

An Exploration of the Impact of Covid-19 on Students' Mental Health

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Abstract: The original pattern of college students' life state has been broken by the influence of COVID-19. The study and employment of college students were affected, which led to many mental health problems. The purpose of this study was to study the mental health status and counseling needs of Chinese college students, and to explore the range of students who should be concerned about the "epidemic era" and the coping strategies and methods of counseling. This quantitative study used a questionnaire that was most applicable to this study. The results of the study showed a high prevalence of anxiety, depression and interpersonal sensitivity problems among the student population. There is an urgent need to strengthen research and countermeasures for psychological problems, psychological crisis intervention, and mental health problems among college students.

Keywords: COVID-19; student' mental health

1. Introduction

Since the outbreak of the pandemic in early 2020, it has caused a great impact on the social economy and people's normal life ^[1]. This is a new disease with high infectivity, strong transmission capacity and high recurrence. Since its outbreak, it has spread in many countries and become an international public health emergency. Due to the abruptness and unpredictability of the epidemic, people were not psychologically prepared when the epidemic broke out ^[2]. According to the requirements of the national epidemic prevention and control, during the lockdown period, the public should be quarantined at home, students could not go to school, enterprises could not work normally, commercial activities could not be held, and shops could not operate. The daily life rhythm of the public was severely halted, and the rhythm of work and life was significantly changed ^[3]. The information caused by the epidemic ferments on the Internet, resulting in information overload, causing huge psychological pressure on the public, resulting in depression, panic, depression, anxiety and other negative emotions ^[4-5].

During the pandemic, college students can't return to school normally for classes, senior students can't return to school normally to complete their graduation thesis and graduation defense, and they can't find jobs normally in the graduation season, which has greatly changed their study and life. College students are a relatively vulnerable group in terms of psychological endurance. The sudden outbreak of the epidemic has completely overturned the life of college students. Under the environment of long-term containment and suppression of normal life, it is easy to cause a series of mental health problems ^[6-8]. H. Selye, a famous Canadian doctor, founded the theory of stress. He believes that no matter the stress is caused by trauma, disease, cold or hot or psychological conflict, fear and other reasons, the body responds to it in a special mode, which is called "universal adaptation syndrome". Later, psychologists intervened in the study of stress. According to the theory of psychological stress in psychology, when an individual encounters a crisis, he will produce a series of psychological and emotional physiological stress responses based on the original cognition ^[9].

A pandemic is a sudden stressful event that will have a cascading psychological impact on students and other groups, leaving people in a negative emotional state and exhibiting abnormal behaviors such as tantrums, running away, or withdrawing. Post-traumatic stress reactions can still occur even after recovery from an epidemic ^[10]. Emotions without timely mediation and grooming can easily lead to mental health problems, and in serious cases may lead to mental illness. College students in a long-term physiological stress state are prone to post-traumatic stress, anxiety, and other psychological problems ^[11].

The purpose of this study is to conduct a sample survey on the mental health of college students in a university in China, to understand the impact of the novel coronavirus epidemic on the mental health of college students in a timely manner, to track the mental health of college students after they return to school, to provide timely psychological intervention and guidance for students affected by mental health, and to find countermeasures. Timely adjust the mental health of college students to restore them to a normal psychological state.

2. Methods

A quantitative descriptive research design was used to address the purpose of the study. The purpose of this study was to understand the mental health status of college students in a timely manner, and to assess the mental health status of college students in a comprehensive manner by taking into account the influence of their family factors, and to adopt appropriate psychological counseling strategies.

A convenience sampling method was used in this study. One hundred and eighty students from a university in China participated in this study. These 180 participants included 90 male and 90 female students. Their ages were around 20 years old.

The instrument used to collect data was a printed questionnaire. The self-rated symptom scale SCL90, developed by L.R. Erogatis (1975), was used to investigate the mental health of Chinese university students. The SCL90 is widely used in the assessment of students' mental health and can better reflect the severity and changes in students' self-rated mental health levels. The questionnaire was divided into two parts: the first part was background information (age, gender, grade level, and whether or not the student was an only child); the second part was a 90-item symptom self-assessment scale, including feelings, emotions, thinking, consciousness, behavior, habits, interpersonal relationships, diet, and sleep, etc., with 10 factors to reflect 10 aspects of psychological symptoms [12].

3. Results and Discussion

Among the university students surveyed, about 5% were found to have severe psychological stress reactions after the COVID-19 outbreak, and some of them had some psychological stress indicators near the critical point, requiring prolonged psychological counseling and stress release.

The SCL-90 study showed that the factor scores and overall mean scores were statistically significant ($p < 0.05$) compared to the national norm, especially for the interpersonal sensitivity, terror and anxiety factors ($p < 0.01$). The total factor scores of college students were ($120.92 > 0.80$), and those with scores greater than or equal to 160 were abnormal scores, accounting for 16% of the surveyed population. In the test of the number of positive factors, those with positive factors greater than or equal to 43 accounted for 15% and those with positive factors of psychological symptoms accounted for 37%.

Table 1: Analysis results of SCL-90 single sample t test for university students during the COVID-19 outbreak

Name	Minimum	maximum	Mean value	Standard deviation	t
Somatization	1	3	1.201	0.347	50.58
Forced	1	4	1.78	0.698	35.965
Sensitive	1	4	1.53	0.586	37.078
interpersonal relationship					
Depression	1	3.9	1.473	0.58	36.678
Anxiety	1	3.21	1.342	0.501	39.303
Hostile	1	3.17	1.32	0.456	41.687
Terrorist	1	3.01	1.226	0.407	43.972
Paranoid	1	2.85	1.303	0.435	43.852
Psychosis	1	4.01	1.321	0.503	38.273
Other	1	3.28	1.345	0.473	41.57

* $p < 0.05$ ** $p < 0.01$

As can be seen from the data in Table 1, during the epidemic period, various factors of college

students showed obvious differences, while compulsion, interpersonal sensitivity and depression had strong obvious, factor scores were as high as 4 points, psychological symptoms were positive, with a moderate-to-moderate tendency. From the average point of view, the obsessive-compulsive emotion is the highest, indicating that college students have a higher degree of oppression during the epidemic and have an anti-oppression emotional tendency.

Table 2: Severity distribution of SCL-90 scores of college students during COVID-19 [n (%)]

Factor	0<i<1	1<i<2	2<i<3	3<i<4	4<i<5	Total (>2)
Somatization	111(51.1)	95(44.6)	9(4.1)	0	0	9(4.1)
Forced Sensitive interpersonal relationship	41(18.5)	118(55.2)	40(19.2)	15(7.2)	0	56(26.1)
Depression	65(29.2)	116(53.2)	33(14.8)	5(2.1)	0	37(17.3)
Anxiety	64(29.3)	118(55.2)	27(12.5)	5(2.3)	0	32(14.8)
Hostile	85(39)	103(48.6)	21(9.9)	3(1.5)	0	24(11.3)
Terrorist	96(45)	103(47.8)	14(6.6)	2(0.6)	0	15(7.1)
Paranoid	123(57)	78(36.5)	12(5.5)	0	0	12(5.5)
Psychosis	103(47.3)	97(45.5)	15(7.1)	0	0	15(7.1)
Other	98(46.1)	97(45.7)	14(6.3)	4(1.8)	0	18(8.3)
	88(41.3)	109(51.1)	13(6.1)	3(1.5)	0	16(7.3)

Table 2 shows the results of the severity of the scores of those who were tested with positive results with COVID. In the results, it was found that those with moderate and mild symptoms were concentrated on the factors of obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, and psychosis, with obsessive-compulsive disorder being the most pronounced and the most numerous. In the comparison of the various factors, there were also significant differences between the factors, with the smallest differences between low and high levels of obsessive-compulsive disorder and psychosis, indicating that the subjects were prone to the characteristics and acute symptoms of compulsive behavior. It can also be observed that students' anxiety and interpersonal sensitivity were also very pronounced, showing a trend towards moderate and high levels.

Table 3: Results of binary Logistic regression analysis of college students during COVID-19

Factors	Coefficient of regression	Standard value	Z value	Wald	P value	OR value	OR value(95%CI)
Gender	0.102	0.33	0.311	0.097	0.756	1.107	0.581 - 2.116
Type of family	-0.233	0.289	-0.808	0.653	0.417	0.795	0.449 - 1.395
Intercept	0.727	0.786	0.926	0.856	0.355	2.08	0.444 - 9.652

Table 3 shows the results derived from Table 2. Further analysis of the factors affecting students' mental health was conducted. The results of the data were obtained after analyzing the binary logistic regression analysis model with the gender of the family and the student as independent variables and the psychological factors of the psychological abnormalities as dependent variables. From the results, it can be seen that the gender regression coefficient was 0.102, OR was 1.107, and OR (95% CI) was 0.581 to 2.116, indicating that gender has an influence on the psychological abnormalities of college students, who are prone to psychological conditions such as obsession and depression. In particular, in this result, the factor curves are all less than 2, indicating that families with more females or only one child are prone to positive factors of psychological abnormalities, and students from such families are prone to mental health conditions during the pandemic.

4. Conclusion

By studying the psychological status of college students using the SCL90 and analyzing students with mild, moderate, and severe psychological problems by combining the data results and interviews, it was found that the COVID-19 had a more serious impact on the mental health of college students.

Students tended to become impatient, irritable, and irritable. Even if the pandemic was alleviated at a later stage, students were still prone to strong stress reactions in the short term after the embargo was lifted.

Although many students can adjust to these negative emotions in their own way and reduce the negative impact of their emotions, everyone has a different personality and different ability to adjust to their emotions. As a result, some people can quickly resolve their negative emotions through a number of methods, while others find it difficult. The accumulation of these negative emotions is likely to have

a negative impact on their learning and life.

Schools can set up separate student counseling rooms when counseling students. At the same time, schools should create a good stress-relieving environment for students, communicate with their parents and keep track of their psychological status. By inviting experts to popularize the knowledge of fighting the epidemic, students can learn to accept the epidemic, learn to adapt to the environment of the epidemic, learn the skills and methods of epidemic prevention, and let go of the fear and stress of the epidemic. In addition, schools can specifically address such mental health problems of students in terms of emotion identification and emotion regulation and use the facilities of scientific counseling to design a scientific counseling process in order to adjust the negative emotions of college students and improve their mental health.

References

- [1] Liu Y., Wu S., Li Y. *Study on the status of psychological symptoms in Chinese population based on SCL-90* [J]. *Chinese Journal of Mental Health*, 2018,32 (005): 437-441.
- [2] Wang X., Wang X., Ma Hong. *Mental Health Rating Scale Manual: Updated edition* [M]. Beijing: China Mental Health Journal, 1999.
- [3] Sengupta S, Mugde S, Sharma G. *An Exploration of Impact of COVID 19 on mental health -Analysis of tweets using Natural Language Processing techniques*. Cold Spring Harbor Laboratory Press, 2020.
- [4] Tang L., Li H., Yang C. et al. *Analysis of Influencing Factors of perimenopausal syndrome in women in Luzhou City by disordered multi-classification logistic regression* [J]. *Chinese Journal of Health Statistics*, 2019, 36 (4): 511-3.
- [5] Yi L., Wang Z., Jiang Z. et al. *Research progress of psychological intervention in public health emergencies* [J]. *China Public Health*, 2010, 26 (7): 929-30. (in Chinese)
- [6] Sun Z. *The Application of Positive Psychology in the Mental Health Education of College Students* [J]. *Journal of Zaozhuang University*, 2019 (3): 131-5.
- [7] Zhu Y. *Analysis on the Path of College Students' Mental Health Education under the Environment of New Media* [J]. *Media Observation*, 2016 (5): 34-6.
- [8] Pei X. *Principles and Strategies for Constructing three-dimensional Integrated Vision of Mental Health Education for College Students* [J]. *Chinese School Health*, 2015, 36 (7): 1097-100.
- [9] Yang C., Wang S.P., Hao Y.H. *Public Health Emergency Response Technology Series: Technical Guidelines for Emergency Response. The first edition* [M]. Beijing: People's Medical Publishing House, 2014: 71.
- [10] Tan X.D. *Prevention and Control of Emergent Public Health Events* [M]. Wuhan: Hubei Health Publishing House, 2003: 45.
- [11] Shelley E. *Health Psychology* [M]. Beijing: People's Medical Publishing House, 2006:167-9. (In Chinese)
- [12] Zhang L., Li B. *A study on the characteristics of college students' Psychological Stress coping styles* [J]. *Psychological Science*, 2005(1): 36-41.