

An Empirical Study on the Improvement of College Students' Positive Mental Characters through the Sandplay Course

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Abstract: In recent years, psychological crisis events have occurred frequently in colleges. Therefore, cultivating students' rational and calm, positive and upward attitude is the current focus of mental health education in colleges. This study aims to explore the intervention effect of sandplay courses on students' positive mental characters. Through the voluntary registration and matching of the public elective course platform, 35 students from a university were selected as subjects, including 17 students in the experimental group and 18 students in the control group. From March to July 2024, 16 weeks of sandplay course intervention was carried out in the experimental group, while no intervention was done in the control group. The scores of the Positive Mental Characters Scale for Chinese College Students (PMSCCS) and the Positive Mental Characters Self-Assessment before and after the intervention were statistically analyzed. Both the scale test ($t = -3.62, P < 0.01$) and self-assessment ($t = -3.86, P < 0.01$) of the experimental group had significant improvement in positive mental characters after the intervention, while the control group had no significant difference in positive mental characters scores before and after the intervention. The sandplay course can effectively improve the level of positive mental characters of college students. Schools and families should pay attention to and explore various channels to actively cultivate positive mental characters of college students, so as to lay a solid foundation for their future development and growth.

Keywords: Sandplay; Course; College students; Positive mental characters

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1. Introduction

Positive mental characters are an individual's positive evaluation and judgment of their own psychological traits, which is a relatively stable positive psychological trait formed on the basis of the interaction between innate potential and acquired environment^[1]. Domestic and foreign scholars generally believe that positive mental characters can change people's cognition, have a positive impact on individual behavior, and play an important role in the prevention of mental illness^[2]. In recent years, with continuous

changes in the world pattern and social environment, the personal survival pressure faced by teenagers is also increasing, and various psychological problems emerge in an endless stream. In 2023, the “China National Mental Health Development Report (2021–2022)” pointed out that the detection rate of depression risk in the age group of 18–24 years old was 24.1%, significantly higher than other age groups, and young people are a high-risk group for depression ^[3]. Maintaining the rational, peaceful, and positive mentality of young students has become a problem that universities have to face in the current mental health education work.

Sandplay technology was founded by Dora Kalff in 1956, which refers to the use of various models, sand, and other objects to shape a specific image, build a free, protected state of the environment, and then achieve creative intervention ^[4]. Group sandplay is the local innovation and development of sandplay in China. It emphasizes that in a safe, free, and protected sandplay environment, with the help of structured groups, participants are guided to self-exploration through planned and regular game settings under the general goal, and through sharing with each other, they can achieve self-awareness, acceptance, and enhancement of the self ^[5]. Research has shown that group sandplay can help college students improve their personality, reduce pressure, improve interpersonal skills, and enhance self-confidence ^[6].

As an important reserve force for national development, college students should have a positive mindset to cope with the changes of the times. Therefore, in the psychological education of colleges, in addition to paying attention to the complete personality growth of students, more attention should be paid to the psychological potential of students, especially the development of positive mental characters, by stimulating the internal positive strength of students to solve the academic and life difficulties they face, so as to achieve the all-round development of students. Different from the previous mental health education work in colleges and universities that focused on psychological problems as the main perspective, the current psychological work in colleges and universities has begun to pay more attention to the early prevention of psychological problems and crises. Improving the psychological quality of students and enhancing the ability of “psychological epidemic prevention” has become the focus of psychological work ^[7]. However, at present, the main channel to improve the psychological quality of college students is the public mental health education classroom teaching, but the actual public course teaching of psychological experience and behavior training is seriously insufficient, which has little effect on the daily improvement of self-psychological quality ^[8]. Therefore, in order to improve their experience and behavior training, sandplay technology with high experience and self-healing can be combined with course teaching to improve students’ initiative and participation, so as to achieve the purpose of improving their positive mental characters ^[9]. Currently, there are relatively few researches on the effect of group sandplay technology on the positive mental characters of college students in China. The existing researches are mostly carried out in the form of theoretical exploration or group counseling ^[10,11]. In this study, by combining group sandplay with classroom teaching, the public elective course Sandplay Positive Quality Cultivation is set up to explore the application of group sandplay in improving the positive mental characters of college students.

2. Study subjects and methods

2.1. Study subjects

In this study, 17 experimental subjects were recruited independently through the school’s public course selection system, and they were pre-tested for positive psychological character traits through the use of the Positive Mental Characters Scale for Chinese College Students (PMCCS), while 18 subjects were screened and matched to the control group by randomly distributing the scale to sophomores and juniors. Finally, 35

subjects were determined, including 17 in the experimental group, who received two hours of group sandplay intervention every Wednesday afternoon for a total of 16 weeks, while 18 in the control group did not receive any intervention. There were 12 boys and five girls in the experimental group, among which 12 were sophomores and five juniors, with an average age of 20.18 ± 1.02 years old. There were eight boys and 10 girls in the control group, among which nine were sophomores and nine juniors, with an average age of 20.11 ± 1.08 years.

2.2. Research tools

2.2.1. Positive Mental Characters Scale for Chinese College Students

The scale was compiled by Meng and Guan ^[12], with a total of 62 questions and six dimensions, including cognitive dimension (A1), emotional dimension (A2), interpersonal dimension (A3), justice dimension (A4), temperance dimension (A5), and transcendence dimension (A6). The 5-point scoring method of 1 (very like me) to 5 (very unlike me) was adopted. The higher the score of each dimension, the better the development of positive mental characters. In this study, the Cronbach's alpha of this scale was 0.97.

2.2.2. Self-Assessment of Positive Mental Characters

Positive Mental Characters Self-Assessment form had a total of 24 questions, the experimental group was required to self-score 24 positive mental characters under six dimensions. It adopted a 0–10 points scoring method, the higher the score, the better the quality.

2.2.3. Sandplay equipment

The setup included three standard sandboxes measuring $57 \times 72 \times 7$ cm, four sand shelves, over 5,000 various model items, a camera, and multiple copies of group sandbox game record sheets.

2.2.4. Group sandplay course intervention

The experimental group received a total of 16 weeks of Sandplay Positive Quality Cultivation course learning, once a week for about two hours each time, the specific course learning content is shown in **Table 1**, while the control group did not receive any intervention. In the formal course, due to the limitation of the sandbox, the experimental group was divided into three groups, with six, six, and five participants in each group. In the formal course, the content and tasks assigned to each group were identical. During the practical implementation, each session was structured around 1–2 positive mental characteristics to set the theme. Participants were required to engage in the sandbox activity without verbal communication. In each round, participants were allowed to place only one model or a maximum of three models at a time. They were prohibited from moving or altering other participants' models during the placement process. The order of placement was determined by drawing lots. Each session consisted of five rounds of the game, followed by a sharing and discussion phase within and between groups. **Figure 1** illustrates a selection of the sandbox creations produced during these sessions.

Table 1. Course content structure chart

Chapter names	Teaching credit hours	Course content topics	Teaching methods
Chapter 1: Introduction	2	Group building	Group counseling
Practical lesson 1: Cognitive dimension positive character cultivation	6	Creativity	Group sandplay practice
		Curiosity and love of learning	Group sandplay practice
		Cultivate the quality of thinking and observation	Group sandplay practice
Practical lesson 2: Emotional dimension positive character cultivation	4	Sincerity and enthusiasm	Group sandplay practice
		Brave and persistent	Group sandplay practice
Practical lesson 3: Interpersonal dimension positive character cultivation	6	Feeling love	Group sandplay practice
		Love and kindness	Group sandplay practice
		Social intelligence	Group sandplay practice
Practice lesson 4: Justice dimension positive quality cultivation	4	Team spirit and leadership	Group sandplay practice
		Integrity and fairness	Group sandplay practice
Practical lesson 5: Temperance dimension of positive character cultivation	4	Tolerance and modesty	Group sandplay practice
		Prudence and self-control	Group sandplay practice
Practical lesson 6: Transcendence dimension positive character cultivation	4	Spiritual touch and humorous	Group sandplay practice
		Hope and faith	Group sandplay practice
Final examination	2	Individual sandplay production	Individual sandplay practice



The willow is dark and the flowers are bright



Strange Journey of the Mind



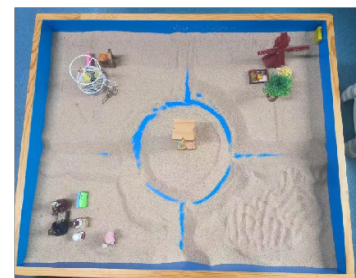
Small town in construction



Time



The same blue sky



Growth

Figure 1. Part of the sand table game works

2.3. Statistical processing

SPSS26.0 statistical analysis software was used to analyze the collected pre-test and post-test data of the experimental group and the control group, and the difference in positive mental characters between the two groups before and after intervention was compared by ANOVA and *t*-test.

3. Results

3.1. Differences in positive mental characters between the experimental group and the control group before intervention

As shown in **Table 2**, the average score of positive mental characters in both the experimental group and the control group before course intervention was significantly lower than the mean value 3 ($t = 23.49, P < 0.001$). Through one-way ANOVA on the scores of the experimental group and the control group on the positive mental characters scale before the course intervention, it was found that there were no significant differences in the total score of positive mental characters and scores of each dimension between the two groups.

Table 2. Pre-test univariate ANOVA of the experimental group and the control group (mean \pm standard deviation [SD])

Dimensions	Experimental group	Control group	<i>F</i>	<i>P</i>
Average score of A1	2.15 \pm 0.65	2.20 \pm 0.61	0.07	0.79
Average score of A2	2.02 \pm 0.64	2.16 \pm 0.58	0.45	0.51
Average score of A3	2.22 \pm 0.62	2.28 \pm 0.56	0.09	0.77
Average score of A4	2.33 \pm 0.74	2.42 \pm 0.67	0.13	0.72
Average score of A5	2.51 \pm 0.78	2.44 \pm 0.61	0.10	0.76
Average score of A6	2.08 \pm 0.62	2.28 \pm 0.50	1.15	0.29
Overall average score	2.22 \pm 0.60	2.30 \pm 0.53	0.16	0.69

3.2. Differences in positive mental characters before and after the intervention in the experimental group and the control group

As presented in **Table 3**, through the paired sample *t*-test on the scores of the positive mental characters scale of the experimental group before and after the course intervention, it is found that after 16 weeks of group sandplay intervention, the overall status of positive mental characters in the experimental group and the four dimensions of cognition, emotion, justice, and transcendence have significantly improved, and the change margin is significant in the dimension of temperance. In the interpersonal dimension, the changes were not significant. The control group showed no significant difference in all dimensions and total score of positive mental characters before and after measurement (**Table 4**).

Table 3. Paired *t*-test in the experimental group (mean \pm SD)

Dimensions	Pre-test	Post-test	<i>t</i>	<i>P</i>
Average score of A1	2.15 \pm 0.65	2.66 \pm 0.54	-4.67	0.000
Average score of A2	2.02 \pm 0.64	2.30 \pm 0.51	-2.92	0.010
Average score of A3	2.22 \pm 0.62	2.46 \pm 0.74	-1.72	0.110
Average score of A4	2.33 \pm 0.74	2.75 \pm 0.64	-3.00	0.010

Table 3 (Continued)

Dimensions	Pre-test	Post-test	<i>t</i>	<i>P</i>
Average score of A5	2.51 ± 0.78	2.80 ± 0.57	-2.02	0.060
Average score of A6	2.08 ± 0.62	2.39 ± 0.42	-3.27	0.005
Overall average score	2.22 ± 0.60	2.57 ± 0.47	-3.62	0.002

Table 4. Paired *t*-test in the control group (mean ± SD)

Dimensions	Pre-test	Post-test	<i>t</i>	<i>P</i>
Average score of A1	2.20 ± 0.61	2.21 ± 0.60	-0.18	0.86
Average score of A2	2.16 ± 0.58	2.14 ± 0.52	-0.27	0.79
Average score of A3	2.28 ± 0.56	2.26 ± 0.57	-0.44	0.67
Average score of A4	2.42 ± 0.67	2.26 ± 0.53	1.08	0.30
Average score of A5	2.44 ± 0.61	2.47 ± 0.44	-0.36	0.73
Average score of A6	2.28 ± 0.50	2.26 ± 0.47	0.39	0.70
Overall average score	2.30 ± 0.53	2.27 ± 0.47	0.68	0.51

3.3. Comparison before and after intervention of the experimental group on the self-assessment of positive mental characters

As demonstrated in **Table 5**, through the paired sample *t*-test on the self-rating score of positive mental characters of the experimental group before and after the course intervention, it is found that after the group sandplay course intervention, the self-rating score of the experimental group in the overall status of positive mental characters and the five dimensions of cognition, emotion, interpersonal, justice and transcendence has significantly improved, and the self-rating of the temperance dimension has significantly changed.

Table 5. Paired *t*-test before and after intervention of the experimental group (mean ± SD)

Dimensions	Pre-test	Post-test	<i>t</i>	<i>P</i>
Average score of A1	6.19 ± 1.94	7.13 ± 1.47	-2.95	0.009
Average score of A2	6.06 ± 2.23	7.60 ± 1.55	-5.18	0.000
Average score of A3	5.92 ± 2.43	7.37 ± 1.55	-3.41	0.004
Average score of A4	5.76 ± 1.95	6.88 ± 1.79	-2.57	0.020
Average score of A5	5.59 ± 2.73	6.62 ± 1.60	-2.05	0.057
Average score of A6	6.62 ± 2.39	7.59 ± 1.82	-2.50	0.020
Overall average score	6.02 ± 1.98	7.20 ± 1.51	-3.86	0.001

4. Discussion

Positive psychology research has found that people with positive mental characters are full of expectations for life or the future, can adjust themselves in time when faced with negative emotions, and positively cope with difficulties, so they are more likely to solve difficulties and achieve success^[13]. College students are in the delayed period of entering society independently. Cultivating positive mental characters can effectively improve

their ability to cope with life events, maintain a positive mental state, and better complete self-improvement. Positive mental characters play an important psychological supporting role in shaping and forming the core values of college students^[14,15]. Our research results found that the overall positive mental characters of college students in the experimental group and the control group were poor and did not reach the average level, which may be due to the fact that the recruitment of subjects in the experimental group was made by students applying for courses independently. Therefore, students who were really lacking in positive mental characters were more likely to choose courses, which made the subjects of the course concentrated. The control group was selected to match the experimental group, more consistent in positive mental character traits, which further explains the importance of improving college students' positive mental characters.

The research results found that the positive mental characters of college students changed significantly before and after the intervention of Sandplay Positive Quality Cultivation course, although it did not reach the average level, it was greatly improved. Whether it was scale test or self-assessment, it was found that the overall level of positive mental characters and the scores of cognition, emotion, justice, and transcendence were significantly improved. This is consistent with the research results of Jiang *et al.*^[5], and the margin of improvement is significant in the dimension of temperance, indicating that sandplay courses have improved the level of positive mental characters of college students to a certain extent, which also indicates that individual psychological quality is not fixed and can be shaped through effective intervention. Interpersonal dimension was not significantly improved in the scale measurement, but significantly improved in the self-assessment. The possible reason for this difference is that the sandplay principles of “no evaluation, no judgment, and emphasis on feeling and company” enable the experimental subjects to establish equal and inclusive interpersonal relationships in the interactive experience and achieve skill improvement under the nourishment of benign interpersonal interaction. Individual psychological perception can better tolerate and know others^[16], but in actual interpersonal interaction, due to the limitations of time, class, and environment, the improvement of interpersonal dimension shown in the scale test is not significant, while the change in self-assessment is significant.

The Sandplay Positive Quality Cultivation course takes group sandplay technology as a means, takes positive psychology as a theoretical basis, combines experiential teaching, narrative therapy, and other technologies, and allows participants to reintegrate cognition and experience emotions in the process of creating and telling stories one by one in a thematic style and continuously recognize the positive skill quality, so as to achieve the ability to improve their own psychological quality. The combination of experiential teaching and group sandplay enables students to discover their new ability to adapt to society and form a positive attitude towards life with new feelings and understanding^[9].

5. Conclusion

Curriculum construction plays a vital role in mental health education. In recent years, the state has issued a number of policies and systems, emphasizing the role of classroom teaching as the main channel in mental health education^[17]. However, the vast majority of public courses of mental health education in colleges and universities are faced with many challenges, such as being unsustainable, available only for freshmen, unable to take into account the needs of different students at all levels, and single teaching forms^[18]. Therefore, in order to give full play to students' subjective initiative in the classroom, some public elective courses with both experience and education and wide coverage should be established, so as to improve students' mental

health quality and application skills. This paper studied the integration of sandplay technology into the course teaching of public elective courses in mental health education. Based on the theory of positive psychology, the experiential intervention of group sandplay has improved students' positive mental characters in many dimensions. Therefore, schools and families should jointly pay attention to and explore various channels to actively cultivate the positive mental characters of college students, laying a solid foundation for their future development and growth.

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