

# Art and Mental Health: Application and Effectiveness of Art Healing

Weiwei Wang<sup>1,2</sup>, Linglin Zhang<sup>3</sup>, Yiyang Chen<sup>4</sup>, Yushun Chen<sup>4,\*</sup>

<sup>1</sup> Science and Technology College Gannan Normal University, Ganzhou Jiangxi, 341000, China

<sup>2</sup> University of Perpetual Help System DALTA, Manila 1740, The Philippines

<sup>3</sup> Hong Kong Huanu Investment Immigration Consulting Co., Ltd, Hong Kong, 999077, China

<sup>4</sup> Cavite State University, Indang 4100, The Philippines

\* Corresponding author: Yushun Chen

**Abstract:** Mental health is fundamental to an individual's general well-being and ability to work effectively. A trial carried out on college/university students in Ganzhou, Jiangxi Province showed that the mental health of college students could be improved by art healing. The changes in the scores of SCL-90 before and after the trial can be seen that the experimental group had a significant improvement in total score from pre-intervention to post-intervention. For the specific factor items, the anxiety, hostility and additional items were more significant improvements, however, phobia anxiety, paranoid ideation and psychoticism did not show significant differences between pre-intervention and post-intervention. Overall, close to half of the students showed a significant difference in their mental health compared to the pre-trial, and this treatment effect was more pronounced for students with mental health issues. Female students, on the other hand, demonstrated a more positive healing effect than male students. The students in the experimental group showed a reduction in positive psychological symptoms after the art therapy intervention, but did not yet show "effective" results in terms of grade reduction rates. Therefore, a long-term, larger-scale, and more comprehensively designed follow-up trial is necessary to improve the mental health of college students.

**Keywords:** Art; Mental Health; Healing; Therapy; Empirical Research Effectiveness.

## 1. Background

A significant percentage of Chinese college students suffer from symptoms of depression and anxiety, and mental health problems are more prominent especially among students nearing graduation. Research shows that 18.5% of college students are vulnerable to depression, 4.2% are at high risk of depression, and 8.4% are vulnerable to anxiety [1]. Academic pressure, employment pressure and interpersonal relationship problems are important factors leading to mental health problems among college students, among which, emotional problems in interpersonal relationships are the primary problems troubling college students [2].

A person's physical attributes can be roughly assessed by his appearance, but direct observation of a person's appearance cannot accurately assess mental health. Instead, through their participation in social activities and exposure to art experiences, they can demonstrate their ability to understand and transform the world, and thus understand their mental health. Art not only directly expresses the creator's inner feelings, but also releases subconscious stress and bad emotions, so art is used in psychotherapy. Compared with other forms of psychotherapy, art therapy has the advantages of simple operation, easy acceptance, wide range of therapeutic targets and easy to reduce the defense consciousness of the visitors. Since both emotion and art are controlled by the right brain, many studies have found that art therapy plays a prominent role in dealing with emotional disorders, especially mild to moderate depression [3] [4] [5]. In China, the researches of Art Healing (or are therapy) have achieved some results [6] [7], but are still in the beginning and exploration stage. Most of the researches focus on descriptive qualitative studies [8][9], and mostly focus on individual cases [10] [11] and the educational scope of the

courses [12] [13], and the researches for college students and people with higher education are even more rare.

In order to understand the current mental health problems faced by Chinese college students and the mental health treatments they are exposed to, as well as the impact of art education on their mental health, the author conducted A trial on the impact of art education on the mental health of college students in colleges and universities in Jiangxi Province, China.

## 2. Methods

### 2.1. General Information and Participants

The participants were recruited through sojourn and social media to Science and Technology College Gannan Normal University. Of course, there are also other universities. Data collection was carried out from December 2023 to February 2024.

The study examined professors' and students' perceptions of artists' art education at Science and Technology College Gannan Normal University. Art education's impact on university students' cognitive well-being was also examined. Artist encounters and their effects on college students' mental health needed to be identified to improve art students' mental health. This was achieved by prioritizing the students' capacity to assume accountability for their own mental well-being, hence enhancing the strategies employed by instructors in delivering arts education. The project aims to provide a program plan for college students that fosters a more inclusive, engaging, and transformative atmosphere for arts education. The survey included college students and arts teachers from the arts department of Science and Technology College Gannan Normal University for the academic year 2023 - 2024. The participants utilized the redesigned survey questionnaire

administered by the researcher using the WeChat application for easy accessibility and analysis.

At Gannan Normal University's Science and Technology College, Art majors made up the study's subjects. For the sake of convenience and random selection, the poll will include 258 students, spanning the years of sophomores, juniors, and seniors. As of recently, 55 educators were employed by Science and Technology College Gannan Normal University. During the second half of the 2023–2024 academic year, online surveys were used to collect the data and information.

## 2.2. Trial Design

The trial aimed to study the effectiveness of art therapy in the treatment of mental problems in college/university

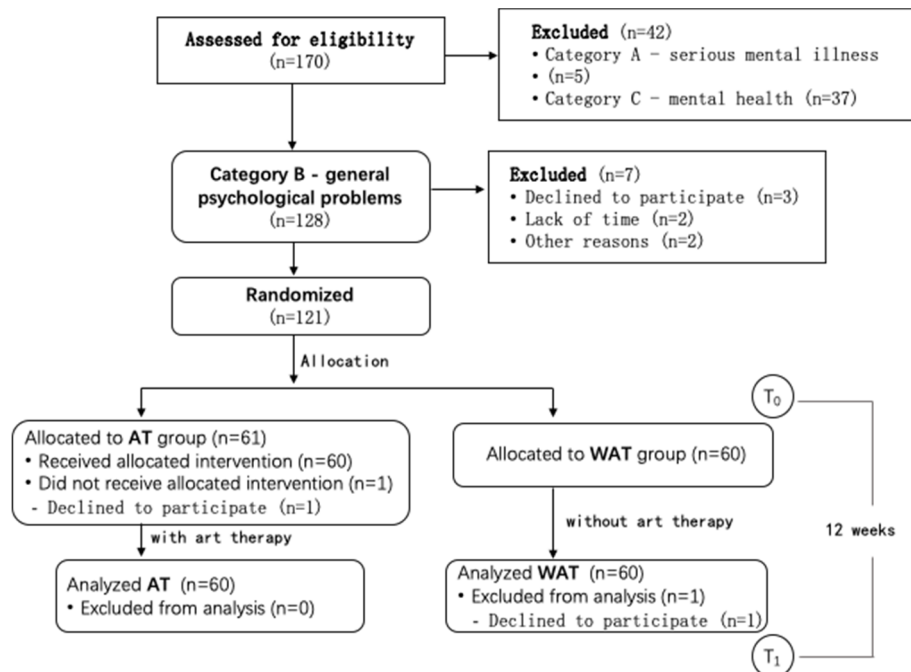


Figure 1. Trial flow diagram

The control group did not participate in any activities related to art healing while the art group received a 12-week art healing classes. The art sessions were scheduled twice a week for 60 minutes, with a total of 24 sessions, including 14 individual sessions and 10 group sessions. The AT group was further randomly divided into 6 teams of 10 students each, with each team selecting a leader to act as teachers' assistant and coordinate the work of the team members. Every three sessions, students were allowed to interpret their artworks to team members. The art media used could be watercolors, oil brushes, crayons, charcoal pencils, clay, and so on.

## 2.3. Assessment Tools

### 2.3.1. Assessment of Volunteer Screening

The Symptom Check List 90 revised version (SCL-90-R) [14] compiled by L. R. Derogatis was used to assess the volunteers' comprehensive mental health from the four major dimensions of interpersonal relationships, thinking and cognition, mindfulness and emotion, and physical behavior.

The SCL-90 usually reflects an indicator of a person's mental health in the most recent week, with 90 entries, including somatization(F1), obsessive-compulsive(F2), interpersonal sensitivity(F3), depression(F4), anxiety(F5), hostility(F6), phobia anxiety(F7), paranoid ideation(F8), psychoticism(F9), and other additional items(F10). Each

students.

A total of 170 volunteers were recruited for this trial, which were pre-categorized into three strata based on the results of the pre-intervention questionnaire: Category A - serious mental illness, Category B - general psychological problems, Category C - mental health, and subsequently Category B randomly assigned to an experimental group receiving art therapy (AT group) or a control group without art therapy (WAT group). Both groups were measured at baseline (pre-test/T<sub>0</sub>) and after the intervention time at 12 weeks (post-test/T<sub>1</sub>). It was showed that the students in two groups were not statistically significant in terms of age, gender, major, art preferences and skills.

entry ranges from 1 (none) to 5 (very severe), with a range of 90-540 points, with higher scores on each item and the total score indicating more severe symptoms. A total score of 160 or less is considered emotionally normal, 160-225 is considered mildly abnormal, 225-315 is considered markedly abnormal, and a total score greater than 315 is considered severely abnormal.

The screening criteria for the student samples in this trial are: (1) total score 140-300; (2) number of positive items 44-70; (3) mean score of positive symptoms 1.5-3.5. Those who meet the above three items are selected as experimental members.

### 2.3.2. Measurement of Pre-test and Post-test

Before the beginning of the trial and after the end of the trial, SCL-90-R was used again to assess the students in the AT group and the WAT group respectively.

## 2.4. Statistical Analysis

Psychological data was analyzed using SPSS v.28.0.0(IBM Corp., 2023) [15]. The psychological data are presented as mean ±SD (standard deviation). For a comparison of T<sub>0</sub> and T<sub>1</sub> in each group, T tests for paired samples in the same group and for independent samples between two groups were performed. Statistical significance was assumed for P<0.05.

**Table 1.** List of Art Healing Curriculum

Session	Subject	Type	Aims	Exercises
Session 1-3	Adapt to the environment	Individual /group	Setting treatment goals and plan Creating a feeling of safety Promoting interaction and cooperation among members	Creating an art learning file and filling out a wish card Free art work (Expression of feeling in free drawing/painting), includes non-dominant hand and dominant hand doodling Group drawing game: solitaire drawing
Session 4-12	Release emotional and stress	Individual /group	Promoting relaxation Reinforcing connection with feeling Analyzing the sources of one's own bad moods Recognizing and accepting oneself Discovering one's uniqueness	Drawing: • Color exercises with pastel. • Shape drawing (loops) • Tree drawing • Pressure drawing • Time discs • Brain and palm • My worries • Me in my mind • Me in the others' mind • Atmospheric images in relation to inner feeling, with pastel drawing. Clay: • Clay modeling of a sphere. • Clay modeling of platonic solids. • Transformation of (symbolic) shapes.
Session 13-20	Improve mood and interpersonal relationships	Individual /Group	Promoting relaxation Reinforcing self-confidence Experiencing boundaries Enhancing team cohesion	Drawing: • Shape drawing (loops). • Power drawing • Drawing from observation. • Light-dark exercises with charcoal. Painting: • Expression of feeling in free painting. • Color exercises in wet-on-wet technique (aquarelle paint on wet paper). Clay: • Group ceramics making: "Happy home".
Session 21-22	Plan for career	Group	Reinforcing self-confidence Strengthening objectivity	Drawing: • Group Drawing : "Ideal Career" and "Workplace Stories" Clay: • Group ceramics making : "Looking to the future".
Session 23-24		Individual /group	Reinforcing self-confidence Gaining a sense of understanding and identity	Team members giving feedback on others' artworks Writing down and share their feelings and gains from their artworks.

### 3. Results

The differences in the factor scores and total scores between the experimental group and control group, were not statistically significant either before or after the trial; after the intervention, the differences between the scores of the AT group and the pre-trial were statistically significant ( $P < 0.05$ ) for all items except for the three items of terror,

paranoia, and psychotic symptoms, as shown in columns AT<sub>0</sub> & AT<sub>1</sub> in Table 3. However, there was still no significant difference in the scores of the WAT group compared to the pre-experimental period.

#### 3.1. Comparison of the Differences between the Experimental Group and the Control Group Before and After the Trial

**Table 2.** Changes in factors and total scores of each group before and after the trial

Items	AT <sub>0</sub>		AT <sub>1</sub>		WAT <sub>0</sub>		WAT <sub>1</sub>	
	Means	SD	Means	SD	Means	SD	Means	SD
F1	1.805	0.401	1.645	0.436	1.829	0.458	1.834	0.403
F2	2.076	0.565	1.856	0.52	2.051	0.583	1.96	0.558
F3	2.088	0.402	1.933	0.397	2.129	0.444	2.211	0.424
F4	1.957	0.468	1.777	0.423	1.949	0.533	1.889	0.548
F5	1.992	0.402	1.669	0.372	1.965	0.383	1.97	0.408
F6	2.025	0.475	1.745	0.52	1.947	0.476	1.917	0.541
F7	1.782	0.433	1.692	0.398	1.669	0.431	1.624	0.431
F8	2.026	0.481	1.866	0.446	2.006	0.576	1.981	0.521
F9	1.698	0.359	1.643	0.379	1.747	0.311	1.732	0.316
F10	1.954	0.412	1.5	0.407	1.870	0.351	1.82	0.25
<b>Total scores</b>	<b>174.011</b>	<b>39.425</b>	<b>155.928</b>	<b>38.445</b>	<b>172.567</b>	<b>40.977</b>	<b>170.580</b>	<b>39.735</b>

Notes: the subscripts 0 and 1 in the group name indicate pre-test and post-test, respectively.

Table 2 showed the changes in SCL-90 total score and factor scores between the experimental and control groups before and after the trial, and it could be seen that the mean values of almost all items had decreased. Comparing the differences between the before and after changes, it showed that (see Table 3 for details) most of the performances of the AT group appeared to be improved to different degrees after 12 weeks of art therapy, among which the improvements of anxiety, hostility and additional items were more significant ( $P < 0.01$ ); somatization, obsessive-compulsive, interpersonal sensitivity and depression were the next most effective ( $P < 0.05$ ), and although phobia anxiety, paranoid ideation and psychoticism were also improved, the difference was not

significant ( $P > 0.05$ ).

The experimental results showed a significant improvement ( $P = 0.0136$ ) in total score from pre-intervention ( $T_0$ ) (174.011 points  $\pm 39.425$  SD) to post-intervention ( $T_1$ ) (155.928 points  $\pm 38.445$  SD) in the AT group. In the control group, in contrast, no significant improvement ( $P = 0.7884$ ) in total score from  $T_0$  (172.567 points  $\pm 40.977$  SD) to  $T_1$  (170.58 points  $\pm 39.735$  SD) was found (see Table 2 and Table 3).

The data in columns  $WAT_0$  and  $WAT_1$  in Table 2, and in the columns  $WAT_0$  &  $WAT_1$  in Table 3, showed, after 12 weeks, although the items scores of SCL-90 decreased in the control group, none of them were significantly different ( $P > 0.05$ ).

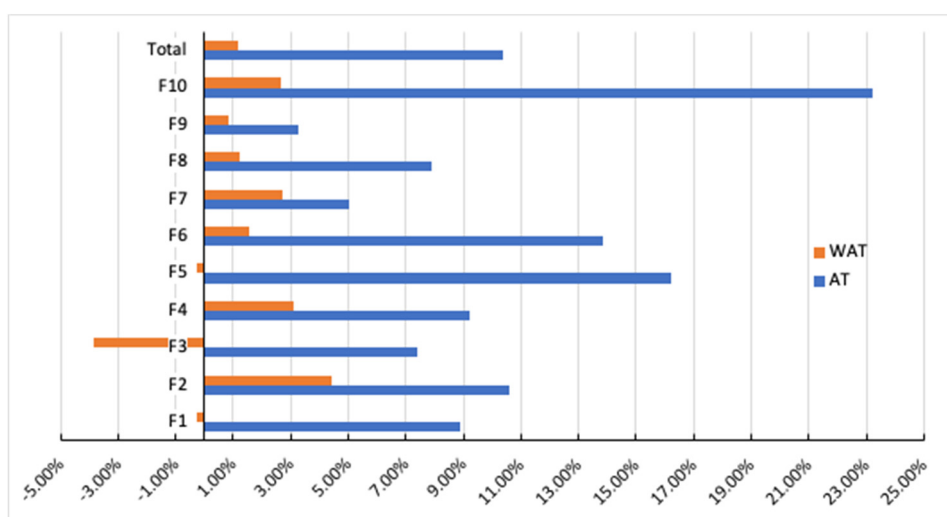
**Table 3.** Comparison of the significant differences between the groups before and after the experiment

Items	$AT_0$ & $WAT_0$		$AT_0$ & $AT_1$		$WAT_0$ & $WAT_1$		$AT_1$ & $WAT_1$	
	t	P	t	P	t	P	t	P
F1	-0.3039	0.7617	-2.0922	0.0407	0.0635	0.9496	-2.4562	0.0155
F2	0.2375	0.8127	-2.2193	0.0303	-0.8735	0.3860	-1.0514	0.2952
F3	-0.5278	0.5986	-2.1250	0.0378	1.0346	0.3052	-3.6907	0.0003
F4	0.0869	0.9309	-2.2102	0.0310	-0.6080	0.5456	-1.2466	0.2150
F5	0.3752	0.7082	-4.5680	0.0000	0.0692	0.9451	-4.2034	0.0000
F6	0.8947	0.3728	-3.0795	0.0031	-0.3225	0.7482	-1.7677	0.0797
F7	1.4267	0.1563	-1.1854	0.2406	-0.5719	0.5696	0.8938	0.3733
F8	0.2054	0.8376	-1.8894	0.0638	-0.2493	0.8040	-1.2925	0.1987
F9	-0.7962	0.4275	-0.8161	0.4177	-0.2621	0.7942	-1.3922	0.1665
F10	-1.2022	0.2317	-6.0723	0.0000	-0.8987	0.3725	-5.1774	0.0000
Total	0.1958	0.8451	-2.5436	0.0136	-0.2696	0.7884	-2.0438	0.0432

### 3.2. Comparison of Changes between the Experimental Group and the Control Group before and after the Trial

As can be seen in Figure, the scores of the experimental group and the control group improved before and after the trial, but the magnitude of the improvement varied. Compared

with the control group, the experimental group showed particularly significant improvements ( $p < 0.001$ ) in additional items, anxiety and interpersonal sensitivity after 12 weeks of art classes, and improvements in the somatization item and total score were also significant ( $p < 0.05$ ). However, there was no significant difference in the improvement of other items ( $P > 0.05$ ).



**Figure 2.** Comparison of the score reduction rate of each group after the trial

Notes: Rate of score reduction = (pre-treatment score - post-treatment score)/pre-treatment score. It is generally considered that a score reduction rate of  $\geq 50\%$  is considered effective, and  $\geq 25\%$  is considered effective.

From data in, the score reduction rate in both groups, whether in the total score or each factor score, did not exceed 25%. The score reduction rates in the experimental group were all positive, indicating that the mental health symptoms of students in the experimental group were reduced after the

intervention. However, the factor “additional items”, which had the highest reduction rate, was only 23%, and the other factors were all below 20%. The WAT group, in contrast, not only did not show any significant improvement, but even showed negative values in somatization, interpersonal sensitivity, and anxiety. It indicated that in the control group, some students' symptoms of somatization and anxiety worsened, and their interpersonal relationships also became more sensitive without the intervention treatment.

### 3.3. Intervention Effect of the Experimental Group

Among the students who participated in the art healing trial, close to half of them showed a significant difference in their mental health compared with that before the trial. Among them, there were 3 cases with extremely significant intervention effects ( $P < 0.001$ ), accounting for 2.5% of the

overall experimental group. The number and percentage of those who showed a significant effect ( $P < 0.05$ ) was 39 cases and 32.8% while the more significant effect ( $P < 0.01$ ) occurred in other members with 16 cases and 13.4%. Although 61 cases with no significant effects ( $P > 0.05$ ), more than half (51.3%) of the overall, the vast majority of them showed different degrees of decline in their SCL-90 total and factors' scores.

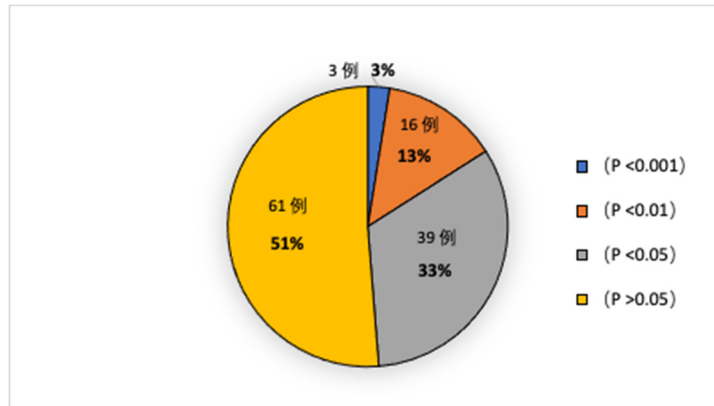


Figure 3. Intervention effects in the experimental group

The experimental group had a mean total positive score of 197.69 and a mean number of positive items of 62.68 before the intervention. After participating in the 12-week art healing program, the mean of the total positive score decreased to 166.4 points and the number of positive items decreased to 56.21 items, with a decrease of 15.83%, which was significantly higher than the overall level of the experimental group (10.32%), respectively. It can be seen that the positive symptoms of the students in the experimental group were significantly improved through art healing, and that the art course had a more therapeutic effect on the students with mental problems than on the ones without them.

Table 4. Changes in positive symptoms

Items	Pre-test Means	Post-test Means	t value	Rate of decline
Total Score	174.011	155.928	-2.544**	10.39%
Total positive item score	197.691	166.404	4.902***	15.83%
Number of positive items	62.68	56.21	-2.769*	10.32%

Notes: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

## 4. Discussion

Of the enrolled students, using the screening criteria for this study (see previous section), 128 students with general psychological problems accounted for 75.3% of all enrolled students (170). In various other studies, such students usually make up 30 to 40% of the college student population, and it is possible that this higher percentage in the present study is due to the fact that, in the recruitment phase prior to the start of the trial, students with mental health problems were more motivated than to enroll. During the preliminary phone calls, emails, and on-site interviews, their willingness to get help was higher than that of the average student. This positive problem-solving mentality is to some extent conducive to psychotherapy and treatment effects.

From the results of this study, obsessive-compulsive,

paranoia and anxiety are the psychological problems that exist more often among college students, which is also reflected in the tension of interpersonal relationships. Anxiety and depression are high prevalence psychological disorders among Chinese college/university students at present, and their prevalence rates are about 20%-30% and 15%-25%, respectively. What smore, they are often co-morbid, which aggravates their conditions. Anxiety items and depression items in the SCL-90 can directly assess students' anxiety or depression, but the symptoms of anxiety and depression are complex and diversified, so some symptoms in other factors may also be related to them. complexity and diversity, so some symptoms in other factors may also be related to them, such as obsessive-compulsive disorder, hostility, phobia, and interpersonal sensitivity and somatization. anxiety or depression often triggers interpersonal sensitivity, and this psychological stress in turn manifests itself through physical symptoms.

It can be found from the trial that, the risk of depression among male students is slightly higher than that of female students, while the risk of anxiety among female students is slightly higher than that of male students, which is similar to the findings of other studies [16]. In addition to the physiological and external environmental factors that lead to such differences, the psychological reasons lie mainly in the fact that, the females are more delicate and sensitive emotionally, and are more prone to feel the fluctuation of emotions and stress, and to produce anxiety, but they are more inclined to express their emotions outwardly and to seek help, which can alleviate the symptom of depression to a certain extent. Men's tendency to suppress their emotions, on the other hand, is more likely to increase the risk of depression. This gender difference was also reflected in the process of conducting the trial and in the results, with female students showing more positive healing effects than male students.

Students from all majors showed improvements in their mental health after the 12-week fine arts program, but there were differences between majors. The percentage of students with significant ( $p < 0.001$ ) healing effects in each of the three majors, education, nursing, and business management,

exceeded the overall mean (48.7%). The education major topped all majors with a high percentage of 71.4% with significant healing effects. The nursing majors, while had a higher percentage of symptoms of depression and anxiety, ranked second with a significant treatment effect of 61.5% after receiving art therapy. The reason for this may be that students in these two majors need to deal with people more often, and although they face greater psychological pressure, they are more inclined to actively communicate and solve problems, which is more conducive to the release of emotional pressure. These students were also the most active in the treatment process and interacted more frequently with teachers and other students. In contrast to them, the treatment effects of students in both architecture and computer science majors were less than optimal, with only one and two students, respectively, showing significant differences in treatment effects before and after the trial. On the one hand, this may be caused by the fact that engineering and computer science majors deal more with computers or engineering projects and have less social activities and relatively weak interpersonal interactions; on the other hand, it may lie in the fact that engineering majors have relatively more difficult courses and higher academic pressure. These need further in-depth research.

In addition, due to the short intervention period of 12 weeks, there were more than half of the students who did not achieve a significant treatment effect in this trial. In terms of the score reduction rate of the experimental results, the groups did not achieve a significant healing effect in either the total score or the factor scores. Therefore, the effectiveness of art healing method in college students' mental health needs to be studied and observed more deeply for a longer period of time.

## 5. Conclusion

Overall, the art therapy program has a significant effect in relieving psychological stress, anxiety and depression of college students, and the emotional stability of college students is enhanced. Through art creation, students were able to better express and understand their emotions, and enhanced their self-knowledge and emotional regulation. Through group creative activities and artwork display and exchange, interaction between students increased, interpersonal relationships improved, and the level of students' loneliness decreased and self-confidence increased.

However, there are still some limitations in the current study, such as the small sample size, the single measurement method used in the study, and the design of the art curriculum needs to be optimized. Future research should further expand the sample size, adopt a more rigorous experimental design, and combine multiple assessment tools to provide students with a more comprehensive and in-depth mental health assessment, in order to obtain more convincing evidence to support the application of art therapy in college students' mental health.

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