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The Effect of Different Exercise on Anxiety and Depression of College Students

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Abstract. Objective: To investigate the effect of relieving the different modes of exercise sports on College Students' anxiety and depressive symptoms, provide appropriate physical exercise to reduce their anxiety and depression levels, so as to better maintain and promote their mental health, and enrich their spare time. Methods: Tianjin urban construction university non-professional sports 218 college students as the research object, the object of study the scores of depression and anxiety scores than the normal threshold, they were randomly divided into A group (aerobics group, 60), B group (basketball exercise group, 82) and C group (table tennis exercise group, 76). A group of students using aerobics exercise method, B group of students using the basketball training method, C group of students using the method of table tennis exercise. Exercise duration 3 months after the three groups were observed before and after the exercise of the self-rating Depression Scale (SDS) and self-rating Anxiety Scale (SAS) score change Situation. Results: compared with before exercise, A group of students depression score is close to the critical value ($P < 0.05$), there was statistical significance; anxiety scores were not significantly different ($P > 0.05$), no statistical significance; B group of students depression scores and anxiety scores were significantly close to the critical value ($P < 0.05$), there was statistical significance; group C depression scores were not significantly different ($P > 0.05$), no statistical significance; anxiety scores significantly close to the critical value ($P < 0.05$), there was statistical significance. Three months exercise, three groups of students on the depression scale and anxiety scale scores through single factor analysis of variance ($P < 0.05$), there was statistical significance. Experimental results show that continue to exercise: 3 months after the three groups were observed before and after the exercise of the self-rating Depression Scale scores between the A group and B group, $P > 0.05$, no significant difference was not statistically significant; compared with B group, C group and $P < 0.05$, there was significant difference, statistically significant; A group compared with C group $P < 0.05$, there were significant differences, with statistical significance; conclusion: long time to participate in table tennis, badminton and aerobics students' anxiety and depression, anxiety and depression symptoms, indicating that the long-term exercise can effectively alleviate and prevent college students' depression and anxiety, encourage students to participate in sports, and should be long-term adherence, develop a positive healthy and optimistic attitude.

INTRODUCTION

Today, with the development of science and technology, employers are demanding more and more talents, and their parents' expectations for their children are also constantly rising. They are seeking employment, education, and learning. The stress caused by life and complicated family relationship makes the psychological pressure of college students increasing day by day. Some college students suffer from psychological problems because of their heavy load. The mental health level of college students directly affects the quality of talents. In recent years, according to the related investigation, the mental health condition of the college students is not optimistic. As a special group in the society, about 20-30% of the college students are worried about their mental health, and have different degree of anxiety and even depression.

The psychological health of college students is the foundation of their personal happiness and social service. However, the epidemiological data show that the number of college students with psychological disorders is increasing. In the middle of 1980s, 23% of the college students in our country have psychological disorders. In the 1990s, it has risen to 25%. In recent years, it has reached 30%. At present, physical exercise as a means of psychological treatment and mental health has become a common method at home and abroad. Studies have shown that physical exercise is an effective way to maintain or promote mental health and eliminate mental illness. This paper reports the effect of sports on depression state of college students.

MATERIALS AND METHODS

Basic Document

Adopting cluster sampling method, a group test was carried out on non-physical education majors of a certain university in class 2014. By analyzing the filling out of self-rating anxiety scale (SAS) and self-rating depression scale (SDS) 218 students whose scores of depression and anxiety exceeded the threshold of normal score were selected as the research objects. Among them, 122 men and 96 women. The 218 patients were randomly divided into group A and group B and group C. There were 60 students in Group A (30 males and 30 females) and 82 students in Group B (52 males and 30 females), 76 students in Group C (40 males and 36 females). There was no significant difference in the scores of depression and anxiety between the three groups ($P > 0.05$). Three groups of students in different exercise methods are comparable.

Exercise Method

A group students adopt aerobics exercise method. Group B students adopt basketball exercise method and group C students adopt table tennis exercise method. The students in the three groups were under moderate load, exercising 3 times a week for 90 minutes, for 3 months. The changes of heart rate of students were measured by Polar meter, and their exercise intensity was adjusted reasonably according to the actual situation of students' heart rate change.

Self-Rating Depression Scale

SDS was used to test the depression of students. There were 20 items in the main statistical indexes. The scores of each item were added to the coarse score according to the scale of grade 1 and 4. Multiply by 1.25 to get a guaranteed score. There was a positive correlation between the depression score and the depression tendency, and the critical value was a standard score of 53. Self-rating anxiety scale (SAS) was used to test students' anxiety. The main statistical indexes, scoring criteria and statistical methods were the same as those of depression self-rating scale. There was also a positive correlation between anxiety score and anxiety tendency, and the critical value was 50 points.

Statistical Method

Methods the data were processed by SPSS 15.0 software. The quantitative data of the sample are represented by the mean standard deviation and tested. The test result is expressed by P , and the basic criterion is. If $P < 0.05$, the difference between the two groups is significant and the comparison has statistical value.

RESULTS

Comparison of SDS- SAS Scores before and after Exercise in Three Groups of Students

The scores of depression and anxiety in group A were significantly close to the critical value ($P < 0.05$), but the scores of anxiety were not significant ($P > 0.05$), and the scores of depression and anxiety in group B were all close to the critical value ($P > 0.05$). The scores of depression in group C were not significantly different ($P > 0.05$), the scores of anxiety were close to the critical value ($P < 0.05$), and the scores of anxiety were close to the critical value ($P < 0.05$) (Table 1).

TABLE 1. Comparison of SDS- SAS scores before and after exercise in three groups of students ($\bar{x} \pm s$)

Groups	Time	Total	SDS(score)	SAS(score)
A group	Before exercise	60	58.74±4.18	57.41±3.44
	After exercise	60	53.07±2.63	56.52±2.09
	<i>t</i>	/	8.8932	1.7127
	<i>P</i>	/	0.0000	0.0894
B group	Before exercise		58.67±4.10	57.43±3.32
	After exercise	82	54.18±2.18	53.86±2.37
	<i>t</i>	82	8.756	7.9252
	<i>P</i>	/	0.0000	0.0000
C group	Before exercise	/	58.71±4.12	57.38±3.39
	After exercise		57.82±2.45	52.53±2.59
	<i>t</i>	76	1.6186	9.9108
	<i>P</i>	76	0.1076	0.0000
		/		
		/		

An Analysis of the Effects of Three Kinds of Exercise Methods on Depression and Anxiety of College Students

After three months of exercise, the results of univariate analysis of variance of the total scores of depression scale and anxiety scale in the three groups showed that the difference was significant and had statistical value ($P < 0.05$). The comparison between any two groups showed that there was no significant difference in the scores of depression scale between group A and group B ($P > 0.05$), but the scores of anxiety scale were significant ($P < 0.05$). The scores of depression scale and anxiety scale after exercise were significantly different between group A and group C ($P < 0.05$). The comparison had statistical value ($P < 0.05$), but there was no significant difference in the scores of anxiety scale ($P > 0.05$).

DISCUSSION

The problem of college students' mental health is getting more and more attention. As a means of psychological therapy and mental health, physical exercise has become a common method at home and abroad. By introducing and analyzing the epidemiological investigation of depression state of college students and its relationship with suicidal ideation, the influence of physical exercise on depression state of college students and its biological mechanism were analyzed. To provide ideas for sports to promote college students' mental health and its mechanism research. For most people, depression is an occasional, temporary, excessive emotional experience. However, some people also suffer from depression for a long time. In colleges and universities, students with depression tend to be unstable, withdrawn, introverted and so on. In recent years, with the increase of college students' suicides due to depression, the settlement of college students' depression has become the focus of attention. Anxiety, as a common emotional state, refers to the emotional state of tension, anxiety, or fear resulting from the inability to overcome obstacles or set goals. If anxiety is excessive, the body is prone to abnormal physical and psychological problems. With the increasing number of college graduates, the pressure on college students to pursue higher education and employment is also increasing, and the proportion of students with anxiety is also rising year by year. For now, the main treatments for depression and anxiety disorder are medication and psychotherapy [5]. As an important means of improving mental health, physical exercise helps to relieve and improve depression and anxiety, and make people feel happy, confident and satisfied after exercise [6]. In addition, stronger exercise helps to relax the central nervous response, thereby reducing anxiety. Calisthenics is a sport with individual action as its activity carrier. It is also a sport full of vigor and vitality, which can help students to improve their negative cognition and thinking in their self-experience success. Therefore, the overall level of mental health of college students is positively changed [7]. As a collective activity, basketball exercise helps to improve the students' sense of self-respect, on the other hand, it also helps to improve the students' ability of communication. Effectively improve their depression and anxiety. Studies have shown that small, medium-intensity table tennis is more likely to ease the anxiety of college students.

The results showed that the scores of depression in group A were close to the critical value ($P < 0.05$), but the scores of anxiety were not significant ($P > 0.05$). The scores of depression and anxiety in group B were significantly close to the critical value ($P < 0.05$). The scores of depression in group C were not significantly different from those in group C ($P > 0.05$), and the scores of anxiety were close to the critical value ($P > 0.05$). The comparison had statistical value ($P < 0.05$). After three months of exercise, the results of univariate analysis of variance of the total scores of depression scale and anxiety scale in the three groups showed that the difference was significant and had statistical value ($P < 0.05$). The comparison between any two groups showed that there was no significant difference in the scores of depression scale between group A and group B ($P > 0.05$), but the scores of anxiety scale were significant ($P < 0.05$). The scores of depression scale and anxiety scale after exercise were significantly different between group A and group C ($P < 0.05$). The comparison had statistical value ($P < 0.05$), but there was no significant difference in the scores of anxiety scale ($P > 0.05$). It can be seen that different exercise methods are of great significance in the treatment of depression and anxiety disorder of college students.

CONCLUSION

To sum up, in the treatment of depression anxiety disorder, different exercise methods have a certain therapeutic effect. Among them, calisthenics has the best effect in treating college students' depression, table tennis exercise is the best in treating college students' anxiety, and basketball exercise is the second. Therefore, in order to effectively improve the depression and anxiety of college students, we should encourage them to participate in sports and persist in it for a long time.

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