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Intervention Study of Group Music Therapy on College Students' Psychological Stress

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Abstract

Music therapy was introduced from the concept and method of western modern music therapy in 1979 to today, and it only has a history of more than 30 years. At present, the research on music therapy in China is still in its infancy and exploration stage. In clinical practice, it is mostly used in medical institutions, but seldom used in universities. Under the background of strengthening and improving college students' mental health education, and taking the opportunity of college students' constant demand for new methods and means of psychological counseling and consultation and the need for expanding the field of music therapy, this study attempts to explore effective ways to promote the healthy personality development of college students by means of group psychological counseling and music therapy technology on the basis of summing up previous practical experience and theoretical research.

The experimental design of this study adopts the intra-group experimental method of measuring the experimental group before and after, taking 400 college students as the research objects, and giving music group therapy to the experimental group members twice a week for 90-120 minutes each time, with a total of 8 unit courses. Effect investigation: Questionnaire and interview, quantitative and qualitative methods were used to study the promotion effect of music group therapy on college students' mental health. Through the observation and analysis of the group process, combined with the research results and practical experience, the researcher designed a set of music group therapy program which accords with the psychological characteristics of college students, and summarized the feasibility, characteristics and misunderstandings of the application of music group therapy in colleges and universities. Finally, in view of the shortcomings of this study, the author reflected and looked forward to it, and put forward some suggestions on developing music therapy in colleges and universities from the aspects of practical application and future research directions.

Keywords: Music group therapy; College students; Self-worth; Mental health development.

1. Theoretical basis of research.

1.1 Definition of concept.

1.1.1 Music therapy.

In which "Therapy" comes from Greek Therapies, which means to care, To help and To treat. The definition of music therapy adopted in this paper comes from Dr. Bruscia, Professor of Temple University in the United States: "Music therapy is a process of systematic intervention. In this process, therapists use various forms of music experience and the therapeutic relationship developed in the course of treatment as the driving force of treatment to modify the patients to achieve the purpose of health."

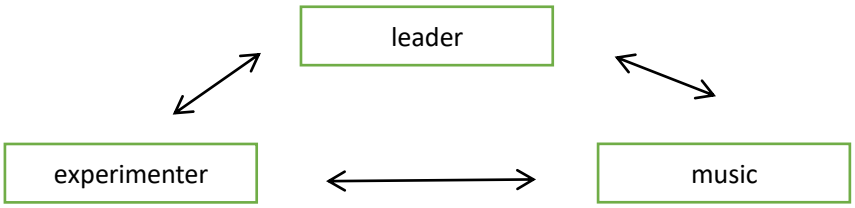

*Figure 1.*the pluralistic relationship in the music therapy of the research group

1.1.2 Group music therapy.

Group music therapy is a kind of music therapy in the form of groups, with the goal of promoting individuals to explore, seek and develop themselves (Amelia M.M.1982). The biggest feature of music therapy group is the use of music in the process of intervention, and music is used as the main stimulus in the group environment to help the group members achieve: 1) self-awareness-expression and exploration of their emotional/emotional state; 2) Insight into your own problems; 3) Find the way to solve the problem and the skills of learning and coping. In the whole process of group development, these goals are achieved through the experience of various music activities (Ronald M. Borczon 1997). Group intervention in music therapy not only stays at the level of support, but more enters the level of introspection and analysis, from which each member can acquire new interpersonal attitude and sense of responsibility, and also can release and solve the subconscious contradictions that have negative effects on the development of individual personality, thus promoting the growth of personality. (Corey 1996, Mary Priestley 1985, Ronald M. Borczon 1997, Amelia M.M.,1982)

1.2 Theoretical basis.

1.2.1 Orff's "original nature" music education principle.

Introducing music of "original nature" into schools is not only the foundation and root of all music education, but also the basic means of cultivating, character, promoting fantasy, overcoming communication difficulties and strengthening all physical and psychological forces. Paying attention to "people" in music teaching and education, that is, paying attention

to cultivating individual creativity and team cooperation spirit, is an important part of Orff's "original" sound and music education principle. In this study, the design of some music group therapy activities starts with Orff's "original, natural" music education thought, and also directly borrows Orff's music teaching activities. However, the purpose of this study is not to carry out music teaching activities, but to solve psychological stress problems.

1.2.2 Group dynamics theory.

Group dynamics was founded by German psychologist Lei Wen (1890-1947) in the late 1930s, emphasizing that group is a dynamic whole. The main ways of psychological stress intervention for college students in this study are music, group therapy, and all activities in the course of therapy are collective participation of group members, which maximally reflects the related theories of group dynamics.

2. Research Design

The questionnaire issuing lasting for four months from Apr. 2020 to Aug. 2020 was mainly centralized in Liuzhou, Guangxi Province. The questionnaire took the way of online survey by using the Questionnaire Star system to enter questionnaires with an investigation made by issuing questionnaires on web. For the purpose of a strict control over the measuring object range, ensure questionnaire data collection quality, the questionnaire issuing took the form of one-to-multiple, multiple-to-multiple layer-by-layer dispersion through close, reliable friends, with the persons involved in this investigation being informed of the purpose of this survey and the questionnaire confidentiality and urged to fill out carefully. 505 questionnaires were distributed this time, with 445 collected back at a recovery rate 88.12%. To ensure data authenticity, those invalid questionnaires were sifted out, for example, (1) those questionnaires answering not carefully and taking a short period of time; (2) those questionnaires with content missing at multiple places; (3) those questionnaires with answers being apparently similar or having a certain rule. 30 questionnaires were sifted out and eventually 415 valid questionnaires obtained, the valid recovery rate being 95.4%. The questionnaire data was analyzed with spss 22.0.

3. Variable Measurement

The demographic variables include gender, grade, music study period and habit of listening to music at normally times. In gender, the male assignment is 1, the female assignment is 2. In grade, the assignment of fresh year is 1, that of sophomore year is 2, that of junior year is 3, that of senior year is 4. In music study period, the assignment of 0 year is 1, that of 1-2 years is 2, that of 3-5 years is 3, that of 6-9 years is 4, that of more than 10 years is 5. In habit of listening to music at normal times, the assignment of seldom listening is 1, that of listening accidentally is 2, that of listening frequently is 3.

4. Frequency Analysis

4.1 Frequency analysis of gender

Table 4.1: Frequency analysis of gender

		Frequency	Percentage
Gender	Male	179	43.1%
	Female	236	56.9%

Table 4.1 is the table of Frequency analysis of gender. It can be known from the table that there are 179 male students, occupying 43.1%; there are 236 female students, occupying 56.9%. This means that among the investigating objects, there are more female students than male students.

4.2 Frequency Analysis of Grade.

Table 4.2: Frequency analysis of grade

Grade	Frequency	Percentage
Fresh year	64	15.4%
Sophomore year	168	40.5%
Junior year	79	19%
Senior year	104	25.1%

Table 4.2 is the frequency analysis table of grade. It can be known from the table that there are 64 in fresh year, occupying 15.4%; 168 in sophomore year, occupying 40.5%; 79 in junior year, occupying 19%; 104 in senior year, occupying 25.1%. This means that among the investigating objects, the number in sophomore year is the most, the number in fresh year is the fewest.

4.3 Frequency analysis of music study period.

Table 4.3: Frequency analysis of music study period

Music study period	Frequency	Percentage
0 year	54	13%
1-2 years	118	28.4%
3-5 years	136	32.8%
6-9 years	58	14%
Over 10 years	49	11.8%

Table 4.3 is the frequency analysis table of music study period, the number on 0 year is 54, occupying 13%; the number on 1-2 years is 118, occupying 28.4%; the number on 3-5 years is 136, occupying 32.8%; the number on 6-9 years is 58, occupying 14%; the number on over 10 years is 49, occupying 11.8%. This means that among the investigating objects, the number on 3-5 years is the most, the number on over 10 years is the fewest.

4.4 Frequency analysis of the habit of listening to music at normal times.

Table 4.4: Frequency analysis of the habit of listening to music at normal times

Habit of listening to music at normal times	Frequency	Percentage
Seldom	79	19%
Accidentally	270	65.1%
Frequently	66	15.9%

Table 4.4 is the frequency analysis table of the habit of listening to music at normal times, the number on seldom is 79, occupying 19%; the number on accidentally is 270, occupying 65.1%; the number on frequently is 66, occupying 15.9%. This means that among the investigating objects, the number listening accidentally is the most, the number listening frequently is relatively less.

5. Reliability and Validity Analysis

Reliability analysis the main method of testing the dependability and stability of a scale. The most common method of reliability analysis is Cronbach's Alpha coefficient. If the Cronbach's Alpha coefficient is greater than 0.9, it is regarded that the internal reliability of the scale is very high; if the Cronbach's Alpha coefficient is greater than 0.7 (smaller than 0.9), it is regarded that the international reliability is comparatively good; if the Cronbach's Alpha coefficient is greater than 0.5 (smaller than 0.7), it is regarded that the internal reliability is acceptable; if the Cronbach's Alpha coefficient is smaller than 0.5, it is regarded that there is a big problem in the scale design, and the scale shall be considered to be designed again.

The Cronbach's coefficients of music treatment course feedback, auxiliary music treatment, music creation, music game, listening to songs of different music styles are respectively 0.700, 0.759, 0.709, 0.733, 0.761, all of which is greater than 0.7. This means that these five sub-scales are high in internal reliability.

5.2 Validity Analysis.

KMO and Bartlett test table. It can be known from the table above that the KMO value is 0.662, greater than 0.5; the statistical value of Bartlett test of sphericity is 1481.457, and the p value obtained by analysis is approximate to 0, which is smaller than the significant level,

meaning that factor analysis is applicable. Table of total variance explained. According to the principle of accumulated contribution rate exceeding 50% and characteristic value greater than 1, 5 main factors can be extracted from 11 questions of the questionnaire. The accumulated variance contribution rate of these 5 main factors meets 78.103%, meaning that the information rejected is little, and the result of factor analysis is reliable.

Table 5.4 is the rotating factor load table. It can be known from the table that the load of Q1-2 on Factor 4 is comparatively great, which can be named as the factor of music treatment course feedback; the load of Q3-4 on Factor 2 is comparatively great, which can be named as the factor of auxiliary music treatment; the load of Q6-9 on Factor 5 is comparatively great, , which can be named as the factor of music creation. the load of Q5, Q7, Q10 on Factor 3 is comparatively great, which can be named as the factor of music game. the load of Q8, Q11 on factor 3 is comparatively great, which can be named as the factor of listening to songs of different music styles. The loads of every factor are greater than 0.5, and there is not serious crossed load among all the questions. Every measurement item gathers under corresponding factors, meaning that these variables have good structure validity.

Table 5.4: Rotated Component Matrix

	Element				
	1	2	3	4	5
Q1				0.774	
Q2				0.891	
Q3		0.860			
Q4		0.853			
Q6					0.855
Q9					0.857
Q5	0.73				
Q7	0.791				
Q10	0.774				
Q8			0.879		
Q11			0.876		

5.3 The Validity Analysis of College Students' Mental Health Table 5.5 KMO and Bartlett test

KMO sampling appropriateness number		0.865
Bartlett's sphericity test	Chi-square last read	6343.574
	Degree of freedom	190
	Significance	0.000

Table 5.5 is the KMO and Bartlett test table. From the above table, it can be seen that the KMO value is 0.865, which is greater than 0.5; the Bartlett spherical test statistic value is 6343.574, and the p value obtained by analysis is close to 0, which is less than the significance level, indicating that it is suitable for factor analysis.

6. Difference Analysis

6.1 Difference analysis for different genders against various variables.

Table 5.5 is the difference analysis table of different genders against various variables. The independent sample t test method is used, the test statistical quantity is t statistical quantity, if the p value of t statistical quantity is greater than 0.05, this means that different genders has no difference for that variable. If the p value of t statistical quantity is less than 0.05, this means that different genders have a difference for that variable.

As far as psychological health condition of university students is concerned, the average value of male in psychological health condition of university students is 3.994, that of female in psychological health condition of university students is 4.195. The value of t statistical quantity is -2.114, the corresponding p value is 0.035, being less than 0.05. This means that the average value of different genders in psychological health condition of university students has a significant difference. Specifically speaking, the average value of male in psychological health condition of university students is significantly less than that of female in the same.

Table 6.1: Difference analysis for different genders against various variables

	Gender	Number	Average value	Standard deviation	t	P
Psychological health condition of university students	Male	179	3.994	0.992	-2.114	0.035
	Female	236	4.195	0.930		
Music treatment course feedback	Male	179	3.818	0.839	-0.146	0.884
	Female	236	3.831	0.832		
Auxiliary music treatment	Male	179	3.508	0.923	-0.621	0.535
	Female	236	3.568	0.997		
Music creation	Male	179	3.662	0.959	1.261	0.208
	Female	236	3.551	0.833		
Music game	Male	179	3.674	0.700	0.877	0.381
	Female	236	3.612	0.733		
Listening to songs of different music styles	Male	179	3.682	0.911	-1.552	0.121
	Female	236	3.824	0.938		

As far as music treatment course feedback is concerned, the average value of male in music treatment course feedback is 3.818, that of female in the same is 3.831. The value of t statistical quantity is -0.146, the corresponding p value is 0.884, being greater than 0.05. This means that the average value of different genders in music treatment course feedback has no significant difference.

As far as auxiliary music treatment is concerned, the average value of male in auxiliary music treatment is 3.508, that of female in the same is 3.568. The value of t statistical quantity is -0.621, the corresponding p value is 0.535, being greater than 0.05. This means that the average value of different genders in auxiliary music treatment has no significant difference.
As far as music creation is concerned, the average value of male in music creation is 3.662, that of female in the same is 3.551. The value of t statistical quantity is 1.261, the corresponding p value is 0.208, being greater than 0.05. This means that the average value of different genders in music creation has no significant difference.

As far as music game is concerned, the average value of male in music game is 3.674, that of female in the same is 3.612. The value of t statistical quantity is 0.877, the corresponding p value is 0.381, being greater than 0.05. This means that the average value of different genders in music game has no significant difference.

As far as listening to songs of different music styles is concerned, the average value of male in listening to songs of different music styles is 3.682, that of female in the same is 3.824. The value of t statistical quantity is -1.552, the corresponding p value is 0.121, being greater than 0.05. This means that the average value of different genders in listening to songs of different music styles has no significant difference.

6.2 Difference analysis for different grades against various variables.

The difference analysis table of different grades against various variables. The analysis method of ANOVA is used, the test statistical quantity is F statistical quantity, if the p value of F statistical quantity is greater than 0.05, this means that different grades has no difference for that variable. If the p value of F statistical quantity is less than 0.05, this means that different grades have a difference for that variable.

As far as psychological health condition of university students is concerned, the average value of fresh year in psychological health condition of university students is 3.922, that of sophomore year in the same is 4.036, that of junior year in the same is 4.127, that of senior year in the same is 4.327. The value of F statistical quantity is 2.969, the corresponding p value is 0.032, being less than 0.05. This means that the average value of different grades in psychological health condition of university students has a significant difference. It is known from posttest that the average value of senior year in psychological health condition of university students is significantly greater than that of fresh year, sophomore year in the same.

As far as music treatment course feedback is concerned, the average value of fresh year in music treatment course feedback is 3.680, that of sophomore year in the same is 3.848, that of junior year in the same is 3.848, that of senior year in the same is 3.861. The value of F statistical quantity is 0.773, the corresponding p value is 0.510, being greater than 0.05. This means that the average value of different grades in music treatment course feedback has no significant difference.

Table 6.2: *Difference analysis for different grades against various variables*

		N	Average value	Standard deviation	F	Significance	Post test
Psychological health condition of university students	fresh year	64	3.922	1.103	2.969	0.032	④>①、②
	sophomore year	168	4.036	0.953			
	junior year	79	4.127	0.952			
	senior year	104	4.327	0.853			
Music treatment course feedback	fresh year	64	3.680	0.927	0.773	0.510	
	sophomore year	168	3.848	0.792			
	junior year	79	3.848	0.818			
	senior year	104	3.861	0.855			
Auxiliary music Treatment	fresh year	64	3.383	1.053	0.922	0.430	
	sophomore year	168	3.616	0.973			
	junior year	79	3.538	0.887			
	senior year	104	3.524	0.954			
Music creation	fresh year	64	3.516	0.938	0.754	0.520	
	sophomore year	168	3.574	0.887			
	junior year	79	3.576	0.924			
	senior year	104	3.707	0.841			
Music game	fresh year	64	3.464	0.800	1.511	0.211	

	sophomore year	168	3.667	0.721		
	junior year	79	3.684	0.700		
	senior year	104	3.667	0.670		
	fresh year	64	3.680	1.005	1.016	0.385
Listening to songs of	sophomore year	168	3.708	0.913		
different music styles	junior year	79	3.779	0.922		
	senior year	104	3.889	0.908		

As far as auxiliary music treatment is concerned, the average value of fresh year in auxiliary music treatment is 3.383, that of sophomore year in the same is 3.616, that of junior year in the same is 3.538, that of senior year in the same is 3.524. The value of F statistical quantity is 0.922, the corresponding p value is 0.430, being greater than 0.05. This means that the average value of different grades in auxiliary music treatment has no significant difference. As far as music creation is concerned, the average value of fresh year in music creation is 3.516, that of sophomore year in the same is 3.574, that of junior year in the same is 3.576, that of senior year in the same is 3.707. The value of F statistical quantity is 0.754, the corresponding p value is 0.520, being greater than 0.05. This means that the average value of different grades in music creation has no significant difference.

As far as music game is concerned, the average value of fresh year in music game is 3.464, that of sophomore year in the same is 3.667, that of junior year in the same is 3.684, that of senior year in the same is 3.667. The value of F statistical quantity is 1.511, the corresponding p value is 0.211, being greater than 0.05. This means that the average value of different grades in music game has no significant difference.

As far as listening to songs of different music styles is concerned, the average value of fresh year in listening to songs of different music styles is 3.680, that of sophomore year in the same is 3.708, that of junior year in the same is 3.779, that of senior year in the same is 3.889. The value of F statistical quantity is 1.016, the corresponding p value is 0.385, being greater than 0.05. This means that the average value of different grades in listening to songs of different music styles has no significant difference.

6.3 Difference analysis for different music study periods against various variables.

Table 6.2 is the difference analysis table of different music study periods against various variables. It can be known from the table that as far as psychological health condition of university students is concerned, the average value of 0 year in psychological health condition of university students is 3.889, that of 1-2 years in the same is 4.042, that of 3-5 years in the same is 4.154, that of 6-9 years in the same is 4.052, that of over 10 years in the same is 4.449. The value of F statistical quantity is 2.969, the corresponding p value is 0.032, being less than 0.05, this means that the average value of different music study periods in psychological health condition of university students has a significant difference. Specifically speaking, the average

value of over 10 years in psychological health condition of university students is significantly greater than that of 0 year, 1-2 years in the same.

Table 6.3: Difference analysis for different music study periods against various variables

		N	Average value	Standard deviation	F	P	Post test
Psychological health condition of university students	0 year	54	3.889	1.423	2.969	0.032	④>①、②
	1-2 years	118	4.042	0.982			
	3-5 years	136	4.154	0.815			
	6-9 years	58	4.052	0.804			
	Over 10 years	49	4.449	0.738			
Music treatment course feedback	0 year	54	3.815	1.256	0.773	0.510	
	1-2 years	118	3.843	0.821			
	3-5 years	136	3.824	0.714			
	6-9 years	58	3.793	0.755			
	Over 10 years	49	3.837	0.710			
Auxiliary music treatment	0 year	54	3.454	1.171	0.922	0.430	
	1-2 years	118	3.619	0.942			
	3-5 years	136	3.489	0.918			
	6-9 years	58	3.578	0.931			
	Over 10 years	49	3.561	0.961			
Music creation	0 year	54	3.602	0.803	0.754	0.520	
	1-2 years	118	3.534	0.857			
	3-5 years	136	3.669	0.882			
	6-9 years	58	3.655	0.933			
	Over 10 years	49	3.490	1.033			
Music game	0 year	54	3.383	0.917	1.511	0.211	
	1-2 years	118	3.619	0.750			
	3-5 years	136	3.691	0.623			
	6-9 years	58	3.770	0.667			
	Over 10 years	49	3.667	0.660			
Listening to songs of different music styles	0 year	54	3.565	1.112	1.016	0.385	
	1-2 years	118	3.699	0.970			
	3-5 years	136	3.805	0.876			
	6-9 years	58	3.905	0.740			
	Over 10 years	49	3.847	0.937			

As far as music treatment course feedback is concerned, the average value of 0 year in music treatment course feedback is 3.815, that of 1-2 years in the same is 3.843, that of 3-

5 years in the same is 3.824, that of 6-9 years in the same is 3.793, that of over 10 years in the same is 3.837. The value of F statistical quantity is 0.773, the corresponding p value is 0.510, being less than 0.05, this means that the average value of different music study periods in music treatment course feedback has a significant difference. Specifically speaking, the average value of over 10 years in music treatment course feedback is significantly greater than that of 0 year, 1-2 years in the same.

As far as auxiliary music treatment is concerned, the average value of 0 year in auxiliary music treatment is 3.454, that of 1-2 years in the same is 3.619, that of 3-5 years in the same is 3.489, that of 6-9 years in the same is 3.578, that of over 10 years in the same is 3.561. The value of F statistical quantity is 0.922, the corresponding p value is 0.430, being less than 0.05, this means that the average value of different music study periods in auxiliary music treatment has no significant difference.

As far as music creation is concerned, the average value of 0 year in music creation is 3.602, that of 1-2 years in the same is 3.534, that of 3-5 years in the same is 3.669, that of 6-9 years in the same is 3.655, that of over 10 years in the same is 3.490. The value of F statistical quantity is 0.754, the corresponding p value is 0.520, being less than 0.05, this means that the average value of different music study periods in music creation has no significant difference.
As far as music game is concerned, the average value of 0 year in music game is 3.383, that of 1-2 years in the same is 3.619, that of 3-5 years in the same is 136, that of 6-9 years in the same is 3.770, that of over 10 years in the same is 3.667. The value of F statistical quantity is 1.511, the corresponding p value is 0.211, being less than 0.05, this means that the average value of different music study periods in music game has no significant difference.
As far as listening to songs of different music styles is concerned, the average value of 0 year in listening to songs of different music styles is 3.565, that of 1-2 years in the same is 3.699, that of 3-5 years in the same is 3.805, that of 6-9 years in the same is 3.905, that of over 10 years in the same is 3.847. The value of F statistical quantity is 1.016, the corresponding p value is 0.385, being less than 0.05, this means that the average value of different music study periods in listening to songs of different music styles has no significant difference.

6.4 Difference analysis for different habits of listening to music at normal times against various variables.

Table 6.4: Difference analysis for different habits of listening to music at normal times against various variables

	N		Average value	Standard deviation	F	Significance	Post test
Psychological health condition of university students	Seldom	79	4.000	1.062	0.703	0.496	
	Accidentally	270	4.144	0.939			
	Frequently	66	4.091	0.924			
Music treatment course feedback	Seldom	79	3.810	0.782	0.255	0.775	
	Accidentally	270	3.844	0.855			
	Frequently	66	3.765	0.819			
Auxiliary music treatment	Seldom	79	3.487	0.812	3.343	0.036	②>③
	Accidentally	270	3.620	0.990			
	Frequently	66	3.288	0.993			
Music creation	Seldom	79	3.525	0.891	1.691	0.186	
	Accidentally	270	3.656	0.900			
	Frequently	66	3.455	0.835			
Music game	Seldom	79	3.646	0.605	0.107	0.899	
	Accidentally	270	3.646	0.725			
	Frequently	66	3.601	0.821			
Listening to songs of different music styles	Seldom	79	3.532	0.886	3.513	0.031	①<②
	Accidentally	270	3.841	0.921			
	Frequently	66	3.720	0.973			

Table 6.4 is the difference analysis table of different habits of listening to music at normal times against various variables. It can be known from the table that as far as psychological health condition of university students is concerned, the average value of seldom listening in psychological health condition of university students is 4.000, that of listening accidentally in the same is 4.144, that of listening frequently in the same is 4.091. The value of F statistical quantity is 0.703, the corresponding p value is 0.496, being greater than 0.05. This means that the average value of different habits of listening to music at normal times in psychological health condition of university students has no significant difference.

As far as music treatment course feedback is concerned, the average value of seldom listening in music treatment course feedback is 3.810, that of listening accidentally in the same is 3.844, that of listening frequently in the same is 3.765. The value of F statistical quantity is 0.255, the corresponding p value is 0.775, being greater than 0.05. This means that the average value of

different habits of listening to music at normal times in music treatment course feedback has no significant difference.

As far as auxiliary music treatment is concerned, the average value of seldom listening in auxiliary music treatment is 3.487, that of listening accidentally in the same is 3.620, that of listening frequently in the same is 3.288. The value of F statistical quantity is 3.343, the corresponding p value is 0.036, being less than 0.05. This smeans that the average value of different habits of listening to music at normal time in auxiliary music treatment has a significant difference. According to the post test, the average value of listening accidentally in auxiliary music treatment is significantly greater than that of listening frequently in the same. As far as music creation is concerned, the average value of seldom listening in music creation is 3.525, that of listening accidentally in the same is 3.656, that of listening frequently in the same is 3.455. The value of F statistical quantity is 1.691, the corresponding p value is 0.186, being greater than 0.05. This means that the average value of different habits of listening to music at normal times in music creation has no significant difference.

As far as music game is concerned, the average value of seldom listening in music game is 3.646, that of listening accidentally in the same is 3.646, that of listening frequently in the same is 3.601. The value of F statistical quantity is 0.107, the corresponding p value is 0.899, being greater than 0.05. This means that the average value of different habits of listening to music at normal times in music game has no significant difference.

As far as listening to songs of different music styles is concerned, the average value of seldom listening in listening to songs of different music styles is 3.532, that of listening accidentally in the same is 3.841, that of listening frequently in the same is 3.720. The value of F statistical quantity is 3.513, the corresponding p value is 0.031, being less than 0.05. This means that the average value of different habits of listening to music at normal times in listening to songs of different music styles has a significant difference. It is known from post test that the average value of seldom listening in listening to songs of different music styles is significantly less than that of listening accidentally in the same.

6.5 Descriptive Analysis

Table 6.5: Descriptive analysis

	Number	Minimum	Maximum	Average value	Standard deviation
Psychological health condition of university students	415	1	5	4.108	0.961
Music treatment course feedback	415	1	5	3.825	0.834
Auxiliary music treatment	415	1	5	3.542	0.965
Music creation	415	1	5	3.599	0.890
Music game	415	1	5	3.639	0.719
Listening to songs of different music styles	415	1	5	3.763	0.928

Table 6.5 is a descriptive analysis table, in which the average values of psychological health condition of university students, music treatment course feedback, auxiliary music treatment, music creation, music game, listening to songs of different music styles are respectively 4.108, 3.825, 3.542, 3.599, 3.639, 3.763, all of which is greater than 3, this means that the investigating objects get high marks on these variables.

6.6 Correlation Analysis

Table 6.6: Correlation analysis

	1	2	3	4	5	6
1.Psychological health condition of university students	1					
2. Music treatment course feedback	0.455**	1				
3. Auxiliary music treatment	0.331**	0.342**	1			
4. Music creation	0.201**	0.222**	0.233**	1		
5. Music game	0.428**	0.347**	0.382**	0.274**	1	
6. Listening to songs of different music styles	0.462**	0.230**	0.190**	0.093	0.323**	1

** When the confidence (double measurement) is 0.01, the correlation is significant.

Table 6.6 is the correlation analysis table, in which the correlation coefficients of music treatment course feedback, auxiliary music treatment, music creation, music game, listening to songs of different music styles and psychological health condition of university students are all significantly positive, and the levels of the correlation coefficients are respectively 0.455, 0.331, 0.201, 0.428, 0.462.

6.7 Regression Analysis

Table 6.7 is the model summary table, in which R square is fit goodness indicator, representing the explanatory power of independent variables to dependent variables. In that table, the R square value is 0.413, representing that independent variables can explain 41.3% of dependent variable variations.

Table 6.7: Model summary

Model	R	R square	R square after adjustment	Standard estimation error
1	0.642	0.413	0.399	0.745

Table 6.8 is the table of ANOVA, in which the F statistical quantity can judge if the regression coefficient is generally significant, if the p value to which the F statistical quantity corresponds is greater than 0.05, this means that the regression coefficient of that regression model is generally not significant. Conversely, if the p value to which the F statistical quantity corresponds is less than 0.05, this means that the regression coefficient of that regression model is generally significant.

In the table, the value of the F statistical quantity is 31.597, the corresponding p

value is 0.000, being less than 0.05, this means that the regression coefficient of that regression model is generally significant.

Table 6.8: The Table of ANOVA

Model		Sum of squares	Degree of freedom	Mean square	F	Significance
1	Regression	157.629	9	17.514	31.597	0.000
	Residual	224.492	405	0.554		
	Total	382.12	414			

Table 6.9: The table of Regression coefficient

Model		Unstandardized coefficient		Standardized coefficient	t	Significance
		B	Standard error	β		
1	(Constant)	-0.406	0.322		-1.260	0.208
	Gender	0.171	0.075	0.088	2.284	0.023
	Grade	0.081	0.036	0.087	2.227	0.026
	Music study period	0.068	0.031	0.083	2.155	0.032
	Habit of listening to music at normal times	0.058	0.063	0.035	0.914	0.361
	Music treatment course feedback	0.321	0.049	0.279	6.558	0.000
	Auxiliary music treatment	0.100	0.043	0.101	2.347	0.019
	Music creation	0.043	0.044	0.040	0.994	0.321
	Music game	0.234	0.060	0.175	3.905	0.000
	Listening to songs of different music styles	0.304	0.043	0.294	7.133	0.000

Dependent variable: Psychological health condition of university students. Table 6.9 is the table of Regression coefficient. It can be known from the table that the gender, grade, music study period, habit of listening to music at normal times therein are controlling variables, the music treatment course feedback, music creation, music game, listening to songs of different music styles therein are independent variables, the psychological health condition of university students therein is a dependent variable.

It can be seen from the regression coefficient that the regression coefficient of gender for psychological health condition of university students is significantly positive, and the level thereof is 0.171, under the condition that other factors remain unchanged, in comparison to male, the influence on the psychological health condition of female university students is better.

The regression coefficient of grade for psychological health condition of university

students is significantly positive, and the level thereof is 0.081, under the condition that other factors remain unchanged, the higher the grade is, the better the psychological health condition of university students will be.

The regression coefficient of music study period for psychological health condition of university students is significantly positive, and the level thereof is 0.068, under the condition that other factors remain unchanged, the longer the music study period is, the better the psychological health condition of university students will be.

The regression coefficient of habit of listening to music at normal times for psychological health condition of university students is positive, and the level thereof is 0.058, but not significant.

The regression coefficient of music treatment course feedback for psychological health condition of university students is significantly positive, and the level thereof is 0.321, under the condition that other factors remain unchanged, music treatment course feedback has a positive influence on psychological health condition of university students.

The regression coefficient of auxiliary music treatment for psychological health condition of university students is significantly positive, and the level thereof is 0.100, under the condition that other factors remain unchanged, auxiliary music treatment has a positive influence on psychological health condition of university students.

The regression coefficient of music creation for psychological health condition of university students is positive, and the level thereof is 0.043, but not significant.

The regression coefficient of music game for psychological health condition of university students is significantly positive, and the level thereof is 0.234, under the condition that other factors remain unchanged, music game has a positive influence on psychological health condition of university students.

The regression coefficient of listening to songs of different music styles for psychological health condition of university students is significantly positive, and the level thereof is 0.304, under the condition that other factors remain unchanged, listening to songs of different music styles has a positive influence on the improvement of university students in their psychological health condition.

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