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The experimental study on the influence of chamber music teaching on the mental health of college students in music universities

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Abstract

Purpose of the study To study the effects of teaching chamber music courses on the mental health of college students in music schools. The key to the results is as follows. There was a significant difference in the total level of mental health between the experimental and control classes after the experiment. The total level of mental health of male and female college students in the experimental class had significant differences after the experiment, respectively. There was no significant difference in the ten factors of scl-90 in the control class before and after the experiment, while there was a significant difference. in the ten factors of scl-90 in the experimental class before and after the experiment. The experimental teaching of chamber music courses improves the mental health level of female college students better than male college students. We have come to understand Teaching chamber music courses can significantly improve the mental health of college students in music schools.

Keywords: Chamber Music Teaching, College Students in Music Universities, Mental Health

1. INTRODUCTION

College students are in a period of growth in their lives, facing psychological pressures such as academic and employment problems, as well as confusion about interpersonal relationships and love, and are prone to role mismatching, which often leads to psychological problems and even vicious cases, with very negative effects on society and families [1]. In March 2005, the General Office of the Ministry of Education of the People's Republic of China promulgated the "Implementation Outline of Mental Health Education for College Students in Ordinary Higher Education Institutions" as a guideline for the development of mental health education for college students, which clearly states that mental health education for college students is a systematic project and should In the "Outline", it is clearly pointed out that mental health education for college students is a systematic project, with classroom teaching and extra-curricular education and guidance as the main channels and basic links. As a result, a large number of experimental studies on the influence of curriculum teaching on the mental health of college students have been carried out in domestic higher education institutions. From the experimental studies in recent years, it can be seen that almost all of them have explored the positive influence of physical education courses on the mental health of college students [2-6], and there is a lack of experimental studies on the influence of music courses on the mental health of college

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students. Music therapy was born in the United States in 1940 and is a very young applied psychology discipline, exploring its principles, which is the use of music or musical elements (sound, rhythm, melody and chords) through a series of procedures to motivate people, stimulate self-expression, promote team harmony and other therapeutic purposes, as a way to meet cognitive, physical, social, spiritual and emotional needs, thereby improving People's psychological well-being [7], scholars see Joe believe that there are three broad approaches to music therapy: passive, active participatory, and improvisational. active music therapy is more acceptable to college students in art schools, with the chamber music format being particularly effective. This form not only makes the musical works screened by the teachers work, but also naturally establishes an emotional connection between people through music, which further improves the effect of music therapy [8]. Meanwhile, many scholars in China believe that chamber music courses have a positive effect on college students' communication, expression, cooperation, social adaptation, and psychological quality [9-12]. From the above studies, we know that chamber music course teaching as a form of active music therapy can have a positive impact on college students' psychological health, but these research findings are limited to the theoretical level and lack the support of empirical studies, thus it is necessary to conduct experimental research on the impact of chamber music course teaching on college students' psychological health, which can not only enrich music therapy theory and practice. And it can bring into play the exemplary effect of the main channel of classroom teaching in positively influencing college students' mental health, and fully mobilize the enthusiasm of teachers to improve college students' mental health through classroom teaching.

2. EXPERIMENTS

2.1 Purpose of the Study

To study the effects of teaching chamber music courses on the mental health of college students in music schools.

2.2 Research Methodology

- (1) Literature method, We collected a large number of experimental studies on the significance of chamber music course teaching and the influence of course teaching on college students' mental health through China Knowledge Network and other channels to lay a solid theoretical foundation for this study.
- (2) Questionnaire method, In this study, we chose to use the "Self-Rating Scale for Mental Health Symptoms" (SCL-90), which is commonly used in China and abroad, to investigate the mental health status of college students in music schools.
- (3) Experimental method, The daily activity class (control class) and the chamber music curriculum teaching intervention class (experimental class) were compared experimentally. The experimental class was taught the chamber music curriculum for 15 weeks, and the control class was taught according to the normal syllabus, and then both experimental and control classes were pre-tested and post-tested and compared experimentally.

2.3 Research Subjects

In this study, all students in the junior year of the School of Music of Anshan Normal College were selected as the subjects of the study, a total of 162 students were randomly grouped, the experimental class was 80 students, of whom 34 were male and 46 were female, taught in three groups, and the experimental teaching of the same content was carried out under the guidance of the same teachers; the control class was 82 students, of whom 38 were male and 44 were female, taught according to the normal syllabus of the School of Music.

2.4 Research Tools

In this study, we used the "Self-Rating Scale for Mental Health Symptoms" (SCL-90 for short), which is commonly used in China and abroad, and was developed by L. R. Derogatis, a famous American psychologist, in 1975. It was translated and introduced to China in 1984 by a famous Chinese scholar, Mr. Wang Zhengyu. The scale consists of 90 items, including a wide range of psychiatric symptoms, from sensation, emotion, thinking, consciousness, behavior, life habits, interpersonal relationships, diet and sleep, etc. The 10 factors are used to reflect the psychological symptoms in 10 areas. The 10 factors are arranged as follows: 12 items for somatization, 10 items for obsessive-compulsive symptoms, 9 items for interpersonal relationships, 13 items for depression, 10 items for anxiety, 6 items for hostility, 7 items for terror, 6 items for paranoia, 10 items for psychoticism, and 7 items for other. It adopts a 5-point rating system for each item that. The specific assignment is as follows: 1. No: consciousness without the symptom (problem), the value of 1 point, 2. Very mild: self-consciousness of the symptom, but there is no real impact on the subject, or the impact is slight, the score is 2, 3. Moderate: consciously have the symptom, have some influence on the examinees, the score is 3 points, 4. Heavy: self-consciousness often have the symptom, there is a considerable degree of impact on the subject, the score of 4 points, 5. Severe: The frequency and intensity of the self-consciousness of the symptom are very severe and have a serious impact on the subject, with a score of 5. The smaller the SCL-90 mean score, the better the mental health status. Similarly, the smaller the factor mean score, the less adverse symptoms of a factor and the better the mental health status. The reliability and validity coefficients of this scale have been tested and recognized internationally, and the reliability and validity are high and stable, so it can be used as a tool for measuring the mental health level of college students [13].

2.5 Experimental Teaching Program for Chamber Music Courses

- (1) Selection of experimental teaching repertoire for chamber music courses : As a whole, Western chamber music presents four stages of development, and the connotations and expressions of these four stages are different. They are the Baroque period chamber music; the Classical period chamber music; the Romantic period chamber music, and the nineteenth to twentieth century period chamber music. The Baroque, Classical and Romantic periods are analyzed to be more suitable for active music therapy, because they are well-structured and often express warm, positive and hopeful musical moods, and there are many pieces that express calm and gentle musical character. The repertoire is also large and easy to select and use. Therefore, in this study, Bach's "Musical Devotion", Haydn's "String Quartet", Mozart's "Clarinet Quintet in A Major", Schubert's "Trout in A Major", and Doppler's "Trio for Flute and Piano" were selected as experimental teaching repertoire.
- (2) Experimental teaching procedures for chamber music courses : The chamber music course is taught in the experimental class, and the teaching principle is step-by-step. The theory course includes a brief history of chamber music, ensemble theory, etc. The practice course includes intonation, timbre, pitch, intonation, weaving, ensemble technique training, etc. The total class time of this semester is 30 hours, each class is 2 hours, and the time limit is 90 minutes. 30 minutes before each class for the study of chamber music theory, and 60 minutes afterwards for the teaching and practice of the practical course. At the end of the experimental class, students of the experimental class will give three chamber music performances and receive the corresponding practice credits.
- (3) Experiment time : March 2021 - July 2021 for 15 weeks.
- (4) Experimental site : Multi-functional Music Hall, School of Music, Anshan Normal College.

2.6 Mathematical Statistics

The experimental data before and after the experiment were recorded and analyzed, and the SPSS system was used to perform cross-sectional and longitudinal comparative analysis of the collected data using SPSS system, and the main statistical indicators were mean, standard deviation, T-value and P-value.

3. RESULTS

3.1 There was no Significant Difference in the total level of mental health between the experimental class and the control Class before the Experiment

Before the experimental teaching of chamber music course, the scl-90 mental health self-assessment questionnaire was distributed to college students in the experimental and control classes, and a total of 162 valid questionnaires were returned. The data obtained were analyzed by spss statistical software and found that there was no significant difference between the experimental and control classes in the total level of mental health before the experiment ($p=0.960>0.01$), which indicated that the experimental and control classes before the experiment were total level of mental health is homogeneous, and if there is a significant difference between them after the experiment, then it indicates that the effect is caused by the experiment of teaching chamber music course. The specific data are shown in Table 1 below.

Table 1. Comparison of the overall mental health level of the experimental and control groups before the experiment

Control group (n=82)	Experimental group (n=80)	t Value	p Value
1.798±0.383	1.788±3.85	-0.015	0.960

3.2 There were Significant differences in total mental health between the experimental class and the control class

After fifteen weeks of experimental teaching of chamber music course, the scl-90 mental health self-assessment questionnaire was then distributed to college students in the experimental and control classes, and a total of 162 valid questionnaires were returned. The obtained data were analyzed by spss statistical software and found that there was a significant difference between the experimental class and the control class in the total level of mental health after the experiment ($p < 0.01$), and we know from Table 1 that the experimental class and the control class before the experiment were From Table 1, we know that the total level of mental health of the experimental class and the control class before the experiment is homogeneous, thus, we can conclude that the chamber music course teaching experiment significantly improves the overall level of mental health of college students, and the total level of mental health of the experimental class is higher than the total level of mental health of the control class. The specific data are shown in Table 2 below.

Table 2. Comparison of the overall mental health level of the experimental and control groups before the experiment

Control group (n=82)	Experimental group (n=80)	t Value	p Value
1.898±0.352	1.319±0.158	9.725	<0.01

3.3 There was no difference in the total level of mental health between the female college students in the experimental class and the control class before the experiment, and there was a significant difference between them after the experiment

Table 1 and Table 2 are the comparative analysis of the overall mental health level of college students in the experimental class and the control class before and after the experiment, in order to carefully compare the difference in the total score of the mental health level of female college students in the experimental class and the control class before and after the experiment, it was found by statistical analysis that before the experiment, there was no significant difference in the total level of mental health between female college students in the experimental class and the control class ($p=0.830>0.01$); after the experiment both After the experiment, there was a significant difference in the total score ($p<0.01$), and the mental health level of female college students in the experimental class was higher than that in the control class. This indicates that the chamber music course teaching experiment can significantly improve the mental health level of female college students. The specific data are shown in Table 3 below.

Table 3. Comparison of the mental health level of female college students in the experimental and control groups before and after the experiment

	Before the experiment	After the experiment	t Value	p Value
Control group (n=44)	1.834±0.358	1.812±0.279	-0.238	0.830
Experimental group (n=46)	1.828±0.349	1.268±0.148	7.628	<0.01
t Value	-0.228	9.814		
p Value	0.834	<0.01		

3.4 There was no difference in the total level of mental health between male college students in the experimental class and the control class before the experiment, and there was a significant difference between them after the experiment

In order to carefully compare the overall differences in the mental health levels of male college students in the experimental class and the control class before and after the experiment, statistical analysis revealed that before the experiment, there was no significant difference in the total level of mental health between male college students in the experimental class and the control class ($p=0.145>0.01$); after the experiment there was a significant difference in the total score between the two ($p<0.01$), and the level of mental health of male college students in the experimental class was higher than that of the control class. There was no significant difference in the total level of mental health in the control class before and after the experiment ($p=0.152>0.01$), and there was a significant difference in the total level of mental health in the experimental class before and after the experiment ($p<0.01$). These statistical results indicate that the chamber music course teaching experiment significantly improved the mental health level of male college students. The specific data are shown in Table 4 below.

Table 4. Comparison of the mental health levels of male college students in the experimental and control groups before and after the experiment

	Before the experiment	After the experiment	t Value	p Value
Control group (n=38)	1.670±0.345	1.814±0.413	-1.601	0.152
Experimental group (n=34)	1.712±0.352	1.355±0.147	3.045	<0.01
t Value	0.145	4.872		
p Value	0.854	<0.01		

3.5 There was no significant difference in the ten factors of scl-90 in the control class before and after the experiment, while there was a significant difference in the ten factors of scl-90 in the experimental class before and after the experiment.

In order to carefully study the changes in the ten factors of scl-90 between the experimental class and the control class before and after the experiment, statistical analysis revealed that there was no significant difference in the ten factors of scl-90 between the control class before and after the experiment; there was a significant difference in the ten factors of scl-90 between the experimental class before and after the experiment, and the health level of the ten factors after the experiment was significantly better than before the experiment. This indicates that the chamber music course teaching experiment can significantly improve the health level of ten factors of scl-90 among college students. The specific data are shown in Table 5 below.

Table 5. Comparison of the ten factors of SCL-90 before and after the experiment in the control and experimental groups

Ten factors	Control group before and after the experiment			Experimental group before and after the experiment		
	Mean Difference	t Value	p Value	Mean Difference	t Value	p Value
Somatization	-0.150	-1.418	0.136	0.458	6.224	<0.01
Compulsive symptoms	-0.012	-0.087	0.879	0.625	5.399	<0.01
Interpersonal sensitivity	-0.154	-0.136	0.193	0.384	3.730	<0.01
Depression	-0.083	-0.8760	0.387	0.564	5.859	<0.01
Anxiety	-0.156	-1.329	0.187	0.557	6.013	<0.01
Hostile	-0.076	-0.544	0.587	0.398	4.512	<0.01
Terror	-0.127	-1.237	0.239	0.442	5.293	<0.01
Paranoia	-0.276	-2.875	0.112	0.287	3.145	<0.01
Psychogenic	-0.081	-0.973	0.328	0.472	6.356	<0.01
Other	-0.082	-0.675	0.513	0.421	4.386	<0.01

3.6 The experimental teaching of chamber music courses improves the mental health level of female college students better than male college students.

From the above analysis, we know that there is no significant change in the mental health level of college students in the control class before and after the experiment, so the following study focuses on the changes in the mental health level of male and female college students in the ten factors of scl-90 before and after the experiment. After statistical analysis, we found that there were significant differences in the ten factors of scl-90 among female college students before and after the experiment, and the health level of female college students in the ten factors after the experiment was better than that before the experiment; there were significant differences in seven factors of scl-90 among male college students before and after the experiment, and there were no significant differences in interpersonal relationship and paranoia factors before and after the experiment, and these statistical results indicated that the chamber music course These statistical results show that the experimental teaching has a better effect on the mental health level of female college students than that of male college students. The specific data are shown in Table 6 below.

Table 6. Comparison of men and women on the ten factors of SCL-90 before and after the experiment in the experimental group

Ten factors	Female college students before and after the experiment			Male college students before and after the experiment		
	Mean Difference	t Value	p Value	Mean Difference	t Value	p Value
Somatization	0.512	5.335	<0.01	0.384	4.321	<0.01
Compulsive symptoms	0.827	6.312	<0.01	0.413	2.378	<0.01
Interpersonal sensitivity	0.418	3.736	<0.01	0.312	1.889	0.074
Depression	0.738	5.824	<0.01	0.352	2.918	<0.01
Hostile	0.572	3.897	<0.01	0.234	2.512	<0.01
Anxiety	0.847	8.238	<0.01	0.279	2.154	<0.01
Terror	0.587	5.234	<0.01	0.263	2.415	<0.01
Paranoia	0.418	3.459	<0.01	0.018	0.012	1.000
Psychogenic	0.567	6.879	<0.01	0.345	3.012	<0.01
Other	0.648	5.475	<0.01	0.152	0.312	0.23

4. DISCUSSION

4.1 There was a Significant Difference between the experimental class and the control class in the total level of Mental Health after the Experiment

Chamber music course has its own disciplinary attributes, which not only focus on students' skills and techniques, but also pay more attention to the cultivation of students' comprehensive qualities, such as communication ability, collaboration ability and expression ability, thus the chamber music course itself has the effect of improving the interpersonal relationship of college students. At the same time, the process of playing, is also a kind of exercise, the mouth, heart and lungs, and even the movement of the limbs can regulate

the hormone level, which makes depression and anxiety get relieved [14]. Moreover, the chamber music performance needs secondary arrangement, which can stimulate the creative enthusiasm of college students and meet the need of self-actualization, moreover, the chamber music report performance improves the adaptability of college students' future career, finally, this chamber music course teaching selection takes The repertoire of active music therapy, because of its neat structure, often expresses warm, positive and hopeful musical emotions [15] and also brings positive emotional experience to college students. Thus, the chamber music course teaching can bring positive changes to the mental health level of college students in the experimental class.

4.2 The Total level of Mental Health of male and female college students in the experimental class before and after the experiment had Significant Differences Respectively

According to Tables 3 and 4, we can learn that the total level of mental health of both male and female college students in the experimental class after the experiment has significantly improved compared with that before the experiment, which proves that the teaching of chamber music course brings positive changes to college students' mental health from a subtle perspective - gender. This all indicates that the disciplinary attributes, teaching training and performance, and active repertoire selection of chamber music courses can significantly improve the mental health of college students of different genders.

4.3 The Experimental teaching of Chamber music courses improves the mental health level of female college students better than male College Students

According to Table 6 we can see that after the experimental class experiment, female college students have significantly improved their mental health level on all ten factors of scl-90, male college students have significantly improved their mental health level on seven factors of scl-90, and there is no significant improvement on interpersonal sensitivity, paranoia, and other factors, this statistical result shows that the experimental teaching of chamber music course has a better effect on the mental health level of female college students This statistical result indicates that the experimental teaching of chamber music course has a better effect on the mental health level of female students than male students. There are three main reasons for this gender difference, one is that, from the point of view of the personality characteristics of men and women, there is a big difference, female students' mood fluctuation changes more, easily affected by external conditions and more obvious changes; male mood is relatively stable some, the outside interference on the male psychological impact is not very obvious; second, in the way of thinking, male students are more rational, female is more emotional. That is, female students' emotions are easily changed by the disturbance of external environmental factors, and male students are relatively stable [16]; Third, from the process and results of this experiment, female students' enthusiasm, conscientiousness and depth of participation in this experimental teaching are better than male students.

5. CONCLUSION

The conclusions drawn from this study are as follows. 1) There was a significant difference in the total level of mental health between the experimental and control classes after the experiment. 2) There was a significant difference in the total level of mental health between the experimental and control classes after the experiment. 3) The total level of mental health of male and female college students in the experimental class had significant differences after the experiment, respectively. 4) There was no significant difference in the ten factors of scl-90 in the control class before and after the experiment, while there was a significant difference in the ten factors

of scl-90 in the experimental class before and after the experiment. 5) The experimental teaching of chamber music courses improves the mental health level of female college students better than male college students. Teaching chamber music courses can significantly improve the mental health of college students in music schools.

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