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Study on the Psychological Status and Influencing Factors of College Students in "Post-epidemic Era"

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Abstract: The purpose of this paper is to understand the psychological status and influencing factors of college students in the post-epidemic era. Through questionnaire survey and data statistics, the online survey of college students was conducted, and the statistical software of SPSS 26.0 was used to analyze the data. The results showed that among the 1,268 students surveyed, 316 were at high risk of mental illness, among which the living conditions, family relationships, teacher-student relationships, majors studied, academic pressure and the frequency of dreams related to the epidemic in the last month were "post-epidemic era".

1. Introduction

Psychological problems among college students have become common in recent years, and have worsened with the arrival of the COVID-19 pandemic. The psychological problems of college students in the post-epidemic era are different, and the college students are in the middle and late stages of youth development, which is characterized by the transformation stage from external self to internal self, and it is easy to produce psychological disorders and psychosomatic diseases. This study focuses on the investigation of the mental health status of college students after the epidemic has entered the normal prevention and control, and analyzes the influencing factors, so as to understand the psychological pressure caused by the novel coronavirus pneumonia on college students. With the coming of autumn and winter season, it is helpful for universities and researchers to develop psychological intervention measures for college students and improve the mental health level of college students.

2. Research Object and Research Method

2.1. Research Objects

Psychological status and influencing factors of college students in the post-epidemic era.

2.2. Research Methods

2.2.1. Questionnaire Survey

Through the questionnaire star design questionnaire, the survey of college students currently studying in universities, including junior college, undergraduate, graduate; this questionnaire was conducted online for 7 days (June 12 -- June 19, 2020). A total of 1329 questionnaires were received, and 1268 valid questionnaires were received, with an effective rate of 95.4%.

It consists of two items: (1) general information questionnaire; (2) Kessler K10 Scale of Mental Illness. The questionnaire was distributed by Wechat group, QQ group, etc., and respondents could only answer with informed consent.

2.2.2. Mathematical Statistics

The spss26 statistical software package was used for statistical processing. Frequency was used to analyze general demographic characteristics, Mann-Whitney U test was used for fixed type variables, and Spearman correlation was used to analyze the differences between variables and K10 for ordinal type variables. Indicators with statistically significant differences in univariate analysis were taken as independent variables and assigned values respectively, and K10 scale scores were taken as dependent variables. Statistical tests were all two-tailed tests, and $P<0.05$ was considered statistically significant.

2.2.3. Quality Control

Use the same IP address and answer time. The same IP address can be answered only once. Questionnaires with answers less than 100 seconds and obvious abnormal answers were excluded to ensure the authenticity and reliability of the data.

3. Results

3.1. Demographic Characteristics of Survey Respondents

The study of demography plays an important role in the development of social economy and scientific research. It is widely used in the collection, sorting, evaluation and analysis of data. Among the valid data of this survey, there were 499 male students (39.35%) and 769 female students (60.65%). Age: 58 (4.57%) were under 18 years old, 991 (78.15%) were between 18 and 20 years old, 14.75% were between 21 and 23 years old, 32 (2.52%) were over 24 years old. Science and engineering 219 (17.23%), arts 189 (14.91%), sports 209 (16.48%), arts 218 (17.19%), medicine 433 (34.15%); 55 students (4.34%) were junior college students, 1183 students (93.3%) were undergraduate students, and 30 students (2.37%) were graduate students. 81 people (6.39%) lived alone, 1187 people (93.61%) did not live alone; There were 111 single parents (8.75%) and 1157 non-single parents (91.25%); Family economy: good 33 people (2.6%), good 131 people (10.33%), average 875 people (69.01%), poor 179 people (14.12%), poor 50 people (3.94%); Family relationship: good 501 people (39.51%), good 467 people (36.83%), average 257 people (20.27%), poor 30 people (2.37%), poor 13 people (1.03%); Friends: good 460 people (36.28%), good 575 people (45.35%), average 225 people (17.74%), poor 3 people (0.24%), poor 5 people (0.39%); The teacher-student relationship: good 275 (21.69%), good 433 (34.15%), average 539 (42.51%), poor 16 (1.26%), poor 5 (0.39%); Academic pressure: 201 people (15.85%) were very high, 1031 people (81.31%) were average, 18 people (1.42%) were very low, and 18 people (1.42%) had no pressure; Delayed opening of colleges and universities: no impact on 179 people (14.12%),

very little impact on 125 people (9.86%), average impact on 713 people (56.23%), very big impact on 251 people (19.79%); The time spent on daily monitoring of the epidemic: 835 people (65.85%) for less than 1 hour, 387 people (30.52%) for 1-2 hours, 26 people (2.05%) for 3-4 hours, and 20 people (1.58%) for more than 5 hours; Regarding media coverage of the epidemic: 150 people (11.83%) were very concerned, 680 people (53.63%) were relatively concerned, 406 people (32.02%) were not concerned, 32 people (2.52%) were not concerned; Emotional control during the epidemic: 11 (0.87%) were very difficult, 67 (5.28%) were difficult, 157 (12.38%) were difficult, 1033 (81.47%) were not difficult; Frequency of dreams related to the epidemic in the past month: 14 people (1.1%) for more than 5 times, 23 people (1.81%) for 3-5 times, 152 people (11.99%) for 1-2 times, and 1079 people (85.09%) for no dreams. Living status under the current epidemic: 270 people (21.29 percent) felt relaxed, 127 people (10.02 percent) felt nervous and worried, and 871 people (68.69 percent) felt calm.

Table 1: Psychological symptom survey of all factors in K10 scale [n (%), n=1268]

Factor	All time frequency (percentage)	Most time frequency (percentage)	Some time frequency (percentage)	Small part time frequency (percentage)	No frequency (percentage)
Tired	3(0.24%)	92(7.26%)	280(22.08%)	377(29.73%)	516(40.69%)
Nervous	3(0.24%)	52(4.1%)	266(20.98%)	426(33.6%)	521(41.09%)
Unable to calm down	1(0.08%)	45(3.55%)	179(14.12%)	355(28%)	688(54.26%)
Despair	2(0.16%)	34(2.68%)	133(10.49%)	223(17.59%)	876(69.09%)
Agitated	1(0.08%)	64(5.05%)	242(19.09%)	450(35.49%)	511(40.3%)
Fidget	3(0.24%)	45(3.55%)	188(14.83%)	343(27.05%)	689(54.34%)
Feeling down	7(0.55%)	59(4.65%)	235(18.53%)	474(37.38%)	493(38.88%)
Work hard	6(0.47%)	57(4.5%)	220(17.35%)	383(30.21%)	602(47.48%)
Unhappy	4(0.32%)	58(4.57%)	189(14.91%)	324(25.55%)	693(54.65%)
Valueless	9(0.71%)	64(5.05%)	175(13.8%)	288(22.71%)	732(57.73%)

3.2. Survey Subjects Kessler K10 Mental Illness Scale Score

The Kessler K10 Mental Illness Scale contains 10 items that measure the frequency of symptoms related to mental health conditions over the past four weeks. As shown in Table 1 below. The reliability and validity test conducted by domestic scholars on the Chinese version of K10 shows that: Kappa consistency test, the index was 0.703($P < 0.001$), Kronbach α coefficient was 0.8011($P < 0.001$), and the half-reliability was 0.7076($P < 0.001$). [1]The results showed that the second-order two-factor model was the most ideal and the model fit was acceptable. The K10 scale is divided into five levels according to the frequency of symptoms: "0" (none), "1" (a small part of the time), "2" (some time), "3" (most of the time), and "4" (all of the time). The total score of the scale ranges from 0 to 40. The K10 scale ranks an individual's mental health status into four levels: 0 to 5 (level 1, low risk of mental disorders), 6 to 11 (level 2, low risk of mental disorders), 12 to 19 (level 3, high risk of mental disorders), and 20 to 40 (level 4, high risk of mental disorders) [2]. According to mathematical statistics, among the 1,268 students surveyed, 169 had a high risk of mental illness, and 147 had a high risk of mental illness. The combined data of the two accounted for 24.9% of the total number of the surveyed students. It can be seen from the data that 1/4 of the students had a high risk of mental illness during the normal phase of COVID-19 prevention and control.

Table 2: Univariate Mann-Whitney U test of college students suffering from mental illness (n=1268)

	N	Rank average	Z	P
Gender	Man =499	603.21	-2.473	0.013
	Woman =769	654.80		
Whether				
living alone	YES=81	659.64	-0.644	0.519
	NO=1187	632.78		
Single parent	YES=111	638.95	-0.135	0.892
	NO=1127	634.07		

Table 3: Single factor Spearman correlation analysis of college students suffering from mental illness

Factor	Rs	P
Age	0.019	0.510
Grade	0.083	0.003
Major	-0.103	<0.001
Academic degree	0.089	0.001
Family financial situation	-0.163	<0.001
Family relationship	-0.257	<0.001
Friends	-0.243	<0.001
Teacher-student relationship	-0.183	<0.001
Academic pressure	0.196	<0.001
Delayed start of college	0.311	<0.001
The epidemic level of current residence	0.039	0.162
Pay attention to epidemic tim	0.006	0.832
Attention to media coverage of epidemic situation	0.035	0.214
Difficulty in controlling one's emotions during the epidemic	0.425	<0.001
Frequency of dreams related to epidemic situation in the last month	0.264	<0.001
Current state of life	0.342	<0.001

3.3. Univariate Analysis of the Risk of Mental Illness among College Students in the Post-Epidemic Era

Man-whitney U test was used for fixed type variables, and Spearman correlation was used to analyze the differences between variables and K10 for ordered type variables. The results are as follows (Table 2 and Table 3). The results showed that there was no significant correlation between K10 score and 6 factors, including whether they lived alone, age, single parent, time to pay attention to the epidemic every day, and attention to media reports on the epidemic (P>0.05). Thirteen factors, such as gender, grade, major, education background, family economic situation, family relationship, friend relationship, teacher-student relationship, academic pressure, delayed opening of colleges and universities, emotional control during the epidemic, frequency of epidemic-related dreams in the past month, and current life status, were significantly correlated with K10 score (P<0.05).

Table 4: "Post-epidemic Era" evaluation of influencing factors of college students' risk of mental illness

Factor	Evaluation				
Age	0= Men	1= Women			
Grade	1=Grade One	2=Grade Two	3=Grade Three	4= Grade Four	5=Grade Five
Major category	1= science	2= liberal arts	3= Sports	4= Art category	5=Medical category
Academic degree	1= specialist	2= undergraduate	3=Graduate students		
Family financial situation	0= difference	1= poor	2= average	3= better	4= good
Family relationship	0= difference	1= poor	2= average	3= better	4= good
Friends	0= difference	1= poor	2= average	3= better	4= good
Teacher-student relationship	0= difference	1= poor	2= average	3= better	4= good
Academic pressure	0=no pressure	1= very small	2= average	3= Very large	
Postpone the opening of colleges and universities	0= no effect	1= very small	2= average	3= Very large	
Difficulty in controlling one's emotions during the epidemic	0=not difficult	1=more difficult	2= difficulty	3=Very difficult	
Frequency of dreams related to epidemic situation in the last month	0= none	1=1-2 times	2=3-4 times	3=5times or more	
Current state of life	0= relaxed	1=calm as usual	2= nervous and worried		

Table 5: Multivariate analysis of the risk of mental illness among college students in "post-epidemic era"

	Non-standardized coefficient		t	p	OR	95% confidence interval	
Factor	B	standard error				lower limit	upper limit
Constant	3.230	1.764	1.832	0.067		-0.299	6.690
Difficulty of emotional control during epidemic period	3.888	0.324	11.986	0.000	10.064	5.917	17.116
Living condition	2.347	0.347	6.771	0.000	7.457	4.911	11.323
Family relations	-1.001	0.214	-4.689	0.000	0.366	0.198	0.677
Frequency of dreams related to epidemic situation in the past month	2.184	0.360	6.071	0.000	5.042	1.351	18.809
Impact of school extension	0.963	0.203	4.744	0.000	7.802	4.367	13.941
Teacher-student relationship	-0.897	0.226	-3.829	0.000	0.565	0.382	0.836
Major	-0.466	0.117	-3.806	0.000	0.626	0.742	0.830
Academic pressure	1.327	0.387	3.431	0.001	6.230	1.395	27.814

3.4. Multivariate Analysis of the Risk of Mental Illness among College Students in the Post-Epidemic Era

The score of K10 was taken as the dependent variable, and the variables with statistically significant differences in univariate analysis were taken as independent variables. Multiple stepwise regression was conducted, and the results were as follows (Table 4 and Table 5). During the epidemic period, emotional control difficulty, living status, family relationship, frequency of dreams related to the epidemic in the past month, the influence of delayed opening of school, teacher-student relationship, major, education background and academic pressure were the influencing factors for college students to suffer from mental illness.

4. Discussion

In this study, Kessler K10 mental Illness Scale was used to investigate the mental health status of college students in the post-COVID-19 era. The data showed that among the 1,268 students surveyed, 169 had a high risk of mental illness and 147 had a high risk of mental illness, accounting for 24.9 percent of the total. Through literature review, it was found that the risk of college students suffering from mental illness was 71.3% at the early stage of the epidemic[3]. Under normal circumstances, 3.97% of college students suffer from mental illness[4]. By comparing the proportion of college students suffering from mental illness at the early stage of the epidemic and under normal conditions, it was found that although the proportion of mental illness was lower after the epidemic entered into normal prevention and control, it was still much higher than the normal situation. It shows that the psychological condition of college students in the face of the epidemic has been greatly impacted and affected, and the epidemic has a relatively lasting negative impact on the psychological condition of college students. Now it has entered the "post-epidemic era", all colleges and universities across the country have resumed classes, but the autumn and winter season is coming again, the incubation period of the virus is increasing, the epidemic in China is generally sporadic, and some areas have clusters of sporadic cases. Parents and schools should pay attention to the continuous impact of COVID-19 on the psychological condition of college students, and take necessary care and psychological counseling. Adjust college students' negative emotions in time.

According to the study, the delay of the beginning of school has a great impact on the psychological status of college students, which is mainly reflected in the first place, the uncertainty of the start of school makes students lose their goals, and the second place, the delay of the beginning of school makes students have to stay at home. Family factors, activity space and academic pressure all have a certain impact on the psychological status of students, which brings challenges to the deployment of school work in the future. All schools should make plans to delay the opening of the school. During the epidemic period, the more difficult the emotional control of students, the higher the K10 score, the more likely to suffer from mental illness, which shows that in the "post-epidemic era" there are some students psychological and emotional instability, the more difficult to control their emotions, the more likely to cause mental illness. Therefore, we should pay attention to the adjustment and control of students' emotions. The current living situation objectively reflects the psychological condition of students. According to the survey results, the more nervous and worried students are, the higher their K10 score is. Family relationship is closely related to students' psychological condition[5]. This study also found that students with better family relationships had lower K10 scores, and students with worse family relationships had higher K10 scores. During the epidemic period, the mobility of all groups is reduced and most of them live at home. Therefore, the quality of family relationship has a great impact on people's psychological condition, which also shows that good family relationship is conducive to mental health. Therefore, school teachers should pay more attention to students with poor family relations, timely grasp his

psychological condition, and do a good job in intervention treatment. The frequency of dreams related to the epidemic in the past month was significantly correlated with the psychological status of college students. The higher the dream frequency, the worse the psychological status of students. Studies have shown that there is a continuum of mental activity in the brain, and that nighttime dreams can both reflect activities in the past and influence events in the future[6]. The higher the frequency of dreams, the worse the quality of sleep[3]. This indicates that the outbreak of the novel coronavirus has a certain negative impact on the sleep of college students, so that it affects their psychological status. There is a negative correlation between the teacher-student relationship and K10 score, indicating that students with worse teacher-student relationship have higher K10 score. In the "post-epidemic era", the mobility and communication opportunities of teachers and students are reduced, which is not conducive to the adjustment of students' psychological state, resulting in the psychological pressure of students with poor relationship between teachers and students will be greater. Academic pressure is positively correlated with K10 score, indicating that students with high academic pressure have relatively higher K10 score and are more likely to suffer from mental illness. Studies have shown that students facing the double pressure of the epidemic and their studies are more likely to breed bad emotions[7]. There are significant differences in K10 scores among students of different majors. By comparing medical majors and non-medical majors, it is found that non-medical students have poor mental adjustment ability in the face of the epidemic, which will cause them to fall into excessive stress and have a higher K10 score.

5. Conclusion

The research results show that the psychological status of college students in the post-COVID-19 era needs to be closely paid to. Among them, life status, family relationship, frequency of epidemic-related dreams in the past month, teacher-student relationship, major, academic pressure, delayed opening of colleges and universities, and emotional control during the epidemic are important factors affecting the psychological status of college students. It also reminds parents and colleges to give help and care to such students, timely counseling students psychological problems, rid of bad emotions.

Acknowledgments

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