A STUDY ON MITIGATION STRATEGIES OF PSYCHOLOGICAL ANXIETY OF COLLEGE STUDENTS UNDER LEARNING STRESS

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SUMMARY

Background: With the rapid development of social economy and the acceleration of the current life pace, "anxiety" has become a common phenomenon. Academic stress, as one of the core sources of college students' stress, has an important impact on college students in terms of anxiety.

Subjects and methods: 1,240 college students were investigated by Questionnaire Star, a questionnaire survey tool, and Self-rating Anxiety Scale. The results were analyzed by the statistical analysis software SPSS 26.0.

Result: Among the 1,240 subjects, participating the survey, 232 students (18.7%) were in normal condition, 785 (63.3%) were mildly anxious, 192 (15.5%) were moderately anxious, and 31 (2.5%) were severely anxious. For college students, their anxiety is affected by different factors including gender, grade and academic performance. Among the different coping strategies of anxiety, the effect of psychological counseling turns out to be the best. On the other hand, avoidance strategy leads to aggravation of anxiety.

Conclusions: College students' anxiety is affected by gender, grade, academic performance and other factors. Among the coping strategies of anxiety, turning to psychiatrists for professional psychological counselling shows the best effect. Instead, avoidance strategy leads to a more severe situation of anxiety.

Key words: *learning stress - college students - anxiety disorder - anxiety relief*

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INTRODUCTION

Anxiety disorder, also known as anxiety neurosis, is one of the most common diseases of neurosis. It is characterized by the emotional experience of anxiety and divided into two forms. One is chronic anxiety (also referring to generalized anxiety disorder) and the other one is acute anxiety. The most intuitive manifestation of stress is anxiety, which further leads to insomnia and even develops into depression. The results of a national survey in 2020 showed that anxiety and its induced depression have become the primary psychological problems that college students face at this moment. Anxiety may cause mental tension, memory deterioration, elevated blood pressure, anorexia and insomnia. If anxiety lasts for a long period and is not alleviated timely, there will be more serious physical discomfort. The symptoms may include continuous dizziness or temporary loss of memory, chronic or severe headache, tremor, urticaria, unbearable emotional hypertension, etc. (Starcevic et al. 2007).

With the rapid development of social economy and the acceleration of the current life pace, people are more prone to negative emotions and "anxiety" has become a common phenomenon. As a specific group, college students are at the stage of developing life values and world views in all aspects. Facing this diversified and rapidly developing society, they are going through different kinds of pressures (Wu et al. 2020). What's worse, in recent years the suicide cases of college students caused by anxiety and depression are increasing year by year. The anxiety of college students has aroused concern from all walks of life. As one of the core sources of stress for college students, academic stress has an important impact on college students in terms of anxiety (Seligman & Wuyek 2007).

Colleges and universities have gathered the most outstanding talents from the country. They provide professional courses and rich teaching source for students. These professional courses and teachers are quite different from the basic knowledge system in the previous learning stage. University has higher requirements for learning ability (Cheng et al. 2020). In terms of the teaching form, it is far different from that in middle schools neither. The curriculum in colleges covers more subjects, and in each period, students face different choices of courses. Further, examination time between long-term courses and short-term courses is not fixed, and there are higher requirements for students' self-control in learning (Bayram & Bilgel 2020). College students are totally lost by these unfamiliar transitions and have no idea of what to do. They feel confused. They can't find the key points of a course. At the same time, the adoption of a new academic performance system, followed by English tests, computer skill tests, post-graduate entrance examination and other skill-oriented tests, also overwhelm college students. With all the above-mentioned reasons, college students are facing tremendous learning pressure.

SUBJECTS AND METHODS

This study was carried out from October 2021 to November 2021. There are 1,500 students selected from a university in Shaanxi Province to participate the questionnaire survey. A total of 1,500 questionnaires were distributed and 1,240 valid questionnaires were recovered, with an effective rate of 83%. All the students participating the survey were informed of the research background, research approach, questionnaire content and other information, and they acknowledged their consent of this questionnaire and survey.

Research tools include

Questionnaire Star, a questionnaire survey tool; statistical analysis software SPSS 26.0; self-rating Anxiety Scale (SAS). Self-rating Anxiety Scale is a psychological scale compiled by William W. K. Zung to measure the degree of anxiety and the changes of anxiety degree when subjects receive treatments. SAS adopts a 4-grade scoring, which mainly assesses the frequency of symptoms defined by the items. The statistical index is the total score. After the evaluation by the self-evaluator, the scores of 20 items are added up first, then multiplied by 1.25 to get the integer part, and finally the standard score can be obtained. The higher the standard score, the higher the level of anxiety. Generally speaking, the total score below 50 is in normal condition, 50-60 mildly anxious, 61-70 moderately anxious, and more than 70 severely anxious. The number of negative items indicates the number of items that the subjects show no response, while the number of positive items indicates the number of items that the subjects respond to.

Description of research approach

Based on the questionnaire data, a statistical characteristics analysis of the samples was carried out. 70 subjects with mild and moderate anxiety were randomly divided into 7 groups with 10 subjects in each group. According to the SAS scale, the SAS scores of different anxieties coping strategies were tested for three times. The arithmetic average values of each group were regarded as the original data, and the results were statistically analyzed to study the positive or negative effects of different anxiety mitigation strategies.

RESULTS

As shown in Table 1, a total of 1,240 subjects participated in the survey. Categorized by gender, there are 611 (49.1%) subjects were male and 639 (50.9%) were female. Categorized by grade, there were 340 freshmen (27.4%), 486 sophomores (39.2%), 309 juniors (24.2%) and 105 seniors (9.2%). Categorized by academic achievements, there were 166 (13.4%) subjects at the top 20% of majors, 692 (55.8%) in the middle of majors, and 382 (30.8%) in the last 40% of majors. Based on the scores of SAS, 1,240 subjects were classified according to the degree of anxiety. Subjects who are in normal condition accounted for 18.7%, mildly anxious 63.3%, moderately anxious 15.5% and severely anxious 2.5%.

Table 1. Statistical characteristics of samples

Category	Option	*n*	Percentage (%)	Normal	Mildly Anxious	Moderately Anxious	Severely Anxious
Gender	Male	611	49.1	162	348	85	16
	Female	629	50.9	70	437	107	15
Grade	Freshman	340	27.4	129	176	33	2
	Sophomore	486	39.2	52	395	35	4
	Junior	309	24.2	43	144	102	20
	Senior	105	9.2	8	70	22	5
Academic performance	At the top 20% of Majors	166	13.4	32	33	89	12
	In the middle 20%-60% of Majors	692	55.8	156	495	35	6
	The last 40% of Majors	382	30.8	44	257	68	13

In order to investigate the influence of gender, grade and academic performance on students' anxiety, the above three statistical characteristics were analyzed and compared. The results are shown from Table 2 to Table 5.

As can be seen from Table 2, F = 23.170, P < 0.001, and from Table 3, χ^2 = 48.875, P < 0.001. The results show that gender differences have a significant impact on college students' anxiety, and women are more likely to fall into a state of anxiety than men.

According to Table 4, χ^2 = 264.603, P < 0.001. It shows that there are significant differences in anxiety among different grades. Among all the grades, the anxiety index of freshmen and sophomores is lower

and the ratio of both is close, which proves that students of these two grades have less anxiety problems. According to Table 1, 33.0% of the juniors are moderately anxious, which is the highest ratio among the four grades. It indicates that juniors generally have relatively severe anxiety. Senior students with severe anxiety account for 18.5% of the total number of moderate and severe anxiety in this grade, which is higher than that of other grades (16.4%, 10.3%, 5.7%). From the existing data, it can be seen clearly that students with severe anxiety show a ladder-shaped distribution in the four grades. The higher the grade is, the more severe the anxiety is.

Table 2. Univariate ANOVA test of gender and anxiety

	Sum of Squares	*df*	Mean Square	*F*	*Sig.*
Between groups	10.061	1	10.061	23.170	0.000
Within groups	537.549	1238	0.434	-	-
Total	547.610	1239	-	-	-

Table 3. Chi-square test of gender and anxiety

	Value	*df*	Asymptotic Significance (2-sided)
Pearson chi-square	48.875[a]	3	0.000
Likelihood ratio	49.914	3	0.000
Linear-by-linear association	22.763	1	0.000
N of valid cases	1240	-	-

Note: A represents 0 cell (0. 0%) with an expected count of less than five. The minimum expected count is 15.28.

Table 4. Chi-square test of grade and anxiety

	Value	*df*	Asymptotic Significance (2-sided)
Pearson chi-square	264.603[a]	9	0.000
Likelihood ratio	243.152	9	0.000
Linear-by-linear association	120.622	1	0.000
N of valid cases	1240	-	-

Note: A represents 1 cell (6.3%) with an expected count of less than five. The minimum expected count is 2.63.

Table 5. Chi-square test of academic achievements and anxiety

	Value	*df*	Asymptotic Significance (2-sided)
Pearson chi-square	303.078[a]	6	0.000
Likelihood ratio	275.656	6	0.000
Linear-by-linear association	5.379	1	0.020
N of valid cases	1240	-	-

Note: A represents 1 cell (6.3%) with an expected count of less than five. The minimum expected count is 4.15.

As can be seen from Table 2, F = 23.170, P < 0.001, and from Table 3, χ^2 = 48.875, P < 0.001. The results show that gender differences have a significant impact on college students' anxiety, and women are more likely to fall into a state of anxiety than men.

According to Table 4, χ^2 = 264.603, P < 0.001. It shows that there are significant differences in anxiety among different grades. Among all the grades, the anxiety index of freshmen and sophomores is lower and the ratio of both is close, which proves that students of these two grades have less anxiety problems. According to Table 1, 33.0% of the juniors are moderately anxious, which is the highest ratio among the four grades. It indicates that juniors generally have relatively severe anxiety. Senior students with severe anxiety account for 18.5% of the total number of moderate and severe anxiety in this grade, which is higher than that of other grades (16.4%, 10.3%, 5.7%). From the existing data, it can be seen clearly that students with severe anxiety show a ladder-shaped distribution in the four grades. The higher the grade is, the more severe the anxiety is.

From the data in Table 5, we can see that χ^2 = 303.078, *P* < 0.001, which proves that there are significant differences in anxiety among students with different grades. According to Table 1, students with moderate and severe anxiety account for 60.8% of the students at the top 20% of majors. Among the students

at the bottom 40% of majors, 21.2% of them have moderate and severe anxiety. And 5.9% of students in the intermediate level have moderate and severe anxiety. The severity of anxiety among students with different academic achievements showed a dumbbell-shaped distribution.

70 subjects with mild and moderate anxiety were randomly divided into 7 groups with 10 subjects in each group. According to the SAS scale, the SAS scores of each group with different anxiety coping strategies were tested before the experiment, one week after the experiment, and two weeks after the experiment, three times in total. The test results are shown in Table 6, and the data analysis is shown in Table 7.

Table 6. SAS standard scores before and after the experiment

	Before the experiment	One week after the experiment	Two weeks after the experiment
Self-suggestion	60.6	58.9	57.3
Knowledge training	62.8	60.5	59.1
Music relaxation	63.8	61.3	57.3
Psychological counselling	61.9	55.2	49.6
Physical exercise	58.7	56.2	55.6
Making no change	65	65.2	64.8
Avoidance	63.5	64.8	65.3

Table 7. Data analysis of SAS standard scores

	Range	Minimum	Maximum	Mean	Std. Deviation	k
Self-suggestion	3.30	57.30	60.60	58.3286	1.32851	1.10
Knowledge training	3.70	59.10	62.80	60.1688	1.46156	1.23
Music relaxation	6.50	57.30	63.80	59.5078	2.71687	2.17
Psychological counselling	12.30	49.60	61.90	53.3558	4.92013	4.10
Physical exercise	3.10	55.60	58.70	56.3727	1.21925	1.03
Making no change	0.40	64.80	65.20	64.9273	0.16301	0.07
Avoidance	1.80	63.50	65.30	64.8188	0.70607	-0.60

Among the anxiety coping strategies adopted in this study, there are five positive coping strategies: Self-suggestion, Knowledge Training, Music Relaxation, Psychological Counselling and Physical Exercise. While the other two are negative ones, that is, Making No Change and Avoidance. From the results of data analysis, we can see that all the positive coping strategies played a certain role in alleviating anxiety, among which the most effective one was to seek professional Psychological Counseling from a psychiatrist. And the reduction range of SAS reached as much as 12.3 two weeks after the experiment. The final SAS scores were lower than 50, the dividing line of anxiety index. The next one is Music Relaxation. The anxiety degree of this group generally decreased from moderate anxiety to mild anxiety. The effects of Self-suggestion, Knowledge Training and Physical Exercise were similar, which all played a certain role in relieving anxiety (Smits et al. 2008). As to the negative coping strategies, the anxiety index of the experimental group which adopted the Making No Change strategy was maintained in the original range. The standard score's range of change is within 0.4, and there were no significant changes. Avoidance refers to negative measures such as procrastination and deliberate inattention. The anxiety index of students in this group increased 1.8 within two weeks, which indicated that avoiding learning pressure would lead to more severe anxiety.

DISCUSSION

The Influence of Gender on Anxiety. According to the statistics, the number of male students who are not anxious is much higher than that of female students. And the number of male students who are mildly and moderately anxious is lower than that of female students. The number of male students who are severely anxious is close to that of female students. This demonstrates that women are more likely to be affected by anxiety than men, which coincides with some of the current research data. The reasons may lie in measurement errors, physiological differences, social and cultural differences, and personality traits. Existing studies have shown that women tend to look for more complex causal relationships at the attributional level and are more likely to suffer from internal disorders such as emotional and other anxiety

disorders, stronger sense of social fear, etc. (Altemus et al. 2014).

The Influence of Grade on Anxiety. Learning pressure is different in different grades. Freshmen are mainly faced with the pressure of adapting to college life and study habits. The main pressure of sophomores lies in daily study, English and Computer Rank Examinations (Khoshlessan & Das 2017). As to Junior and senior students, they need to choose between taking the Postgraduate Entrance Examination and looking for a job. At the same time, they also have to face the tasks of writing and defending their thesis. Each of these tasks is more difficult than before (Nunez-Pena & Bono 2019). During the College Entrance Examination, students can get all kinds of care and guidance from relatives, friends and teachers. However, during Postgraduate Entrance Examination and graduation project, they can only rely on themselves and have to spend a lot of time and energy on their own studies. At the same time, they need to look for a job and start an internship. College students are faced with dramatically increasing pressure, which leads to more severe anxiety (Sari et al. 2018).

The Influence of Academic Performance on Anxiety. The statistical data reveals that both students at the top of major rankings and those at the bottom are facing greater learning pressure. For the former, it may be related to psychological factors such as higher self-requirements, fear of failure, desire for better academic achievements, and admission to key universities as postgraduates (Sujatha & Subhalakshmi 2016); while for the latter, it is mainly related to their concerns about academic performance. Low credits caused by poor performance will directly have a negative impact on students' successful graduation (Latas et al. 2010).

Effect Analysis of Different Anxiety Coping Strategies. The coping strategies adopted in this study can be divided into two types: positive strategies and negative ones. The results show that among the positive coping strategies, seeking help from others, especially from professional psychiatrists, has the best effect (Hollenbach 2016). But in real life, college students often ignore their own psychological problems. Few people take the initiative to seek psychological support. Instead, strategies like physical exercise and music relaxation are more widely used. Avoidance and making no change strategies will lead to long-standing anxiety that will not be eliminated easily. We must try to change the negative coping strategies because they will do great harm to the physical and mental health of college students.

CONCLUSIONS

Anxiety seriously affects college students' development of physical and mental health. Currently, the high incidence of the COVID-19 pandemic undoubtedly aggravates this problem (Faize & Husain 2021). Colleges should pay attention to students' psychological problems and conduct psychological surveys. At the same time, they should make rational use of modern means of education and teaching to scientifically screen students' psychological problems. And then they can scientifically manage the screening results and establish students' mental health files. Besides, they can organize students to study theoretical knowledge and alleviate college students' anxiety and depression, which contributes to students' healthy mentality (Khorassani et al. 2021). In terms of supporting facilities, colleges should increase the number of psychological counseling institutions and strengthen the training of relevant courses to expand awareness. Consequently, college students can scientifically recognize their mental health problems and independently seek ways to alleviate them.

There are some shortcomings in this study. Firstly, the research is a cross-sectional survey based on the network in a short period of time. It lacks follow-up tracking and long-term effective data of various anxiety coping strategies. Secondly, the sample size of the seniors is relatively small because most of them are busy with their studies or looking for a job, which further leads to the uneven distribution of the research subjects and the limited representativeness of the research results to a certain extent.

References

1. Altemus M, Sarvaiya N & Epperson CN: Sex differences in anxiety and depression clinical perspectives. Frontiers in Neuroendocrinology 2014; 35:320-330
2. Bayram N & Bilgel N: The prevalence and socio-demographic correlations of depression, anxiety and stress among a group of university students. Social Psychiatry and Psychiatric Epidemiology 2020; 43:667-672
3. Cheng S, Jia CX & Wang YJ: Only children were associated with anxiety and depressive symptoms among college students in China. International Journal of Environmental Research and Public Health 2020; 17:4035-4049
4. Faize FA & Husain W: Students with severe anxiety during COVID-19 lockdown-exploring the impact and its management. Journal of Mental Health

Training Education and Practice 2021; 16:153-163

5. *Hollenbach PM: Simulation and its effect on anxiety in baccalaureate nursing students. Nursing Education Perspectives 2016; 37:45-47*

6. *Khorassani F, Hassani B, Conry J & Espejo G: Evaluation of anxiety in doctor of pharmacy students in their first through fourth professional years. Currents in Pharmacy Teaching and Learning 2021; 13:628-634*

7. *Khoshlessan R & Das KP: Analyzing international students' study anxiety in higher education. Journal of International Students 2017; 7:311-328*

8. *Latas M, Pantic M & Obradovic D: Analysis of test anxiety in medical students. Medicinski Pregled, 2010; 63:863-866*

9. *Nunez-Pena MI & Bono R: Academic anxieties: which type contributes the most to low achievement in methodological courses? Educational Psychology 2019; 39:797-814*

10. *Sari SA, Bilek G & Celik E: Test anxiety and self-esteem in senior high school students: a cross-sectional study. Nordic Journal of Psychiatry 2018; 72:84-88*

11. *Seligman LD & Wuyek LA: Correlates of separation anxiety symptoms among first-semester college students: An exploratory study. Journal of Psychology 2007; 141:135-145*

12. *Smits JAJ, Berry AC, Rosenfield D, Powers MB, Behar E & Otto MW: Reducing anxiety sensitivity with exercise. Depression and Anxiety 2008; 25:689-699*

13. *Starcevic V, Berle D, Milicevic D, Hannan A, Lamplugh C & Eslick GD: Pathological worry, anxiety disorders and the impact of co-occurrence with depressive and other anxiety disorders. Journal of Anxiety Disorders 2007; 21:1016-1027*

14. *Sujatha B & Subhalakshmi S: Effect of stress on exam going first year medical students of Tirunelveli. International Journal of Medical Research & Health Sciences 2016; 5:118-121*

15. *Wu D, Yu LW, Yang TZ, Cottrell R, Peng SH, Guo W & Jiang SH: The impacts of uncertainty stress on mental disorders of Chinese college students: evidence from a nationwide study. Frontiers in Psychology 2020; 11:243*

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RESEARCH ON COLLEGE STUDENTS' PSYCHOLOGICAL STRESS CAUSED BY EMERGENT CAMPUS CRISIS AND INTERVENTION MEASURES

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SUMMARY

Background: In colleges and universities, it is not uncommon for college students to experience psychological crises caused by emergent crisis events. These emergent crises always impose direct and serious adverse effects on college students' daily study, normal life, and their mental health as well. At the same time, emergent crisis events may also cause other negative effects.

Subjects and methods: This paper takes the outbreak of COVID-19 epidemic as an example to study the conditions of college students' psychological stress and corresponding intervention effects through a questionnaire survey. The questionnaire selects college students over 18 years old in Henan Province. A total of 4,000 questionnaires are distributed and 3,396 valid questionnaires are retrieved. SPSS analysis tools are used for data processing. According to the questionnaire results, 20 are selected as the experimental group among the subjects with a factor score ≥ 3, and another 20 as the control group. The experimental group is subjected to a one-month active intervention from the school. The control group did not receive any intervention. SCL-90 scale data of the two groups are tested and recorded respectively before and after the experiment. T test is performed on the paired sample using SPSS software.

Results: Among the symptoms on the scale, two most serious problems are depression and anxiety. Students with a depression factor score greater than 2 account for 10.11%, and students with an anxiety factor score greater than 2 account for 13.89%. After the experimental group receive a one-month active intervention, all factor scores decline on difference levels, among which the decline of personal relationship and psychological terror is most significant.

Conclusions: Intervention measures such as ideological education and psychological counseling from schools have obvious positive guiding effects on college students experiencing emergencies. Colleges and universities shall not only handle the emergent crisis, but also equip themselves with prevention systems.

Key words: emergent crisis in colleges and universities - college students - psychological stress - psychological intervention

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INTRODUCTION

An emergent crisis in colleges and universities refer to an event that occurs suddenly on campus, which may bring social harm, affect students' safety, normal life and study, as well as have serious adverse effects on their mental health (Boatwright & Mazer 2017). Emergencies in colleges and universities are generally divided into three types. The first type is natural emergencies such as natural disasters or fires, the second is social management including theft, extortion, and brawl (Eklund et al. 2018), and the third is public security such as infectious diseases and food poisoning. Three types of emergencies are characterized by rapid and wide spread as well as great harm.

Stress, also the stress response, is a systemic non-specific adaptive response that occurs when the body is stimulated by various internal and external, as well as social and psychological environmental factors. This concept was first proposed by Canadian pathophysiologist Hans Selye in 1936, who defined it as the sum of non-specific responses of the body to external or internal stimuli. He called these non-specific changes that have little to do with stimuli as General Adaptation Syndrome (GAS), which was later renamed as stress. Psychological stress refers to the psychosomatic tension state caused by psychological and physiological responses when an individual feels or perceives a certain environmental stimulus. In people's real life, psychological stress is closely related to mental illness. Failing to cope with psychological stress habitually may lead to a decline in a person's ability to control his mind, emotion and behavior. Stressors are stimuli that arouse stress responses or adaptation requirements from the outside world. In this article, emergent crises in colleges and universities are the stressors (Michael et al. 2015).

The physical damage caused by emergencies in colleges and universities may recover in a short time, but the corresponding negative psychological effect will last for a long time (Kataoka et al. 2012). Existing research shows that the central nervous system of the body under stress will be abnormal with symptoms including tension, increased concentration, anxiety, fear, depression and anorexia, as well as that prolonged stress can also cause disorders of the body's immune function and cardiovascular disease (Chew et al. 2020). This study takes the outbreak of COVID-19 epidemic as an example to analyze college students' mental health status and related influencing factors, so as to provide