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Evaluating Single-Session Art Healing Workshops: Effects on Anxiety and Mindful Awareness across Diverse Chinese Community Settings

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Abstract: Single-Session art healing programs, which aims at deploying arts to enhance psychological well-beings of individuals, families and communities, have risen markedly in popularity across China recently. However, research on the effects of single-session art healing programs in China is still limited, likely because the development of art healing programs is still in the nascent stage. We embedded a series of (4 activities) single-session art healing workshop in large outdoor art and culture festivals and on-campus events open to university students. Each of the four workshops centred on one modality, such as oil-painting, doodling, music or dance. A pre-post quasi-experimental design was applied, with 26 participants completing surveys using the State-Trait Anxiety Inventory (STAI-S-6) and Mindful Attention Awareness Scale (MAAS). We used paired t-tests to analyze the changes of STAI-S-6 and MAAS scores before and after each intervention. Participants predominantly comprised by women (80.8%), young adults (18-30 years, 50%), and highly educated individuals (with bachelor's degree or above, 85%). The study showed a significant reduction in state anxiety ($p = 0.003$). After intervention, all four groups showed improvements on mindfulness levels, though no significant change ($p > 0.05$) was identified. This study provides evidence supporting the feasibility and effect of single-session art healing interventions in alleviating state anxiety among general populations in art healing practice in China and highlighted the importance of integrating art healing, public activities, and mental health services for better mental care.

1. Introduction

In 2021, 359 million people in the world were affected by anxiety disorders, representing the most common of all mental disorders, which drives a growing and urgent demand for evidence-based, effective, and scalable mental health interventions [1]. In addition, empirical evidence identified major life stressors, specifically interpersonal conflict, early-life adverse events, socioeconomic disadvantage, and experiences of social rejection [2], as among the most potent proximal predictors of incident anxiety and depressive disorders. This urgently requires mental

health interventions focused on rebuilding social-connection rebuilding, ensuring cultural responsiveness, and gaining community acceptance.

Art healing programs, which aims at deploying arts to enhance well-beings of individuals, families and communities, have risen markedly in popularity across China in recent years. Especially during and after the COVID-19 pandemic, individuals have become increasingly attentive to their mental health [3-5]. Art healing programs are diverse in forms, a 2025 Chinese study identified over 60 distinct art modalities [6]. In contrast to countries where art therapy is a licensed heath profession, China still lacks an official career path for art therapists [7-9]. Consequently, although some art-based programs in China integrate art-making activities with psychotherapeutic components, they are rarely delivered by registered psychotherapists or art therapists. Instead, art healing interventions are often facilitated by counsellors and artists who have also completed training in both art therapy and counseling skills. From another perspective, art can be integrated into health promotion in diverse modalities. For example, Arts on Prescription (AoP), which launched in the United Kingdom (UK) in 1995, enables health and social care practitioners to refer people to community-based, artist-led groups as an adjunct to conventional care for aiding recovery and well-being [10]. To date, China has yet to see a sustainable, large-scale program that closely integrates arts and health nationwide or within a single region, while cross-regional art healing initiatives are now emerging.

Regarding art healing program in China, single-session art healing or art based workshops are among the most frequently implemented formats; they require neither long-term commitment nor prior art-making skill, thereby offering participants a convenient venue to engage in mental health support [11,12]. Abundant research has demonstrated that single-session art-based interventions exerted positive effects on emotional state and psychological well-being. For instance, Monaco et al. demonstrated that a brief art-based intervention effectively alleviates immediate anxiety and boost positive emotions through non-verbal and creative expression [13]. Similarly, Isis et al. (2024) found that a single mindfulness-art therapy session (i.e., doodling) notably improved participants' mindfulness levels[14]. However, research on single-session art healing programs in China is still limited, likely owing to the nascent stage of art healing in China. Additionally, public awareness of these interventions remains low, with biased view against group-counseling workshops for psychological well-being, including art therapy[15]. In China, research integrating mindfulness practice and art healing are also growing, focusing on specific groups such as university students and people of lower socio-economic status. These studies suggest that integrative interventions can enhance mental health and foster positive traits including self-acceptance and optimism[16,17].

Moreover, the current literature on art healing in China is predominantly situated within clinical and academic settings, exhibiting minimal penetration into community-based public programming. This constrains population-level visibility and is insufficient to facilitate the widespread diffusion of art-healing acceptance across the broader public [15]. As compared with art healing intervention series, current studies in China on art healing still provide little details on how single-session workshops are designed and what effects they have on community-dwelling adults.

Therefore, this study explored the effects of art healing interventions delivered through single-session workshops, by quantifying the changes in state anxiety and its short-term impact on mindful awareness. Additionally, the study compares intervention effects across activity scenarios and communities that use different art modalities, for example, painting-only sessions versus those combined with music or dance healing strategies.

2. Methods

2.1. Research Design

This study used convenience sampling and distributed survey questionnaires to participants who participated in single-session art healing activities, which led by research team from September 2024 to October 2025. This study employed a retrospective pre-post single-group design (RPP), to assess the intervention's effect [18]. RPP has been used in previous studies on art therapy group counseling [14]. Participants retrospectively evaluate their pre-intervention state and assess their current post-intervention state in one single survey, comparing changes over time. We obtained written consent from the participants before they started the survey. IRB approval was obtained from Guangxi Medical University.

2.2. Sample

We enrolled adults (≥18 years) who had taken part in at least one of the following art-healing activities designed and organized by our research team: (1) multi-session workshops embedded in an art festival in Beijing, China; (2) an art healing workshop integrated into a local cultural festival in Nanning, China; (3) art healing workshops conducted in a non-profit organization in Nanning, China; or (4) dance and drama healing workshop in Nanning, China. Eligible participants were invited to complete the survey voluntarily.

2.3. Procedures

This study embedded art healing experiences into the context of a large outdoor art and culture festivals, as well as workshops supported by non-profit organizations including both working adults and university students; all art healing activities were conducted under the guidance of experienced art therapists/psychotherapists. The first three activities utilized painting as the primary artistic modality for therapeutic practice; the activity 4 mainly focused on dance and drama healing. Music and dance healing were also available in activity 1. During each activity, materials for art-making, such as oil pastels, markers, acrylic paints, watercolor paper, and wooden boards were provided.

Each activity follows the similar procedure. First, the instructor briefly explained the basic concepts of art healing to the participants. The instructor then guided participants through mindfulness exercises (such as breath awareness), which helped enhance their awareness of the present moment and enabled them to engage more deeply in the artistic creation process. Next, instructors guided participants in individual or group art-making, such as oil pastel painting, casual doodling by markers. For Activity 4, participants followed the instructions, imitating each other’s movements, expressing themselves using body languages through improvisational dance and acting out the drama to the music. Participants were invited to share their emotions and stories, guided by instructors. At the end of each event, participants completed a structured online questionnaire assessing the intervention’s impact.

2.4. Measures

2.4.1. State-Trait Anxiety Inventory (STAI)

Developed by American psychologist Spielberger et al, the STAI consists of two subscales: State Anxiety and Trait Anxiety [19]. This study uses the short version of the State Anxiety subscale (State-Trait Anxiety Inventory-6) to measure an individual's state anxiety[20]. The short version consists of 6 items, scored on a 4-point Likert scale. Some items require reverse scoring (e.g., “I

feel calm"), while negative items (e.g., "I feel upset") are scored directly. The total score ranges from 6 to 24 points, with higher scores indicating higher anxiety levels. The State-Trait Anxiety Inventory Short Form (STAI-S-6) used in this study has demonstrated good reliability and validity in the Chinese population [21] validated the scale on 1,203 Chinese adults, yielding a Cronbach's α coefficient of 0.84 and test-retest reliability of 0.76 (two-week interval).

2.4.2. Mindful Attention Awareness Scale (MAAS)

Developed by American psychologists Kirk Warren Brown and Richard M. Ryan in 2003 [22], the MAAS measures an individual's level of attention awareness and mindfulness toward daily experiences. This study used the short version with 5 items (e.g. "I find myself doing things without paying attention."), which was assessed using a 7-point Likert scale [23]. Scoring principles involve summing the scores of each item, with a range from 7 to 35 points, where higher scores indicate higher levels of mindful attention awareness. Previous studies have also confirmed the applicability of this scale in Chines population. For example, Chen et al. (2012) reported an Cronbach's α coefficient of 0.81 in a sample of 1,085 Chinese college students, with confirmatory factor analysis meeting fit criteria (CFI = 0.93, RMSEA = 0.06) [24].

2.4.3. Other Variables

The demographic characteristics included in the questionnaire are gender, age group, occupation, education level, marital status, and annual household income. In addition, we investigated the specific forms of art healing workshop (e.g., art/music healing) and their art healing experiences in the past week. Open-ended question were asked for feedback for each activity.

2.5. Statistical Analysis

Data analyses were conducted using statistical software Excel and SPSS 27.0. The study involved descriptive statistical analysis, paired-sample t-tests, and qualitative analysis. Specifically, descriptive statistical analysis was used to summarize the sample characteristics (e.g., gender, age, educational background, marital status, household income, occupation, art healing experience). The paired-sample t-test was applied to compare changes in participants' mindfulness levels (MAAS) and state anxiety (STAI-S-6) before and after the intervention. Qualitative analysis was based on the feedback collected from participants through open-ended questions, focusing on attitude toward the activities and suggestions regarding activity design, venue environment, and other aspects.

3. Results

A total of 26 valid subjects were included in this study. The gender composition of the participants was predominantly female (21, 80.77%); most participants were in the age group of 18-30 years accounting for 50.0% of the total sample, and age group of 31-40 years accounting for 38.46%. Education level was generally high, with 12 participants (46.15%) reporting a bachelor's degree and 10 participants holding a master's degree or higher. Participants who were married (11, 42.31%) slightly outnumbered unmarried participants. In terms of the annual household income, 42.31% participants were in the lower income bracket (≤100k yuan). Eleven participants were students (42.31%), and six of them (23.08%) identified themselves as freelancers; the remaining occupation fields included corporate management, education, and healthcare. The majority of participants (65.38%) had previous experience with painting healing in this research, and only 3 participants (11.54%) engaged in other forms of art healing in the past week (Table 1).

Table 1: Descriptive statistical analysis of sample characteristics (N=26).

Item	Category	Frequency	Percentage
Gender			
	Male	5	19.23%
	Female	21	80.77%
Age Group			
	18-30	13	50.00%
	31-40	10	38.46%
	41 and above	2	7.69%
Education			
	High school diploma or below	4	15.38%
	Bachelor's degree	12	46.15%
	Master's degree or above	10	38.46%
Marital Status			
	Unmarried	15	57.69%
	Married	11	42.31%
Annual Household Income			
	100,000 RMB or below	11	42.31%
	100,000–200,000 RMB	9	34.62%
	200,000–500,000 RMB	3	11.54%
	500,000 RMB and above	3	11.54%
Occupation			
	Human resources	1	3.85%
	Finance/Accounting/Cashier/Audit	1	3.85%
	Business manager	1	3.85%
	Service Industry Personnel	1	3.85%
	Freelancers	6	23.08%
	Students	11	42.31%
	Teachers	1	3.85%
	Medical/Healthcare	1	3.85%
	Other	3	11.54%
Have you ever experienced any other art healing activities in the past week?			
	Yes	3	11.54%
	No	23	88.46%

The average STAI score prior to the art healing activities was 13.04, with a relatively high standard deviation (SD=4.30). Participants in Activity 3 reported the highest average STAI score at 15.63. This indicates that the initial anxiety levels of this population were generally high. After the intervention, the total STAI scores for all four activities decreased by more than 10%, with Activity 2 showing the most significant effect in alleviating anxiety, with STAI score decreased by 34.29%. In addition, the standard deviation of the pre- and post-test differences was slightly high (SD = 5.12), indicating diverse experience among different individuals regarding the intervention effects. Additionally, MAAS score prior to the art healing varied across four groups (mean = 15.08, SD = 6.55). After the intervention, the average mindfulness levels of the four groups increased to some extent, with Activities 2 and 3 showing relatively higher increase (Table 2).

This study used paired-sample t-test to evaluate the effects of art healing activities on change in participants' mindfulness levels (MAAS) and state anxiety (STAI-S). The results showed significant

anxiety decrease, with an average decrease of 2.92 points (t = 3.36, p = 0.003). However, there was no significant change on mindfulness levels (mean difference = 0.24 [SD=3.47], p = 0.732). Results were consistent across four groups. The art healing activities exerted a significant effect on alleviating the emotional state of anxiety (Table 3).

Table 2: Descriptive analyses of STAI and MAAS scores before and after art healing activities.

Item	Activity Name	N	Mean	SD
STAI Total Score -pre	Activity 1	7	9.57	4.28
	Activity 2	5	14	4.36
	Activity 3	7	15.63	2.45
	Activity4	7	13.14	4.02
	Total	26	13.04	4.30
STAI Total Score -post	Activity 1	7	8.57	3.55
	Activity 2	5	9.2	3.35
	Activity 3	7	12.43	3.95
	Activity4	7	10.00	3.79
	Total	26	10.12	3.79
STAI Total Score -difference (post- pre)	Activity 1	7	-1	3.11
	Activity 2	5	-4.8	5.12
	Activity 3	7	-3.29	5.47
	Activity4	7	-3.14	4.18
	Total	26	-2.92	4.44
MAAS Total Score -pre	Activity 1	6	14.67	7.82
	Activity 2	5	17.6	7.37
	Activity 3	7	16.86	5.67
	Activity4	7	11.86	5.58
	Total	25	15.08	6.55
MAAS Total Score -post	Activity 1	7	16.86	9.28
	Activity 2	5	18.4	5.60
	Activity 3	7	17.86	6.31
	Activity4	7	11.86	5.79
	Total	26	15.32	6.08
MAAS Total Score -difference (post-pre)	Activity 1	6	-0.83	4.17
	Activity 2	5	0.8	4.32
	Activity 3	7	1	4.00
	Activity4	7	0.00	1.73
	Total	25	0.24	3.47

Note: The total sample size for pre-intervention MAAS was n=25 with one missing data point in Activity 1). Missing values were handled using pairwise deletion in the paired t-test analysis.

Table 3: Paired-sample t-test for pre and post-tests.

	Pre	Post	t statistics	P value
STAI-S-6	13.22±4.26	10.19±3.73	3.36	0.003
MAAS-5	15.35±6.56	15.15±6.02	-0.35	0.73

Note: Abbreviation: STAT-S-6: State-Trait Anxiety Inventory-State-6; MAAS-5: Mindful Attention Awareness Scale-5.

Regarding the open-ended questions, 46.2% of participants provided valid feedback. Among these responses, most participants expressed positive attitudes toward the activities. In addition, some participants offered valuable suggestions. For example, participants in Activity 1 pointed out:

“This type of activity should be conducted more often.”

“I hope more similar activities can be organized to experience the charm of art healing.”

“It would be better if the design of activities could be more in-depth.”

Participants in Activities 2 and 3 pointed out issues regarding the environment where the art healing activities conducted, for instance,

“(the organizers) should consider shade (sun protection)”;

“The space of the venue is limited and not very aligned with the theme.”

Participants in Activities 4 also shared suggestions for the venue and expressed their appreciation for the event, such as,

“Adding decorations like flowers and plants to the space”;

“I gained a lot and hope to see more of this”;

“It was relaxing and immersive.”

4. Discussion

A nascent contribution of this study is the evaluation of single-session art-healing workshops that embeds art-based therapeutic practices within diverse Chinese communities via public events such as art festivals. By leveraging public events, this approach systematically boosts art healing awareness in Chinese communities to promote broader acceptance. Furthermore, the research encompasses multiple art healing modalities, including painting, dance movement, and mindfulness-based practices, offering a relatively comprehensive perspective on its real-world implementation. An additional strength of this study is that effects were assessed in everyday community contexts rather than in controlled trials, thereby capturing public responses to art healing.

Regarding participant characteristics, the sample was predominantly composed of women, young and middle-aged adults, and highly educated individuals, reflecting high demand for, and acceptance of psychological interventions within this subpopulation. This aligns with the characteristics observed in recent studies on art healing in China [6,15]. It also suggests that future studies could expand sample coverage to include more male participants, individuals with lower educational attainment, and diverse age groups, thereby enhancing the generalizability of the findings.

In addition, the significant effect of art healing on state anxiety (STAI total score decreased by an average of 2.84 points, $p=0.016$) confirms single-session art healing workshop as an immediate emotional regulation tool. The notable 34.29% reduction observed in Activity 2 may be attributed to the relaxed and open atmosphere of the art festival, as well as the emotional resonance and expressive space afforded by the art-making process. Additionally, the majority of participants were young (aged 18-30), unmarried and highly educated (bachelor's degree or higher), who exhibited concentrated life stressors and were highly open to new ideas that may partially explain the intervention’s efficacy in reducing state anxiety. However, the variability in intervention effects underscores the need to account for individual differences in their responsiveness to art healing practices. In contrast, no significant changes were observed in mindfulness levels (measured by the MAAS-5), possibly because mindfulness takes time and effort to develop, and a single intervention may be insufficient to exert substantial changes. This view also supported by the research of Van Lith (2021), Duan (2023), and other scholars [25-28]. Future studies could explore the long-term effects of art healing through sequential intervention designs.

Regarding open-ended questions, most participants expressed positive attitudes toward the intervention and proposed suggestions such as increasing the frequency and depth of interventions, in addition to optimizing facility conditions. This highlights the importance for organizers to

balance content design with environmental optimization—for instance, adding shading device—to improve participants' experience. Moreover, we conducted art healing workshops across regions, with the design considering both the context of local culture and the characteristics of the target participants; this approach is consistent with recent studies. For example, Kalmanowitz and Ho (2017) noted that their art-healing and mindfulness studio was expressly designed with the cultural background of their participants [29].

This study has several limitations. The limited sample size (N = 26) may constrain the statistical power and limit the generalizability of the findings to broader populations. Second, as a real-world evidence study, the potential impacts of confounding factors on intervention effects could not be completely excluded. Third, the study adopted a Retrospective Pre-Post Design (RPP), with data collection relying on participants' subjective self-reports, which may be subject to recall bias or social desirability bias due to individual differences in memory and perception. These limitations highlight the need for future studies to incorporate larger sample sizes, more standardized data collection procedures, and more rigorous research designs (e.g., randomized controlled trials).

5. Conclusions

This study provides evidence supporting the feasibility and effect of single-session art healing interventions in alleviating state anxiety among general populations in art healing practice in China. It contributes new insights and empirical data to research on the psychological benefits of art healing strategies. In addition, this study provides empirical evidence for developing an art-healing theoretical framework suited to China's sociocultural context. Practically, its activity-design framework, implementation procedures, and evaluation methods offer a reference for future community and cultural initiatives in China. These findings advance health-service development by demonstrating the value of integrating art-healing practices, public activities, and mental-health services.

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(2) Disclosure Statement

The authors report there are no competing interests to declare.

(3) Data Availability Statement

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

(4) Ethics Approval and Consent to Participate

This study was approved by the Institutional Review Board of Guangxi Medical University, China(Approval No. KY20240158). Written informed consent was obtained from all individual participants included in the study.

(5) Authors' Contributions

ZW: Conceptualization, Data curation, Formal analysis, Writing - original draft, Writing - review & editing

FX: Conceptualization, Investigation, Project administration, Writing - original draft, Writing - review & editing

LQL: Investigation, Project administration

CYL: Project administration, Resources

CYH: Project administration, Resources
XR: Project administration, Resources
All authors reviewed the manuscript.

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