them, the mental health of local students (mean=4.04, SD=0.84) was significantly better than that of students from other regions (mean=3.68, SD=0.90).

4.2. Correlation Analysis

Table 1 shows the average values of psychological capital and social support (3.61 and 2.88, respectively). In the post-epidemic period, college students reported having less social support and more internal than external resources. The average values of psychological wellness and poor mental health were 3.81 and 1.81, respectively. In general, college students still generally maintain a more favorable mental state in the post-epidemic period.

Moreover, mental capital is positively correlated with psychological wellness ($r=0.65$, $p<0.01$) and negatively correlated with poor mental health ($r=-0.17$, $p<0.05$). Social support was also positively correlated with psychological wellness ($r=0.38$, $p<0.01$) and negatively correlated with poor mental health ($r=-0.17$, $p<0.05$).

Table 1 Correlation analysis of variables

Variable	Mean	SD	1.	2.	3.	4.
1. PC	3.61	0.64	-			
2. SS	2.88	0.56	0.39**	-		
3. PW	3.81	0.89	0.65**	0.38**	-	
4. PMH	1.81	0.74	-0.17*	-0.17*	-0.21**	-

Note. N=194. PC=psychological capital; SS=social support; PW=psychological wellness; PMH=poor mental health. *p<0.05; **p<0.01; ***p<0.001.

4.3. Hypothesis Testing

Table 2 shows the results that psychological capital positively predicts good mental health ($\beta=0.60$, $p<0.001$) and negatively predicts poor mental health ($\beta=-0.18$, $p<0.05$). Hypothesis 1 was supported. In addition, social support positively predicts psychological wellness ($\beta=0.35$, $p<0.001$) and negatively predicts poor mental health ($\beta=-0.14$, $p<0.05$). Hypothesis 2 was also supported.

Moreover, the interaction between psychological capital and social support negatively predicts psychological well-being ($\beta=-0.19$, $p<0.001$) and positively predicts poor mental health ($\beta=0.25$, $p<0.01$). Therefore, Hypothesis 3 was supported. See the interaction diagram shown in Figures 2 and 3. When social support is high, the impact of psychological capital on mental health will be weak, suggesting the existence of a substitution effect between the two variables. That is, when an individual has insufficient psychological capital, external social support can act as a resource supplement, to promote psychological wellness and prevent poor mental health.

Table 2 Hierarchical regression analysis of variables

Variable	PW				PMH			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Controls								
Gender	-0.05	-0.19**	-0.07	-0.06	-1.16*	-0.12	-0.15	-0.15*
Grade	-0.10	-0.09	-0.10	-0.12*	0.03	0.02	0.03	0.06
Student origin	-0.01	-0.03	-0.02	-0.02	-0.11	-0.10	-0.11	-0.11
Family location	-0.13	-0.25	-0.13	-0.10	0.22*	0.25**	0.22*	0.18*
Only child	0.01	0.02	0.00	-0.04	-0.07	-0.07	-0.06	0.00
Predictors								
PC	0.60***		0.53***	0.51***	-0.18*		-0.14	-0.11
SS		0.35***	0.15*	0.18**		-0.14*	-0.09	-0.12
Interaction								
PC×SS				-0.19**				0.25**
R^2	0.46	0.27	0.46	0.51	0.09	0.08	0.10	0.15
ΔR^2	0.31***	0.12***	0.02***	0.03***	0.03**	0.02*	0.01**	0.06***
F	26.09***	11.70***	24.04***	23.92***	3.01**	2.78*	2.79**	4.13***

Note. N=194. PC=psychological capital; SS=social support; PW=psychological wellness; PMH=poor mental health. *p<0.05; **p<0.01; ***p<0.001.

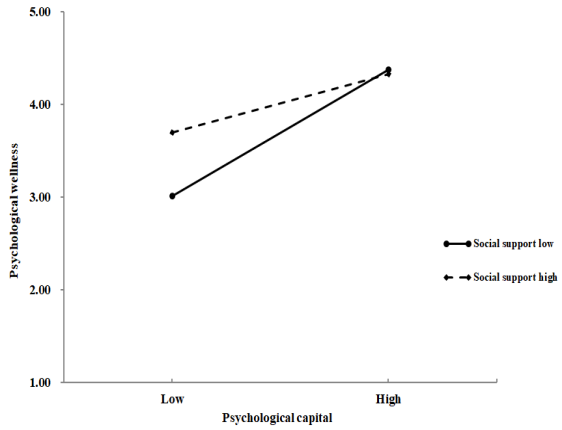

Figure 1 Interaction between PC and SS on PW

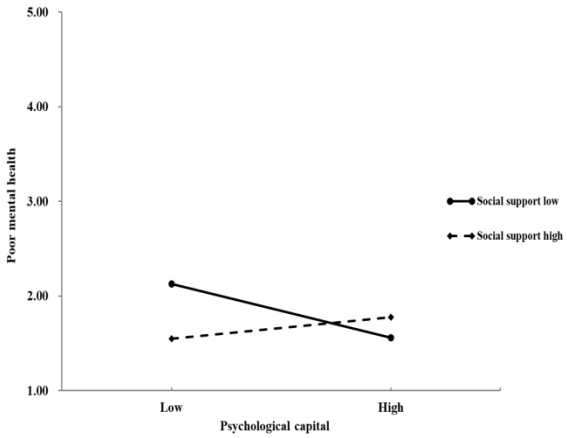

Figure 2 Interaction between PC and SS on PH

5. Conclusions and Recommendations

5.1. Conclusions

This study mainly examined factors that influence college students' mental health status in the post-epidemic period. Based on the results of the data analysis, the study produced the following findings.

First, in the post-epidemic period, college students have more psychological capital but less social support. Furthermore, college students are more likely to report psychological well-being and less distress. We infer that in the post-epidemic period, the domestic pandemic situation has abated. Therefore, psychological resources are not so heavily consumed, leaving individuals with more available psychological capital. In contrast, during the epidemic prevention stage, the implementation of health-protecting measures, such as restrictions on going out, large gatherings, and the flow of people between locations, reduced the opportunities for college students to obtain external resources. Thus, less social support was available. Due to the gradual control established over the epidemic, college students were able to maintain their psychological well-being.

Secondly, the psychological wellness of boys is significantly higher than that of girls, and the mental health status of local students was substantially better than that of students from other places. We speculate that in the post-epidemic period, the previous pandemic waves caused psychological harm and material loss, from which people are still slowly recovering. The men in this sample appear to be more psychologically resilient than women. Women's behavior tends to be more explicit than that of men when encountering psychological pressure. In addition, local students often have a better understanding of regional epidemic prevention measures and information. They are also more likely to have many relatives and friends in the area, so they have more available social support (external resources). Therefore, mental health status is likely to be better. In contrast, foreign students who

have left their hometowns are unfamiliar with the local environment. They may endure long periods of loneliness while studying away from home and anxiety that the epidemic may recur, delaying their return. Therefore, the mental health status of foreign students is likely to be poor.

Finally, psychological capital and social support can positively predict psychosocial well-being and negatively predict poor mental health. Thus, the individual psychological capital of college students and social support promote good mental health. In addition, the interaction between psychological capital and social support can also predict psychological well-being, demonstrating a substitution effect. When an individual's psychological capital is insufficient, social support can supplement to maintain good mental health. We believe that in the post-epidemic period, college students consume considerable psychological resources while confronting the stress caused by repeated and strict epidemic controls. In the long run, a shortage of internal resources will occur. At this time, if they can obtain social support, such as schoolteachers, classmates, friends, etc., they can properly supplement resources to alleviate the adverse impact of psychological pressure and continue to maintain good mental health.

5.2. Management Recommendations

This study proposes the following suggestions for universities and college students based on its findings:

5.2.1 Suggestions for Universities

First, schools should offer psychoeducational lectures addressing current the current status of the epidemic, prevention measures, and information about support and coping strategies. At the same time, the school can offer individual or group psychological counseling to attend to the mental health of each student. In addition, an online psychological consultation system can be established, or a secure letter box can be placed in common dormitory areas to facilitate contact between students and counselors or administration.

Secondly, the school can create a campus atmosphere that promotes positive energy and constructive behavior. The administration could provide more platforms for students to display their contributions and commend students who actively participate in campus epidemic prevention, thus increasing subjective sources of social support. Schools can offer anti-epidemic competitions to encourage students with material rewards. The school can also optimize the campus infrastructure, strengthen campus management, and provide guarantees of material support for students. Such strategies would increase tangible sources of social support. In addition, the school should monitor levels of psychological capital and social support. When one resource is in short supply, the other could be reinforced, especially for female students and those from outside the local area. Schools should monitor female students more closely, for example, by conducting psychological group communication activities on the dormitory floor, allowing them to vent in response to psychological pressure. In addition, schools also should provide targeted care for students from outside the local area, such as holding a homecoming exchange meeting, carrying out hometown cultural festival activities, or establishing WeChat or other communication groups in various common student areas to provide connection and exchange in daily life.

5.2.2 Suggestions for College Students

We recommend that college students attend carefully to their physical and mental health and ensure they obtain regular work and rest periods. College students should participate more in group activities, such as campus associations, student clubs, special interest classes, and other collective activities. They should communicate more frequently and directly with their teachers and classmates and take advantage of school-sponsored lectures or activities promoting psychological wellness. Furthermore, they should seek educational resources that develop stress management and coping skills to reduce psychological resource depletion.

Secondly, college students should engage with sources of social and psychological support provided by the school, such as psychological counseling channels and mental health assessments. Moreover, when college students perceive a lack of psychological capital, they should actively seek

external social support by participating in the school's mental health lectures or seeking support from psychology teachers or staff at the school's counseling center. Such steps would help them to maintain good mental health through appropriate supplementation of external resources.

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