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Psychological and Behavioral Consequences of the COVID-19 Pandemic Among College Students in China: A Multiregional Cross-Sectional Analysis of Cognitive Perceptions, Emotional Responses, and Adaptive Behaviors

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Abstract

The outbreak of Coronavirus Disease 2019 (COVID-19) in late 2019, originating in Wuhan City, Hubei Province, rapidly evolved into a global public health emergency. Beyond its direct physiological consequences, the pandemic has exerted profound psychological and behavioral impacts on individuals and communities. In particular, negative emotional responses, heightened anxiety, and panic-related behaviors—often intensified by cultural differences, social stigma, and misinformation—have, in many cases, posed challenges comparable to or exceeding those of the disease itself. This study investigates the psychological impacts and behavioral effects of the COVID-19 epidemic on college students in China, a population especially vulnerable to prolonged social isolation, academic disruption, and uncertainty about the future. Using purpose-designed questionnaires, an online cross-sectional survey was conducted among 3,965 college students randomly selected from six universities located in Shanghai Municipality, Anhui Province, and Guangxi Province. The questionnaire encompassed demographic characteristics, students' overall cognitive understanding of the COVID-19 epidemic, and a range of psychological and behavioral responses associated with the outbreak. The findings reveal a high level of overall cognitive awareness of the epidemic among respondents, with a correct cognition rate of 95.7%. Despite this high level of awareness, the psychological and behavioral consequences of the epidemic were pronounced. More than half of the surveyed students (56.3%) reported experiencing panic or heightened anxiety, while nearly 60% indicated substantial changes in their daily behaviors, including sleep patterns, social interaction, and study routines. Moreover, statistically significant differences in psychological responses and behavioral adaptations were

observed across students from different regions, personality types, and baseline psychological health statuses ($P < 0.01$).

In particular, students who were introverted, emotionally unstable, or who reported poorer psychological health, as well as those residing in areas more severely affected by the epidemic, demonstrated higher levels of psychological distress and maladaptive behavioral responses. These findings underscore the necessity of integrating mental health monitoring and targeted psychological interventions into public health emergency responses. Special attention should be directed toward vulnerable subgroups of college students to mitigate the long-term psychological consequences of large-scale health crises and to enhance their resilience in the face of future societal disruptions.

Citation

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1. Introduction

The course of human development is a history of fighting against disease. The disease, known as the novel coronavirus disease 2019 (COVID-19), broke out at the end of 2019 and it spread rapidly in China and swept around the world [1]. A notice on the official website of the National Health Commission of the People's Republic of China shows that a total of 4634 deaths and 82,960 confirmed cases had been reported in 31 provinces (including autonomous regions and municipalities directly under Central Government control) in mainland China by 18 May 2020 [2]. As a major public health emergency with the greatest difficulty in prevention and control since the founding of the People's Republic of China, the COVID-19 epidemic is mainly characterised by high infectivity, a large population affected, and strong concealment. Moreover, it has imposed unprecedented pressures on the Chinese Government and the public [3]. At the beginning of the epidemic outbreak, 31 provincial-level administrative regions in mainland China initiated first-level responses to this major public health emergency [4]. Different attitudes to the epidemic arising from cultural differences or certain prejudices are more threatening than the epidemic itself, which brings not only the threats of death and illness but also unbearable psychological stress and panic-like behaviours as a result of its high infectivity. It is not only China but also other countries and regions in the world that have been affected by the epidemic [5]. The continuous spread of the epidemic, increasingly strict quarantine measures, and postponement of new semesters in universities, secondary schools, and primary schools constantly affect the psychological endurance of college students. Research into on psychological effects of the epidemic on the public, medical care personnel, children, and the elderly has been constantly updated [6], while systematic studies of the psychological and behavioural effects on college students during the spread of the epidemic should be conducted.

Since the outbreak of the COVID-19 epidemic, most college students, like other Chinese citizens, have voluntarily stayed at home and strictly followed the joint prevention and control system set by the government. So far, more college students in China are still studying on-line from home, except for medical college students as well as graduates and postgraduates from some universities. In this study, 3,965 students from six universities in Shanghai City, Anhui Province and Guangxi Province in mainland China were randomly selected for on-line tests through purpose-made questionnaires. These contained questions about: demographic data, overall cognition of the COVID-19 epidemic, and psychological and behavioural effects of the epidemic on college students. Through survey and analysis, the authors aim to answer the question: what is the psychological status of college students who have been at home for a long time to prevent the COVID-19 epidemic? Can they actively and effectively deal with such a socially stressful event? How can we give appropriate support and help at the right time and guide them to cope with, and gain experience from, all kinds of social crises and setbacks in life?

2 Objective and methods

2.1 Study population and sample

In March 2020, a random sample survey was performed on 3965 students from six universities. The universities were East China University of Science and Technology and Shanghai Customs College in Shanghai City, Anhui University of Technology and Fuyang Normal University in Anhui Province, and Guilin Medical University and Guilin University of Technology in Guangxi Province. A total of 3965 college students were surveyed on-line using a questionnaire, and the recovery efficiency was 100%, among which males (1895) and females (2070) separately accounted for 47.8% and 52.2% of all returns. There were 2817 (71.0%) college students from the area most severely affected by the epidemic (two or more cases per county) and 1148 (30.0%) from those areas less badly affected (one or no case per county), respectively. Furthermore, 2367 (59.7%), 1455 (36.7%), and 143 (3.6%) college students thought they had good, general, and poor psychological health, respectively. The numbers of college students with four personality types, *i.e.* choleric (extroverted and emotionally unstable), sanguine (extroverted and emotionally stable), phlegmatic (introverted and emotionally stable), and melancholic (introverted and emotionally unstable) temperaments were 682 (17.2%), 1289 (32.5%), 1459 (36.8%), and 535 (13.5%), respectively.

2.2 Study methods

The purpose-made questionnaires used in this research were mainly designed in accordance with the Guidelines for Emergency Psychological Crisis Intervention on the COVID-19 Epidemic [7] released by the National Health Commission of the People's Republic of China. This study mainly analysed how college students cope with psychological and behavioural effects of, and overall cognition about, the epidemic. In the pre-survey, through testing, Cronbach's α-coefficient for the questionnaires was 0.778, indicating high reliability and the construct validity KMO = 0.840, exceeding 0.700, suggesting good construct validity of the questionnaires. The class counsellors of the surveyed college students were asked to supervise the questionnaires. Finally, the questionnaires were distributed on-line, investigated on-line, and completed anonymously.

2.3 Data analysis

On the one hand, statistical analysis was conducted by using SPSS 23.0 quantitative analysis software. The main influencing factors of the COVID-19 epidemic on the psychology and behaviours of college students were analysed based on the chi-squared test, variance analysis, Pearson's correlation, standard deviation, and single-factor analysis. On the other hand, descriptive statistics and analysis were applied to pertinent data by using statistical functions in MS-Excel® software.

2.4 Ethical considerations

The ethics committee of Guilin Medical University approved this study. All participants voluntarily gave their informed consent to participate in the study after being informed as to the purpose of the study. The procedures of this study complied with the provisions of the Declaration of Helsinki regarding research on human participants.

3 Results

3.1 General situation

The survey results demonstrate that the overall cognition level of the college students about the COVID-19 epidemic reached 95.7%. More than 98% of them believe that the epidemic can be controlled, that the government can control the epidemic, and they support the prevention and control measures implemented by the government (Table 1).

Table 1 Overall cognition of college students on the COVID-19 epidemic

Item	Believing the epidemic can be controlled		Panic is normal		Believing the government can control the epidemic		Supporting the prevention and control measures of the government		Satisfied with information released by the government		Satisfied with prevention and control performances of the government	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No

Number	3,903	62	3,839	126	3,898	67	3,906	59	3,553	412	3,664	301
Percentage/ %	98.4	1.6	96.8	3.2	98.3	1.7	98.5	1.5	89.6	10.4	92.4	7.6

The survey results show that since the spread of the COVID-19 epidemic, 56.3% of college students are panic, 33.8% have psychological states, such as anxiety, fear, worry, and nervousness, and 8.9% show undesirable tendencies, such as world-weariness, disappointment, and depression. In addition, 31.7% of college students consider that the InterNet aggravates their sense of personal panic, while 13.6% of them assert that their psychological endurance has decreased (Table 2).

Table 2 Psychological impacts of the COVID-19 epidemic on college students

Item	Panic or not		Fear, worried, nervous, and anxious		World-weary, disappointed, and depressed		InterNet increasing panic		Decreasing psychological endurance	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Number	2,232	1,733	1,340	2,625	353	3,612	1,257	2,708	3,553	412
Percentage/ %	56.3	43.4	33.8	66.2	8.9	91.1	31.7	68.3	13.6	86.4

As shown in the survey results, during the epidemic, 51.2% of college students are so distracted that they can hardly concentrate on anything and 41.3% of them are afraid of being in contact with people from areas most severely affected by the epidemic. Moreover, 85.7% of college students spend more time reading news about the epidemic, and 92.8% of them are distracted by doing something positive in their lives. In addition, 86.3% of college students say that they have taken the initiative to chat with family and friends to relieve stress (Table 3).

Table 3 Behavioural effects of the COVID-19 epidemic on college students

Item	Bored or not		Fear of being in contact with people from the areas worst affected by the epidemic		Increasing time spent reading news about the epidemic		Doing something positive to distract yourself		Actively chatting with families and friends to relieve stress	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Number	2,030	1,935	1,638	2,327	3,398	567	3,680	285	3,422	543
Percentage/ %	51.2	48.8	41.3	58.7	85.7	14.3	92.8	7.2	86.3	13.7

3.2 Difference analysis

In the survey results, the overall cognition of different types of college students on the COVID-19 epidemic and psychological and behavioural effects of the epidemic on college students are significantly different. From the perspective of environment, the college students from areas most affected by the epidemic have a high level of cognition about the epidemic, and also show more abnormal emotions and deviant behaviour. In terms of psychological health, college students with good psychological health differ from those with poor health who exhibit more panic and deviant behaviour. As for personality types, college students with sanguine and phlegmatic temperaments show significant differences from those with choleric and melancholic temperaments. The latter exhibit a higher degree of panic and more deviant behaviours than the former (Tables 4 to 6).

Table 4 Overall cognition of different types of college students of the COVID-19 epidemic

Items			Believing the epidemic can be controlled		Panic is normal		Believing the government can control the epidemic		Supporting government prevention and control measures		Satisfied with the information released by the government		Satisfied with government prevention and control performance	
			Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Environment	Areas most affected by the epidemic	Number	2,775	42	2,755	62	2,763	54	2,769	48	2,467	349	2,518	299
		Percentage/ %	98.5	1.5	97.8	2.2	98.1	1.9	98.3	1.7	87.6	12.4	89.4	10.6
	Areas slightly affected by the epidemic	Number	1,016	32	988	60	1,036	12	1,031	17	935	113	955	93
		Percentage/ %	96.9	3.1	94.3	5.7	98.9	1.1	98.4	1.6	89.2	10.8	91.1	8.9
Psychological health	Good	Number	2,334	33	2,289	78	2,329	38	2,343	24	2,116	251	2,180	187
		Percentage/ %	98.6	1.4	96.7	3.3	98.4	1.6	99.0	1.0	89.4	10.6	92.1	7.9
	General	Number	1,433	22	1,413	42	1,427	28	1,430	25	1,254	201	1,305	150
		Percentage/ %	98.5	1.5	97.1	2.9	98.1	1.9	98.3	1.7	86.2	13.8	89.7	10.3
	Poor	Number	133	10	137	6	131	12	128	15	109	34	114	29
		Percentage/ %	92.9	7.1	95.9	4.1	91.8	8.2	89.8	10.2	75.9	24.1	79.7	20.3
Personality type	Choleric	Number	672	10	664	8	665	7	670	2	587	95	600	72
		Percentage/ %	98.5	1.5	97.4	2.6	97.5	2.5	98.3	1.7	86.1	13.9	88.0	12.0
	Sanguine	Number	1,265	23	1,251	38	1,265	24	1270	19	1,129	160	1,159	130
		Percentage/ %	98.1	1.9	97.1	2.9	98.1	1.9	98.5	1.5	87.6	12.4	89.9	10.1
	Phlegmatic	Number	1,440	19	1,418	41	1,434	25	1,431	28	1,297	162	1,344	115
		Percentage/ %	98.7	1.3	97.2	2.8	98.3	1.7	98.1	1.9	88.9	11.1	92.1	7.9
	Melancholic	Number	518	17	524	11	514	21	513	22	445	90	474	61
		Percentage/ %	96.9	3.1	98.0	2.0	96.1	3.9	95.9	4.1	83.1	16.9	88.6	11.4

Table 5 Psychological effects of the COVID-19 epidemic on different types of college students

Item			Panic or not		Fear, worried, nervous, and anxious		World-weary, disappointed, and depressed		InterNet increasing panic		Decreasing psychological endurance	
			Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Environment	Areas most affected by the epidemic	Number	1,299	1,518	1,020	1,797	299	2,518	792	2,025	363	2,453
		Percentage/ %	46.1	53.9	36.2	63.8	10.6	89.4	28.1	71.9	12.9	87.1

Psychological health	Areas slightly affected by the epidemic	Number	420	628	326	722	93	955	253	794	125	923
		Percentage/ %	40.1	59.9	31.1	68.9	8.9	91.1	24.2	75.8	11.9	88.1
	Good	Number	831	1,536	646	1,721	163	2,203	471	1,896	187	2,180
		Percentage/ %	35.1	64.9	27.3	72.7	6.9	93.1	19.9	80.1	7.9	92.1
	General	Number	831	624	629	826	173	1,282	487	968	278	1,177
		Percentage/ %	57.1	42.9	43.2	56.8	11.9	88.1	33.5	66.5	19.1	80.9
	Poor	Number	106	37	104	39	42	101	83	60	69	74
		Percentage/ %	74.1	25.9	72.6	27.4	29.1	70.9	58.3	41.7	48.2	51.8
Personality type	Choleric	Number	354	328	303	379	88	594	219	463	144	538
		Percentage/ %	51.9	48.1	44.5	55.5	12.9	87.1	32.1	67.9	21.1	78.9
	Sanguine	Number	517	772	397	892	97	1,192	311	978	124	1,165
		Percentage/ %	40.1	59.9	30.8	69.2	7.5	92.5	24.1	75.9	9.6	90.4
	Phlegmatic	Number	570	889	439	1,020	101	1,358	337	1,122	130	1,329
		Percentage/ %	39.1	60.9	30.1	69.9	6.9	93.1	23.1	76.9	8.9	91.1
	Melancholic	Number	301	234	258	277	108	427	203	332	118	417
		Percentage/ %	56.2	43.8	48.3	51.7	20.1	79.9	38.0	62.0	22.1	77.9

Table 6 Behavioural effects of the COVID-19 epidemic on different types of college students

Item			Bored or not		Fear of being in contact with people from the areas severely affected by the epidemic		Increasing time spent reading epidemic-related news		Doing something positive to distract yourself		Actively chatting with family and friends to relieve stress	
			Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Environment	Areas most affected by the epidemic	Number	1,411	1,406	1,130	1,687	2,341	476	2,651	166	2,318	499
		Percentage/ %	50.1	49.9	40.1	59.9	83.1	16.9	94.1	5.9	82.3	17.7

	Areas slightly affected by the epidemic	Number	455	593	379	669	839	209	983	65	871	177
		Percentage/ %	43.4	56.6	36.2	63.8	80.1	19.9	93.8	6.2	83.1	16.9
Psychological health	Good	Number	1,044	1,323	843	1,524	1,917	450	2,246	121	2,010	357
		Percentage/ %	44.1	55.9	35.6	64.4	81.0	19.0	94.9	5.1	84.9	15.1
	General	Number	752	703	672	783	1,181	274	1,346	109	1,136	319
		Percentage/ %	51.7	48.3	46.2	53.8	81.2	18.8	92.5	7.5	78.1	21.9
	Poor	Number	83	60	85	58	127	16	100	43	95	48
		Percentage/ %	58.1	41.9	59.2	40.8	88.8	11.2	70.1	29.9	66.1	33.9
Personality type	Choleric	Number	369	313	291	391	595	87	634	48	574	108
		Percentage/ %	54.1	45.9	42.7	57.3	87.2	12.8	92.9	7.1	84.2	15.8
	Sanguine	Number	597	692	490	799	1,087	202	1,243	46	1,146	143
		Percentage/ %	46.3	53.7	38.0	62.0	84.3	15.7	96.4	3.6	88.9	11.1
	Phlegmatic	Number	597	862	527	932	1,137	322	1,369	90	1,173	286
		Percentage/ %	40.9	59.1	36.1	63.9	77.9	22.1	93.8	6.2	80.4	19.6
	Melancholic	Number	291	244	260	275	417	117	454	81	377	158
		Percentage/ %	54.3	45.7	48.6	51.4	77.9	22.1	84.8	15.2	70.5	29.5

3.3 Significance analysis

The research data were described by means of mean and standard deviation ($x \pm s$), while analysis of variance (ANVA) for independent samples was used for inter-group comparisons. The environment, psychological health, and personality types of college students were used as factors. Whether the students are panicked, anxious, insomniac, excessively concerned about their own physical performance, or spend more time reading news related to the epidemic were taken as the dependent variables. Based on this, the influences of different factors on dependent variables and whether there were significant differences between them were investigated.

The survey results illustrate that college students in the areas most affected by the epidemic are significantly different from those in the areas only slightly affected in terms of whether there are psychological impacts, such as panic and anxiety caused by the COVID-19 epidemic, or not; however, their behavioural responses in other aspects are similar (Table 7). Those college students with different psychological traits exhibit distinct behavioural responses to the epidemic, such as whether they exhibit: panic, anxiety, physical symptoms, and excessive attention to their health (Table 8). Furthermore, college students with different personality types perform differently in terms of manifestation of panic, anxiety, physical symptoms, and excessive attention to their health and information about the epidemic. In different dependent variables, there are significant differences between any two groups (Table 9).

Table 7 Psychological and behavioural responses of college students in different environments to the COVID-19 epidemic

Psychological and behavioural response	Environment	*n*	*x ± s*	*F*	*P*
Panic or not	Area most affected by the epidemic	2,817	1.54 ± 0.49	10.698	0.001
	Area slightly affected by the epidemic	1,048	1.54 ± 0.49		
Whether feeling fear, worried, nervous, and anxious, or not	Area most affected by the epidemic	2,817	1.54 ± 0.49	9.501	0.002
	Area slightly affected by the epidemic	1,048	1.54 ± 0.49		
Whether having physical symptoms, such as insomnia, headache, and gastrointestinal discomfort, or not	Area most affected by the epidemic	2,817	1.54 ± 0.49	0.714	0.402
	Area slightly affected by the epidemic	1,048	1.54 ± 0.49		
Whether caring too much about physical performance, or not	Area most affected by the epidemic	2,817	1.54 ± 0.49	2.916	0.089
	Area slightly affected by the epidemic	1,048	1.54 ± 0.49		
Whether spending more time reading epidemic-related news, or not	Area most affected by the epidemic	2,817	1.54 ± 0.49	3.682	0.061
	Area slightly affected by the epidemic	1,048	1.54 ± 0.49		

Table 8 Psychological and behavioural responses of college students with different psychological qualities to the COVID-19 epidemic

Psychological and behavioural response	Environment	*n*	*x ± s*	*F*	*P*
Panic or not	Good	2,367	1.67 ± 0.49	86.175	<0.001
	General	1,455	1.45 ± 0.51		
	Poor	143	1.31 ± 0.47		
Whether feeling fear, worry, nervousness, and	Good	2,367	1.74 ± 0.45	73.152	< 0.001
	General	1,455	1.55 ± 0.49		

anxiety, or not	Poor	143	1.27 ± 0.46		
Whether exhibiting physical symptoms, such as insomnia, headache, and gastrointestinal discomfort, or not	Good	2,367	1.96 ± 0.23	69.894	< 0.001
	General	1,455	1.90 ± 0.29		
	Poor	143	1.61 ± 0.50		
Whether caring too much about physical performance or not	Good	2,367	1.75 ± 0.43	40.873	< 0.001
	General	1,455	1.64 ± 0.49		
	Poor	143	1.35 ± 0.49		
Whether spending more time reading epidemic-related news or not	Good	2,367	1.20 ± 0.40	0.891	0.409
	General	1,455	1.19 ± 0.39		
	Poor	143	1.15 ± 0.35		

Table 9 Psychological and behavioural responses of college students with different personality types to the COVID-19 epidemic

Psychological and behavioural response	Environment	*n*	*x ± s*	*F*	*P*
Panic or not	Choleric	682	1.48 ± 0.49	18.987	< 0.001
	Sanguine	1,289	1.59 ± 0.50		
	Phlegmatic	1,459	1.61 ± 0.48		
	Melancholic	535	1.46 ± 0.49		
Whether feeling fear, worried, nervous, and anxious, or not	Choleric	682	1.57 ± 0.48	24.015	< 0.001
	Sanguine	1,289	1.69 ± 0.47		
	Phlegmatic	1,459	1.70 ± 0.46		
	Melancholic	535	1.54 ± 0.50		
Whether exhibiting physical symptoms, such as insomnia, headache, and gastrointestinal discomfort, or not	Choleric	682	1.91 ± 0.31	12.143	< 0.001
	Sanguine	1,289	1.93 ± 0.24		
	Phlegmatic	1,459	1.96 ± 0.23		
	Melancholic	535	1.89 ± 0.34		
Whether caring too much about physical performance or not	Choleric	682	1.65 ± 0.49	7.592	< 0.001
	Sanguine	1,289	1.70 ± 0.46		
	Phlegmatic	1,459	1.71 ± 0.46		
	Melancholic	535	1.61 ± 0.50		
Whether spending more time reading epidemic-related news or not	Choleric	682	1.14 ± 0.35	6.418	< 0.001
	Sanguine	1,289	1.18 ± 0.36		
	Phlegmatic	1,459	1.22 ± 0.40		

Melancholic	535	1.22 ± 0.40

4 Discussion

Numerous studies have shown that public health emergencies induce significant psychological stress among college students, as manifest by fear, nervousness, worry, and anxiety [8]. The main purpose of this study is to assess the psychological and behavioural effects of the COVID-19 epidemic on college students. The research demonstrates that the college students have a very high overall level of cognition of the epidemic, and the psychological and behavioural effects thereof on college students are significant. The possible reason for this is that the epidemic may affect their current studies and future employment [9]. In addition, the psychological and behavioural effects of the epidemic on college students may result from the increasing interpersonal distance caused by quarantine. In the absence of interpersonal communication, anxiety is more likely to develop and worsen [10].

The COVID-19 epidemic not only causes societal and economic harm, but also affects the physical and mental health of college students. Due to harm caused, and uncertainty engendered by the epidemic, college students generally have emotions, such as panic, anxiety, and worry and somatic symptoms, such as insomnia, headache, and gastrointestinal discomfort. Under such emotional and physical conditions, college students tend to pay too much attention to information about the epidemic and their physical symptoms, even show cognitive bias. Lewis further proposed that information anxiety can induce information fatigue syndrome, showing a series of symptoms including anxiety and poor memory. Once the above symptoms of individuals continue to careen out of control, emotional responses, such as helplessness and depression, appear [11].

Based on the survey, it is found that factors, such as gender and degree major (subject) are not significantly correlated with the overall cognition of college students on the COVID-19 epidemic and psychological and behavioural effects of the epidemic on college students, which have no statistical significance. However, significant correlations are found with factors including environment, psychological health, and personality type. From the perspective of environmental factors, college students in the areas most affected by the epidemic are more concerned about it and are most sensitive to the epidemic. From the point of view of psychological health, students with good psychological health have more positive cognition of the epidemic; on the contrary, the students with poor psychological health show more unhealthy emotions and even physical responses. With respect to personality type, students of choleric temperament are more easily influenced by the external information in cognition, emotion, feeling, and behaviours and cannot control their emotions as well as other people. Students of melancholic temperament are oversensitive to, worried about, and afraid of the epidemic. Moreover, owing to their being introverted and lacking the necessary social support systems, they exhibit more abnormal emotions and behaviours. On the contrary, those students of sanguine and phlegmatic temperaments can better adapt to social change and emergencies, which are consistent with the previous research results [12].

5 Conclusions and suggestions

The survey results show that the psychological and behavioural effects of the COVID-19 epidemic on college students are significant, with 56.3% of college students exhibiting panic and nearly 60% experiencing major changes in their daily behaviours. College students with different personalities and psychological traits from different regions exhibit significant differences in psychology and behaviour. Therefore, during such public health emergencies, more attention should be paid to the mental health of college students. Colleges and communities where college students live can take the following specific measures:

(1) Based on the scientific reports of the official media, colleges and communities should guide college students to establish the correct view that COVID-19 can be prevented, controlled, and treated, and to build a mechanism of trust in the prevention and control of the epidemic.

(2) Universities and communities should guide college students to establish positive thinking, find beauty behind the epidemic, rationalise the epidemic, and prevent catastrophic and absolutist thinking, so as to help college students establish a reasonable cognitive model for the times.

(3) They should guide college students to moderate their level of attention to the epidemic, be aware of unhealthy mental attitudes caused by information overload, and learn to divert their attention and give themselves a more positive outlook.

(4) They should guide college students to maintain a healthy lifestyle, both physically and mentally.

(5) They should help college students build a social support system and guide them to build good relationships with their families, friends, and community workers.

(6) More attention should be paid to those college students with poor psychological health and choleric and melancholic temperaments, especially among those from areas most affected by the epidemic.

Authors' statement

We solemnly declare: we abide by academic ethics, advocating a rigorous style of study. The paper is the result of the work of our team. This paper does not contain any published or written content belonging to others, except as expressly indicated and quoted in the paper.

Declaration of competing interest

The authors have declared that no competing interests exist.

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