

# RESEARCH ON THE APPLICATION OF CHORUS IN MENTAL HEALTH EDUCATION IN PRIMARY AND SECONDARY SCHOOLS AND ITS ENLIGHTENMENT

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## SUMMARY

**Background:** At present, mental health education has become a key issue in education. Because many young students have more or less certain negative psychological emotions, these emotions seriously affect the physical and mental health of young students. China began to carry out mental health education for students in the 1980s, and now has accumulated a lot of valuable teaching experience, but the research on the mental health problems of minority students is very few. Some studies show that there are significant differences in the comparison of negative psychological problems among ethnic minority students. Generally, the mental health level of Han students is higher than that of ethnic minority students. Nowadays, the development of society is faster and faster, and people are more and more competitive in life. As the hope of the country in the future, teenagers' mental health problems are bound to receive special attention.

**Subjects and methods:** In this study, 380 primary and secondary school students in a city were selected by random sampling, including 120 minority students and 320 Han students. After all subjects were randomly divided into groups, both experimental group and control group included 130 Han students and 60 minority students. The experimental group was given singing combined with health education mode teaching, and the control group was given routine teaching. Before and after teaching, the two groups were evaluated with the scales related to depression, alienation and well-being, and the differences in the scores of ethnic minority students were analyzed.

**Results:** In the increment of negative emotion, the increment of students' negative emotion score in the experimental group is significantly lower than that in the control group. The main effect of participating in the experiment is significant, and the national main effect is not significant. Whether to accept music teaching or not has no significant interaction effect with nationality. The incremental differences of self-efficacy, somatization and interpersonal problems were not significant. In the lack of emotion, the main effect of participating in the experiment is significant, and the national main effect is not significant. After chorus teaching, there was no difference in the increment of the total score of loneliness between the two groups. The main effect of participating in the experiment was not significant, and the national main effect was not significant. There is no significant interaction between acceptance of chorus teaching and nationality.

**Conclusions:** Chorus course can effectively promote the mental health level of ethnic minority primary school students, especially in reducing depression, improving happiness and the love of music courses.

**Key words:** chorus - primary and secondary schools - mental health - depression - happiness

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## INTRODUCTION

At present, mental health education has become a key issue in education. Many young students have more or less certain negative psychological emotions, which seriously affect their physical and mental health (Samnidze et al. 2020). China began to carry out mental health education for students in the 1980s. Now it has accumulated a lot of valuable teaching experience, but there are very few studies on the mental health problems of minority students (Bornstein et al. 2021). There are two main reasons for this situation: first, ethnic minorities generally live in remote areas, with relatively backward economic conditions, difficult family conditions and living conditions of ethnic minority students, and weak world outlook and scientific outlook (Pittig et al. 2015). Second, ethnic minority students usually have their own national customs. When facing different cultures and lives, they will have certain negative psychological problems.

Some studies have shown that there are significant differences in the comparison of negative psychological problems among ethnic minority students. Generally, the mental health level of Han students is higher than that of ethnic minority students (Mai 2021). Nowadays, the development of society is faster and faster, and people are more and more competitive in life. As the hope of the country in the future, teenagers' mental health problems are bound to receive special attention (Kool et al. 2021). At present, many experts and scholars have built some educational structure models for students' mental health problems according to the requirements of quality education (Kutlu & Gould 2015). These educational structure models are mainly divided into horizontal development discipline structure and vertical hierarchical structure. The former divides morality, intelligence, physique, beauty and labor, and lists psychological quality separately. The latter divides mental health problems into multiple levels, which are divided into three levels: theory, psychology and social culture (Apfelbaum et al. 2017). Both horizontally and

vertically, the importance of mental health education can be realized in the current quality education, and this content has become one of the main standards for evaluating youth education (Ku & Chen 2015). The mental health problem of young students is the most critical problem in their life. As teenagers begin to mature in all aspects such as emotion and personality, their mental health problems will have a serious impact on their future study and life (Young et al. 2021). Chorus teaching in schools is an important part of English curriculum, and also an effective means to assist students' mental health education. It plays a very important role in improving the mental health of young students (Booij et al. 2021).

## SUBJECTS AND METHODS

### Study setting

In this study, 380 primary and secondary school students in a city were selected by random sampling, including 120 minority students and 320 Han students. After all subjects were randomly divided into groups, both experimental group and control group included 130 Han students and 60 minority students. The experimental group was given singing combined with health education mode teaching, and the control group was given routine teaching. This study mainly discusses the impact of chorus on the mental health of primary and secondary school students. Therefore, the quasi-experimental design between subjects is adopted. Before and after teaching, the two groups were evaluated on the scales related to depression, alienation and well-being, and the differences in the scores of ethnic minority students were analyzed (Avasthi & Grover 2018). In the research process, whether to accept chorus is set as the independent variable, and the students' depression, alienation and happiness are the dependent variables, mainly including the total score of depression: negative emotion, low self-efficacy, physical symptoms, interpersonal problems and lack of pleasure. The total score of alienation includes children's loneliness, social dissatisfaction and happiness scale.

### Design

The curriculum plan is designed according to the psychological regulation and curriculum standards of primary and secondary school students, so that students can obtain happiness in chorus, especially ethnic minority students, and observe the students' depression tendency, loneliness and unhappiness (Randler et al. 2014). Before and after the teaching of the two groups of students, the self-designed children's loneliness scale was used to evaluate the students. The scale is mainly used to evaluate the loneliness and social inadequacy of primary and secondary school students. There are 24 items in total, of which 16 items are loneliness, good at social interaction, poor social interaction and subjective evaluation of partners, which belong to lie detection; There are 10 expressions in the direction of loneliness,

such as "I don't have any friends", "I feel lonely" and so on. There are 6 test questions expressed in the direction of no sense of loneliness, such as "students like me very much", "I have many friends" and so on. The remaining 8 masking tests include hobbies and favorite activities, such as "I like painting". Using the 5-level scoring method, the higher the score, the stronger the social dissatisfaction and loneliness. Reliability of children's loneliness scale  $\alpha$  the coefficient is 0.89, and the correlation range of the total score of the test items is 0.51-0.91, reflecting the high internal consistency of the scale. The calculation formula of the questionnaire validity of this study is obtained by the ratio of the real score variance related to the measurement target to the total variance, as shown in formula (1).

$$R_{xy} = (SV_2 / SX_2) \quad (1)$$

In formula (1),  $R_{xy}$  represents validity,  $SV_2$  represents true variance and  $SX_2$  represents total variance.

The well-being scale is used to evaluate the students' well-being before and after the intervention, which is divided into 7 levels, 1-7 levels. The reverse scoring method is adopted. The subjects are asked to choose the expression that can especially express their feelings for the whole life of the individual. The lower the score, the higher the subjects' well-being. The management and analysis of research data used SPSS19.0 and Excel.

## RESULTS

### Comparative depression score

The experimental group, control group, Han nationality and ethnic minorities were used as independent variables, and the total score of depression and various factors were used as dependent variables for one-way ANOVA. It can be seen that the total pre-test score of depression in the experimental group is significantly higher than that in the control group, the pre-test score of negative emotion in the experimental group is significantly higher than that in the control group, the pre-test score of low self-efficacy in the experimental group is significantly higher than that in the control group, and there is no significant difference in the pre-test score of somatization between the experimental group and the control group. The scores of interpersonal problems of the experimental group were significantly higher than those of the control group. The scores of interpersonal problems of minority students were significantly higher than those of Han students. The total score of the pretest of lack of emotion in the experimental group was significantly higher than that of the control group. Because there are significant differences between the experimental group and the control group in pretest scores, except for the somatization score, the experimental group is significantly worse than the control group in terms of

total depression score, negative emotion, low self-efficacy, interpersonal problems, lack of emotion and other dimensions. Therefore, if the difference in posttest scores is calculated, the experimental effect

cannot be explained. It is appropriate to use the incremental method to compare the experimental effect. As shown in Table 1.

**Table 1.** Pre test and post test scores of depressions in the two groups

Intervention			Depression score	Negative emotions	Self-efficacy	Somatization	Interpersonal problems	Lack of emotion
Experience group	Ethnic minority	Before	17.47±8.10	4.19±1.81	4.81±2.48	1.88±1.94	3.23±2.20	3.05±1.90
		After	23.56±4.33	6.2±1.04	5.33±1.46	2.88±0.81	4.05±1.54	4.12±1.28
	Han nationality	Before	15.37±8.25	4.25±2.1	3.95±2.52	1.41±1.32	3.14±2.04	2.39±1.98
		After	22.32±4.33	6.12±1.14	4.98±1.54	2.68±0.77	3.53±1.64	4.04±1.24
Control group	Ethnic minority	Before	12.35±6.24	2.81±1.25	3.41±1.99	1.44±1.37	3.13±1.87	1.65±1.66
		After	21.97±5.41	5.81±0.81	4.55±1.52	3.07±1.05	3.60±2.65	3.97±1.29
	Han nationality	Before	9.54±4.05	2.88±1.11	2.56±1.74	1.02±0.99	1.88±1.52	1.20±1.37
		After	19.94±3.77	5.72±1.01	4.24±1.15	2.48±0.75	2.98±1.84	3.60±6.48

### The increment of depression score was compared between the two groups

As shown in Table 2, subtract the pre-test scores from the post-test scores of the depression scores of the students in the experimental group and the control group, and conduct an independent sample difference comparison test on the increment of the depression scores of the two groups. The results showed that after chorus teaching, the increment of the total score of depression in the experimental group was significantly lower than that in the control group. The main effect of participating in the experiment was significant, but the national main effect was not significant. Whether to

accept music teaching or not has no significant interaction effect with nationality. Specifically, in the increment of negative emotion, the increment of negative emotion score of the experimental group is significantly lower than that of the control group. The main effect of participating in the experiment is significant, and the national main effect is not significant. Whether to accept music teaching or not has no significant interaction effect with nationality. The incremental differences of self-efficacy, somatization and interpersonal problems were not significant. In the lack of emotion, the main effect of participating in the experiment is significant, and the national main effect is not significant.

**Table 2.** Depression score increment of the two groups

Factor	Experience group		Control group	
	Ethnic minority	Han nationality	Ethnic minority	Han nationality
Depression score	6.31±6.48	6.97±6.65	9.52±4.81	10.42±4.86
Negative emotions	2.06±2.05	1.89±1.91	3.02±1.22	2.86±1.32
Self efficacy	0.54±2.18	1.06±1.96	1.19±1.64	1.7±1.99
Somatization	1.02±1.56	1.28±1.37	1.65±0.98	1.48±1.11
Interpersonal problems	0.85±2.02	0.41±2.06	0.49±2.03	1.12±1.91
Lack of emotion	1.09±1.91	1.67±1.88	2.34±1.27	2.42±1.38

### The influence of chorus on the loneliness of Han and minority students

Compare the scores of the two groups of students before and after the test, and then investigate the sense of loneliness through the independent sample *t*-test. The comparison of the increment of the scores of the two groups of students' sense of loneliness is shown in Table 3. After chorus teaching, there was no difference in the increment of the total score of loneliness between the two groups. The main effect of participating in the experiment was not significant, and the national main effect was not significant. There is no significant interaction between acceptance of chorus teaching and nationality.

### A test on the difference of pre and post test scores of depressions, loneliness and well-being among students of different nationalities

Score increment results of depression, loneliness and well-being in the experimental group, as shown in Table 4. Before and after the intervention, there was significant difference in the increment of well-being ( $P < 0.05$ ), while the incremental comparison of other factors was not statistically significant. The results show that after the intervention, the happiness of Han students is significantly higher than that of ethnic minorities, and the happiness of ethnic minority students is more and more superior.

**Table 3.** Incremental difference test of loneliness score

Factor	Experience group		Control group		
	Ethnic minority	Han nationality	Ethnic minority	Han nationality	
Loneliness	Pre test score	35.18±11.96	34.63±11.32	30.96±10.23	30.03±7.50
	Post test score	35.67±11.79	33.06±9.15	32.33±12.72	28.87±8.20
	Incremental score	0.49±6.43	-1.58±8.84	1.38±8.09	-1.17±7.79

**Table 4.** The difference test of pre-test and post test scores of depressions, loneliness and well-being between Han and minority students in the experimental group

Increment	Ethnic minority	Han nationality	t
Depression increment 1	6.31±6.48	6.96±6.64	-0.465
Depression increment 2	6.33±6.63	7.14±5.36	-0.737
Depression increment 3	-0.11±6.13	-0.19±3.51	0.077
Solitude increment 1	0.49±6.47	-1.58±8.84	1.151
Solitude increment 2	1.22±10.06	-1.53±7.97	1.487
Solitude increment 3	-0.73±6.31	-0.06±6.97	-0.463
Happiness increment 1	-0.42±1.41	0.14±1.12	-2.130
Happiness increment 2	-0.15±0.84	0.06±0.93	-2.13*
Happiness increment 3	-0.29±1.03	0.08±0.94	-1.688

## DISCUSSION

This research is carried out through the teaching of chorus course, and takes the indicators of anxiety and depression as the research content. This study shows that the students in the experimental group who have accepted chorus courses have significantly alleviated their depression compared with the control group who have not accepted chorus courses, and there is no statistical significance in the comparison of students' well-being and alienation. This study shows that after teaching, the increase of depression score in the experimental group is significantly lower than that in the control group, which is mainly reflected in two aspects: negative emotion and lack of emotion, and then depression has been improved to some extent, indicating that chorus courses can significantly reduce students' depression symptoms. This result is consistent with the research results of literature (Wang et al. 2020).

Chorus courses can effectively reduce students' depression. This study believes that there are two possible reasons: (1) Chorus courses enable students to get good self-expression and emotional release. Studies have shown that depression is mainly characterized by low mood, loss of interest and pleasure, thus increasing fatigue and reducing vitality (Ford & Almeida 2017). It can also be seen from the results of the study that students are very interested in chorus, especially ethnic minority students, who prefer and accept such courses than Han students. Ethnic minority students have more opportunities to express themselves in music classes. (2) In chorus teaching, students are divided into groups, mainly to improve students' ability of communication and exchange, shorten the distance between people, and increase the friendship between young people. Research shows that music can dredge the tacit understanding

between depression patients, alleviate the distress and pain of bad emotions, enhance individual self-confidence, and promote the mental health development of adolescents (Lexandrino-Silva 2019).

The results show that the chorus teaching has certain teaching significance, and significantly alleviates the depressive symptoms of the experimental group. However, the depression score of the control group has not been improved, which reflects that there is a difference between accepting and not accepting chorus teaching. Due to the large number of final examination subjects, students' fatigue and nervous tension are easy to aggravate their depression. Therefore, colleges and universities should strive to tap the chorus mode close to students' life, so that students' body and mind can be adjusted and their healthy growth can be promoted.

The results show that after chorus teaching, there is no significant difference in the increment of loneliness scores between the two groups, and the intervention has no significant effect on students' loneliness. During the teaching process, it is observed that students spend more time actively speaking and show more positive emotions, but students' sense of loneliness has not improved significantly. This may be due to the lack of communication time, less interaction and less time for after-school activities. In this experiment, it is found that the data results of happiness smiling faces are not statistically significant. Most students feel the same happiness. It is worth noting that compared with Han students, minority students have a higher happiness index. However, the research results can be analyzed that the college chorus teaching method can increase the sense of happiness and identity to some extent. The results show that compared with Han students, minority students prefer music courses. At the same time, the experimental results also show that the mental health of most students can not only be greatly improved after

chorus teaching, but also be conducive to the inheritance and development of minority music among people.

## CONCLUSIONS

The increment level of the pre-test and post-test of the depression degree of the students in the experimental group is significantly lower than that of the control group, which is mainly reflected in the negative emotion and lack of emotion. This shows that the chorus course can not only effectively reduce the depression degree of the minority pupils, but also reduce the depression degree of the Han pupils. There is no difference in the increment of scores between the pre-test and post-test of loneliness in the experimental group and the control group, indicating that there is no significant correlation between chorus courses and loneliness. The minority students in the experimental group have significantly higher scores of well-being than the Han students, and their love for music lessons is also significantly higher than the Han students. Chorus courses can effectively promote the mental health level of primary school students, especially in reducing depression, improving well-being and their love for music lessons. The chorus teaching intervention of 8 classes a month has had a positive impact on the mental health of minority and Han students, but it needs a long time of continuous training to improve students' mental health more effectively and permanently.

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**Contribution of individual authors:**

Yuan Yan: conception and design of the manuscript and interpretation of data, literature searches and analyses, clinical evaluations, manuscript preparation and writing the paper;

Ang Mei foong: made substantial contributions to conception and design, literature searches and analyses, participated in revising the article and gave final approval of the version to be submitted.

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