CrossMark

Art therapy based on appreciation of famous paintings and its effect on distress among cancer patients

Jeongshim Lee[1] · Mi Yeon Choi[2] · Yong Bae Kim[1] · Jiyu Sun[3] · Eun Jung Park[2] · Ju Hye Kim[2] · Minchul Kang[2] · Woong Sub Koom[1,4] ⬤

Abstract

Purpose We aimed to evaluate the effectiveness of art therapy based on appreciation of famous paintings on the distress of cancer patients receiving radiotherapy. In particular, we focused on anxiety, depression, and cancer-related symptoms.

Methods Between October 2015 and February 2016, cancer patients receiving radiotherapy were recruited prospectively to participate in the art therapy based on famous painting appreciation. The art therapy took place in two parts comprising 4 sessions of famous painting appreciation and 4 sessions of creative artwork generation; these sessions were performed twice weekly over four weeks. Cancer-related distress was measured using the Hospital Anxiety and Depression Scale (HADS), Hamilton Depression Rating Scale (HDRS), and Edmonton Symptom Assessment Scale (ESAS) at three points: before the art therapy began, after the fourth session of art therapy, and after the eighth session.

Results Of the 24 enrolled patients, 20 (83%) completed all eight sessions. We observed significant improvements in HADS anxiety and total scores over time according to linear mixed models with Bonferroni corrections (all $p < 0.05$). Furthermore, HDRS scores demonstrated significant decreases according to linear mixed models ($p = 0.001$). Fewer patients met the HADS or HDRS criteria for severe anxiety or depression after the intervention. We observed no changes in ESAS mean scores.

Conclusions Art therapy based on famous painting appreciation significantly improved cancer-related anxiety and depression and reduced the prevalence of severe anxiety and depression during cancer treatment.

Keywords Cancer · Distress · Painting appreciation · Art therapy

✉ Woong Sub Koom
  mdgold@yuhs.ac

1 Department of Radiation Oncology, Yonsei Cancer Center, Yonsei University College of Medicine, Seoul, Republic of Korea

2 Graduate School of Clinical Art Therapy, CHA University, Pocheon, Gyeonggi-do, Republic of Korea

3 Department of Biostatistics, Yonsei University College of Medicine, Seoul, Republic of Korea

4 Cancer Information Center, Yonsei Cancer Center, Yonsei University Health System, Seoul, Republic of Korea

Introduction

Cancer is well known to be an exhaustive disease with a chronic course, and its extensive consequences can lead to significant impairments in patients' physical and mental well-being [1, 2]. Distress, considered a counterpart of well-being, has been deemed the sixth vital sign that requires regular monitoring among cancer patients, along with heart rate, respiration, blood pressure, temperature, and pain [3]. The National Comprehensive Cancer Network (NCCN) has defined cancer-related distress as "a multifactorial unpleasant emotional experience of a psychological, social, and/or spiritual nature that may interfere with the ability to cope effectively with cancer, its physical symptoms." Furthermore, it has been described as extending "along a continuum, ranging from common normal feelings of vulnerability, sadness, and fears to problems that can become disabling, such as depression, anxiety, panic, social isolation, and existential and spiritual crisis" [4]. Distress has been shown to be associated with

poorer health-related quality of life and satisfaction with medical care, and even a lower survival rate [5].

The NCCN has recently emphasized the importance of distress management, which is consistent with an overall trend toward delivering more comprehensive care to cancer patients [4]. The recommended strategy for alleviating distress is connecting patients with various coping processes through psychosocial support programs. Several studies have suggested that cancer patients can benefit from certain complementary therapy or psychological interventions in conjunction with standard medical treatments such as surgery, chemotherapy, and radiotherapy (RT) [6, 7]. Of the various complementary psychological therapies in use, art therapy has been found to be effective for alleviating symptoms and improving patients' quality of life and ability to cope with distress [8–10]. However, to our knowledge, few studies have actually examined the effectiveness of art therapy for improving distress including anxiety and depression among cancer patients, especially those treated with RT [11].

Our aim was to assess the effectiveness of a form of art therapy that relies on appreciation of famous paintings for improving distress, particularly anxiety, depression, and various cancer-related symptoms among cancer patients.

Methods

Study design and study population

We conducted a prospective, single-arm trial using art therapy based on appreciation of famous paintings. Between October 2015 and February 2016, cancer patients receiving RT recruited prospectively to participate in the art therapy based on famous painting appreciation. The inclusion criteria were as follows: diagnosed with cancer, aged ≥18 years, scheduled to receive 4 or more weeks of external-beam RT, had good performance status (Eastern Cooperative Oncology Group Performance Status ≤1), could communicate verbally, and could understand the questionnaires used for collecting data. In contrast, the exclusion criteria were as follows: diagnosed with uncontrolled co-morbid medical or psychiatric illness; were administered antidepressant, sedative, or anxiolytic drugs; and had severe anemia (Hb <9 g/dL).

A physician assessed patients' eligibility for the study when they visited the outpatient clinic at the Department of Radiation Oncology to receive RT. If deemed eligible, the researcher introduced the study to the patients. If patients agreed to participate, they were referred to the clinical research coordinator, who explained the study procedure and obtained patients' informed consent for enrollment. Then, consenting participants underwent a baseline

evaluation by three art therapists, who trained using a standard manual in the art therapy program and administration of the chosen questionnaires, before initiation of this study. Thereafter, participants underwent art therapy eight times during RT and completed questionnaires individually before, during, and after RT. The same art therapist administered all questionnaires, as we expected that using the same art therapist would improve participants' psychological well-being by establishing an emotional rapport. The institutional review board approved the study protocol.

Procedure

Patients received RT five times per week, once a day. The art therapy administered in eight 30-min sessions over 4 weeks during RT, with 2 sessions per week. To reduce potential anxiety, the art therapy sessions were held in a separate, quiet, and reliably available room before RT. Each session comprised one-on-one interviews between trained therapists and patients. All patients were administered three questionnaires to measure distress at three different time points: before (pretest) the beginning of art therapy, after the fourth (mid-test), and eighth sessions (posttest). They gave 10 min to complete the questionnaires.

Art therapy based on appreciation of famous paintings

The art therapy based on appreciation of famous paintings comprised two parts: famous painting appreciation, delivered in odd numbered sessions (i.e., sessions 1, 3, 5, and 7), and creative artwork generation, delivered in even numbered sessions (i.e., session 2, 4, 6, and 8). The artworks utilized in the famous painting appreciation part of the therapy were classified into four subjects—landscape, portrait, still life or animalization, and abstract. These four subjects focused on a variety of structures and expressions, various person relations and self-image projections, different perceptions of the outside world and environment, and a diversity of colors and expression techniques, respectively. In each session, the patients selected and appreciated a famous work among six provided artworks of the same subject. The famous paintings were selected by a three-expert panel and three clinical art therapists according to the following criteria: (1) the degree of arousal of the emotional stimuli, (2) obtaining a combination of Oriental and Western paintings, and (3) eligibility of expression by patients in the creative artwork generation part of the therapy. The major focus in painting selection was ensuring a wide variety of emotional stimuli for patients, including both positive and negative emotions simultaneously. Indeed, the expression of depressed feelings enables

patients to overcome frustration and facilitate self-adjustment of their emotion [12]. Furthermore, we considered material diversity, ease of understanding and concentration, and smooth continuity with patients' own art work following appreciation. We considered highly popular paintings and artists with good reputations, as these could be more acceptable and understandable to patients. Overall, we selected paintings based on all of these considerations. The detailed contents of these famous works are listed in Table 1. All artworks were printed in resolutions of 300 dpi or higher and presented in real-size frames.

The creative artwork generation part of the therapy involved having patients generate their own artistic expressions in relation to the appreciated famous painting. During this creative activity, the patient was free to re-configure the painting without limitations with respect to the artwork's materials and techniques. Various materials such as canvas, 4B pencils, erasers, pencils, pastel, charcoal, acrylic paint, watercolor, ink, brushes, glue, scissors,

tape were provided. If the art materials were not familiar to patients, the therapist provided the necessary information about them, such as the characteristics of the art materials and techniques.

In each session, the art therapists progressed using a number of pre-defined steps. First, they performed the introduction steps, which involved (1) introducing the session topic (famous painting appreciation or creative artwork generation), (2) talking about the selected work or art materials/techniques, and (3) talking about the reasons for choosing the painting or art materials/techniques. Next, the activity steps were carried out, which included (1) exploring the work used in the painting or figuring out the patient's own painting and (2) talking about the patient's feelings in viewing the presented painting or in comparing the artworks both the famous paintings and patients' own paintings. Finally, they progressed through the conclusion steps, which involved (1) searching for a title and (2) discussing with the therapist the emotions felt before and after the activities.

Table 1 List of selected famous paintings

Session	Paintings (painter, the year)	Art materials
1st. Landscape painting	Poplars at the Epte (Claude Monet, 1990)	Oil on canvas
	Starry night (Vincent Van Gogh, 1889)	Oil on canvas
	Room by the sea (Edward Hopper, 1951)	Oil on canvas
	Wintry days (Jung-hee Kim, 1844)	Ink on Korean paper
	Slow landscape (Sundoo Kim, 2013)	Pigment on Korean paper
	Red mountain (Sang-Ryul Cho, 2015)	Pigment on Korean paper
3rd. Portrait painting	Brides walk under the apple trees (Henri Martin, unknown)	Oil on canvas
	Narcissus (Leonardo da Vinci, 1490)	Oil on canvas
	Winding the skein (Frederick Leighton, 1878)	Oil on canvas
	A family (Ucchin Chang, 1973)	Oil on canvas
	When any one of a woman 2 (Kyung-Ja Chun, 1985)	Pigment on Korean paper
	Mother and son (Soo Keun Park, 1985)	Oil on canvas
5th. Still life or animalization painting	Sunflowers (Vincent Van Gogh, 1888)	Oil on canvas
	Goldfish (Henri Matisse, 1912)	Oil on canvas
	Cow's Skull with Calico Roses (Georgia O'Keeffe, 1931)	Oil on canvas
	Yellow Cat and butterfly (Hongdo Kim, 1745)	Ink on Korean paper
	rhythm (Nosu Park, unknown)	Ink on Korean paper
	Universal object (Sungho Kim, 2011)	Acrylic on Korean paper
7th. Abstract painting	Untitled (Mark Rothko, 1957)	Oil on canvas
	Composition 7 (Wassilly Kandinsky, 1913)	Oil on canvas
	The sorrow of the king (Henri Matisse, 1952)	Collage
	Healing (Gilwoo Lee, 2015)	Mixed media
	Energy (perfume) (Song-dae Choi, 1998)	Pigment on Korean paper
	From Line (Ufan Lee, 1974)	Oil on canvas

Questionnaires

Psychological distress was assessed using the Hospital Anxiety and Depression Scale (HADS), particularly the anxiety and depression subscales [13], and the Hamilton Depression Rating Scale (HDRS), which assesses depression specifically [14]. The Edmonton Symptom Assessment Scale (ESAS) was used to assess distress related to cancer symptoms [15]. For all of the scales, a higher score represents worse symptoms. The HADS and ESAS were both self-report questionnaires, whereas the HDRS was completed by the therapist.

HADS is a 14-item inventory comprising 7 anxiety-related symptoms and 7 depression-related symptoms. Each symptom is measured on a 4-point scale, ranging from 0 (not at all) to 3 (extremely) in terms of severity. The total scores for the anxiety and depression subscales range from 0 to 21. Total scores of 0–7 were considered to indicate an absence of anxiety or depression, 8–10 as mild anxiety or depression, and above 11 as severe anxiety or depression [16]. The HDRS measures depression severity using 17 items. The HDRS has 9 items rated on a 0–4 scale including depressive mood, guilt, suicide, work and interests, agitation, retardation, psychic anxiety, somatic anxiety, and hypochondriasis, and 8 items rated on a 0–2 scale including initial insomnia, middle insomnia, delayed insomnia, gastrointestinal symptoms, general symptoms, loss of weight, loss of libido, and loss of insight. The total score ranges from 0 to 52, with scores of 0–6 indicating the absence of depression, 7–17 indicating mild depression, 18–24 indicating moderate depression, and above 25 indicating severe depression. The ESAS measures the average intensity of 10 symptoms related to cancer, including pain, fatigue, nausea, depression, anxiety, drowsiness, dyspnea, sleep disturbance, loss of appetite, and decreased well-being. Each symptom was rated in terms of intensity on a 0–10 scale. The total scores range from 0 to 100.

For this study, the reliability scale of Cronbach's alpha in the HADS, ESAS, and HDRS was 0.93, 0.96, and 0.87, respectively.

Data analysis

The questionnaires scores at each time point are expressed as mean ± standard deviations (SD). The change in scores was defined as the difference in questionnaire scores between the time points (pretest, mid-test, and posttest). We used linear mixed models to evaluate the significance of the score changes between the time points. In addition, Bonferroni corrections were used to control for multiple comparisons, which resulted from needing to perform several dependent or independent statistical tests simultaneously. SPSS Statistics 20 (IBM Corp., Armonk, NY, USA) was used for all statistical analyses. All statistical tests were two sided, with a significance level of 0.05.

Results

Baseline characteristics

Between October 2015 and February 2016, 24 cancer patients receiving RT were eligible to participate. Of these patients, four patients opted not to participate due to lack of interest. All 20 (83%) of the remaining patients completed all 8 sessions of the art therapy, taking part in 4 sessions of famous painting appreciation and generating 4 pieces of artwork. The median age at diagnosis was 54 years (range 32–79 years), and most patients were women (90%). The primary site of cancer was heterogeneous across participants, with breast cancer (45%) and rectal cancer (20%) being predominant. The mean interval between initiation of RT and diagnosis and the mean RT duration were 3 months (range 1–8 months) and 32 days (range 27–43), respectively. Surgery was performed on 13 patients (65%), and chemotherapy was administered to 9 patients (45%). Eight patients with breast cancer underwent hormone therapy. Almost all of the patients (80%) received curative-aimed RT. The detailed baseline characteristics are shown in Table 2.

Assessment of changes in questionnaire scores

Scores of the HADS subscales and total score at the three assessment points for cancer patients receiving RT with/without other treatment are shown in Table 3. We observed significant reductions in the anxiety subscale score from pretest to mid-test and posttest (6.4 ± 3.2 vs. 5.7 ± 3.5 vs. 5.2 ± 3.2, respectively, $p = 0.040$). Additionally, we observed changes in HADS total score over time as analyzed by linear mixed models (13.5 ± 5.1 vs. 12.2 ± 5.2 vs. 11.7 ± 5.9, respectively, $p = 0.044$, Fig. 1); after Bonferroni corrections, only the pre- and posttest differences were significant ($p = 0.037$). The mean HDRS score also significantly decreased from pretest to mid-test and posttest (10.4 ± 8.1 vs. 8.5 ± 4.5 vs. 5.2 ± 3.8, respectively, $p = 0.001$, Fig. 2). After employing Bonferroni corrections, we observed significant improvement in mean HDRS between pretest and posttest ($p = 0.030$). We observed no significant changes in most of the cancer-related symptoms, including depression and anxiety, measured by the ESAS, which resulted in no differences in the mean score of total distress (Table 4).

Table 2 Baseline characteristics of the study population (N = 20)

Variables	n	%
Age (years)		
Median (range)	54	(32–79)
Sex		
Male	2	10
Female	18	90
ECOG PS		
0	9	45
1	11	55
Interval between initiation of RT and diagnosis (months)		
Mean (range)	3	(1–8)
Primary cancer		
Breast	9	45
Stomach	1	5
Rectum	4	20
Anus	1	5
Prostate	3	15
Cervix	1	5
Primary unknown	1	5
Stage		
Stage 0	1[a]	5
Stage I	5	25
Stage II	3	15
Stage III	6	30
Stage IV	4	20
Unevaluable	1[b]	5
Disease status		
Initial diagnosis	16	80
Recurrent disease	4	20
Surgery		
Yes	13	65
No	7	35
Chemotherapy		
Yes	9	45
No	11	55
Hormone therapy		
Yes	8	40
No	12	60
Duration of RT (days)		
Mean (range)	32	(27–43)
Aim of RT		
Definitive	11	55
Postoperative	4	20
Preoperative	4	20
Salvage	1	5
Site of RT		
Head and neck	1	5
Breast or chest wall	9	45
Abdomen	3	15

Table 2 continued

Variables	n	%
Pelvis	7	35

ECOG PS Eastern Cooperative Oncology Group Performance Status, *RT* radiotherapy

[a] Ductal carcinoma in situ

[b] Primary unknown cancer

Assessment of changes in severity related to depression or anxiety

We assessed the changes in severity classifications of anxiety and depression according to the HADS and HDRS criteria as a result of the art therapy intervention. Of the 20 patients, 2 (10%) were considered to have severe anxiety according to the HADS at pretest, 1 (5%) at mid-test, and none (0%) at posttest. Furthermore, a decreasing proportion of patients could be classified as having severe depression, ranging from 15% at pretest to 5% posttest. Based on the scores measured by the HDRS, there was an overall decrease in the proportion of patients with moderate and severe depression from pretest to mid-test and posttest (20, 5, and 0%, respectively). Furthermore, there was an overall increase in the number of patients showing an absence of depression based on HDRS scores, with 8 at pretest, 7 at mid-test, and 13 at posttest. All detailed changes in severity classifications are shown in Table 5.

Discussion

Distress among cancer patients has been considered a consistent and difficult-to-manage problem [17], and the NCCN emphasized the necessity of its treatment in its Distress Management Guidelines Panel. One recommended reasonable and practical strategy for relieving distress is connecting patients to coping resources and psychosocial support programs, including complementary medicine, psychological counseling, patient education, support groups, cancer-related symptom management, and physical therapy, as well as spiritual support [3, 4].

Art therapy is a well-known modality of spiritual support therapy and complementary medicine [10, 18]. In this prospective, single-arm study, we assessed the effectiveness of art therapy based on appreciation of famous paintings in relieving the distress of cancer patients. Our results demonstrated that this form of art therapy led to improvement or maintenance of cancer-related distress

Table 3 Comparison of mean questionnaire scores at the three assessment points

| Variables	Pretest Mean ± SD	Mid-test Mean ± SD	Posttest Mean ± SD	p^a	Pretest vs. mid-test[b]	Pretest vs. posttest[b]
Hospital Anxiety and Depression Scale						
Anxiety scores	6.4 ± 3.2	5.7 ± 3.5	5.2 ± 3.2	0.040	0.159	0.024
Depression scores	7.2 ± 2.9	6.6 ± 2.6	6.5 ± 3.2	0.402	0.517	0.464
Total scores	13.5 ± 5.1	12.2 ± 5.2	11.7 ± 5.9	0.044	0.114	0.037
Hamilton Depression Rating Scale						
Total scores	10.4 ± 8.1	8.5 ± 4.5	5.2 ± 3.8	0.001	0.593	0.030

RT radiotherapy, *SD* standard deviation

[a] Linear mixed model

[b] Bonferroni correction
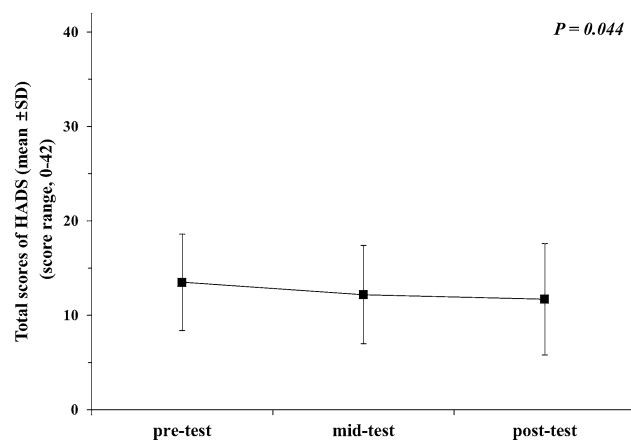
Fig. 1 Total mean scores of Hospital Anxiety and Depression Scale (HADS) at the three assessment points
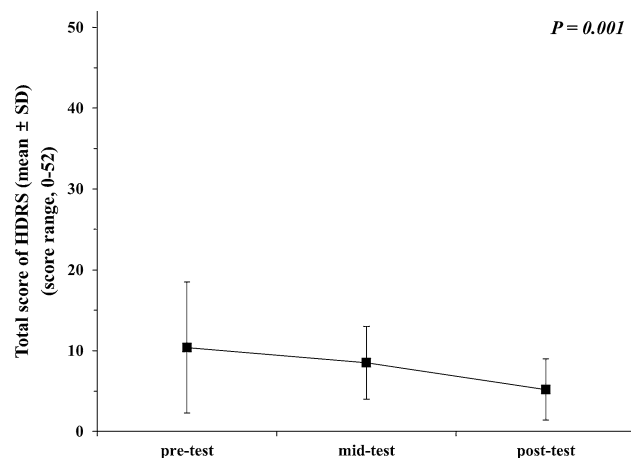
Fig. 2 Total mean scores of Hamilton Depression Rating Scale (HDRS) at the three assessment points

compared to baseline among patients throughout their treatment. These findings imply that such art therapy based on appreciation of famous paintings is a worthy adjuvant treatment for cancer in conjunction with medical treatments such as RT, surgery, chemotherapy, and hormone therapy. In our study, 65% of patients had undergone surgery before RT, 45% received RT in conjunction with chemotherapy, and 40% received RT with concomitant hormone therapy. Patients undergoing such multimodal treatments [19–21] are deemed particularly vulnerable to distress such as anxiety and depression. Nevertheless, our results suggest that art therapy is a suitable method of distress management for cancer patients, likely because it provides a mind–body interaction [3, 9, 22–25].

There are various art therapy interventions. The art therapy used in this study adopted a two-sided approach comprising famous painting appreciation and creative artwork generation. The famous painting appreciation component has been shown to encourage patients' relaxation, distract them from the disease, and promote their interest and enjoyment, all of which can lead to greater mindfulness [26]. Then, participants generated their own creative artwork associated with the appreciated famous painting within 7 days. Producing creative artwork is a form of creative psychological intervention that relies on the expressive qualities of the creative arts to effect personal change and thereby promote emotional, social, cognitive, and physical well-being [25]. We expected that the pairing of these two forms of art therapy—famous painting appreciation and creative artwork generation—with a qualified therapist would be helpful for exploring and better understanding the self, beyond providing amusement or creativity. Previous studies have reported that art therapy incorporating both visual art appreciation and hands-on creation of artwork was beneficial to patients with terminal cancer in hospice care; specifically, they exhibited significant improvements in their feelings and behaviors [27]. In the current study, the linear mixed models revealed that the art therapy led to significant changes in anxiety (HADS) and depression (HDRS), but not overall cancer-related symptoms (ESAS).

Table 4 Comparison of mean scores on the ESAS items at the three assessment points

Variables	Pretest Mean ± SD	Mid-test Mean ± SD	Posttest Mean ± SD	p^a	Pretest vs. mid-test[b]	Pretest vs. posttest[b]
Pain	1.9 ± 2.2	1.6 ± 1.6	1.7 ± 1.5	0.828	1.000	1.000
Fatigue	3.7 ± 2.1	3.3 ± 2.0	3.2 ± 2.0	0.410	0.924	0.377
Nausea	1.1 ± 2.0	2.1 ± 2.3	1.8 ± 2.1	0.049	0.031	0.236
Depression	2.7 ± 2.5	2.0 ± 1.9	1.9 ± 1.9	0.300	0.288	0.275
Anxiety	2.8 ± 2.5	2.3 ± 1.9	2.1 ± 2.0	0.303	0.717	0.298
Drowsiness	3.5 ± 2.8	2.5 ± 2.2	3.1 ± 2.1	0.198	0.187	0.759
Dyspnea	1.5 ± 1.7	1.4 ± 1.8	1.9 ± 1.8	0.242	1.000	0.232
Sleep disturbance	3.7 ± 3.2	3.1 ± 2.9	2.4 ± 2.7	0.142	0.251	0.106
Loss of appetite	3.2 ± 1.9	2.6 ± 2.3	2.8 ± 2.9	0.574	0.634	0.814
Decreased well-being	3.5 ± 2.6	3.1 ± 2.4	2.7 ± 2.3	0.356	0.912	0.391
Total scores	27.5 ± 17.5	24.0 ± 13.7	23.4 ± 17.3	0.362	0.374	0.367

ESAS Edmonton Symptom Assessment Scale, *RT* radiotherapy, *SD* standard deviation

[a] Linear mixed model

[b] Bonferroni correction

Table 5 Comparison of severity classifications for depression or anxiety across the three assessment points

Variables	Pretest n (%)	Mid-test n (%)	Posttest n (%)
Hospital Anxiety and Depression Scale			
Anxiety			
Absent	13 (65)	12 (60)	12 (60)
Mild	5 (25)	7 (35)	8 (40)
Severe	2 (10)	1 (5)	0 (0)
Depression			
Absent	10 (50)	12 (60)	11 (55)
Mild	7 (35)	7 (35)	8 (40)
Severe	3 (15)	1 (5)	1 (5)
Hamilton Depression Rating Scale			
Depression			
Absent	8 (40)	7 (35)	13 (65)
Mild	8 (40)	12 (60)	7 (35)
Moderate	3 (15)	1 (5)	0 (0)
Severe	1 (5)	0 (0)	0 (0)

We also evaluated the changes in classifications of severity of depression and anxiety among cancer patients across the intervention period, and found significant reductions in the prevalence of severe depression and anxiety. Previous studies have shown that most patients with cancer demonstrate psychiatric problems such as anxiety or depression in relation to their diagnosis and treatment [28], while 33% of patients with breast, lung, and colon cancer showed severe levels of anxiety and depression [29]. In clinical settings, although severe depression and anxiety have been recognized as major forms of emotional distress, their prevention and management in cancer patients have often been overlooked [24]. Although depression and anxiety are natural and normal reactions to the diagnosis and treatment of cancer, this should not preclude the provision of psychological care in accordance with their severity. In sum, our study demonstrated that severe emotional distress could be effectively treated with this art therapy intervention.

This study has several limitations. First, this was a single-arm study with a small cohort. In other words, we could not fully define the effectiveness of this intervention compared with patients receiving only conventional cancer treatment without art therapy, and the statistical power is limited. Second, there were doubtlessly confounding factors that would have influenced the results of the art therapy for cancer patients. For example, participants demonstrated considerable heterogeneity in illness and treatment modalities, especially administration of hormone therapy or chemotherapy, which would have influenced their distress levels. Third, it is difficult to predict the long-term effect of this form of art therapy because we did not conduct a follow-up assessment after the art therapy had ended. Finally, in our study, evaluator bias was presented throughout the study, as the questionnaire assessment was performed by the same art therapist. In particular, HDRS scoring made by the same therapist could add subjective bias and might lead to overestimation of the effect of art therapy as a tool for releasing depression. Overall, these limitations urge caution in interpreting the results.

Conclusions

In conclusion, we observed a significant reduction in distress as measured by the HADS and HDRS as a result of the art therapy intervention, although the ESAS scores showed no improvement. These results imply that art therapy based on appreciation of famous paintings can be an effective means of relieving cancer-related distress, particularly anxiety and depression. Art therapy might also lead to a decrease in the prevalence of severe cancer-related anxiety and depression during cancer treatment. Given that treating distress is being increasingly considered as an integral part of cancer treatment, additional research is warranted to determine the extent of the beneficial effects of this form of art therapy.

References

1. Carlson, L. E., Waller, A., & Mitchell, A. J. (2012). Screening for distress and unmet needs in patients with cancer: Review and recommendations. *Journal of Clinical Oncology, 30*(11), 1160–1177.

2. Mitchell, A. J., Chan, M., Bhatti, H., Halton, M., Grassi, L., Johansen, C., et al. (2011). Prevalence of depression, anxiety, and adjustment disorder in oncological, haematological, and palliative-care settings: A meta-analysis of 94 interview-based studies. *The Lancet Oncology, 12*(2), 160–174.

3. Bultz, B. D., & Carlson, L. E. (2005). Emotional distress: The sixth vital sign in cancer care. *Journal of Clinical Oncology, 23*(26), 6440–6441.

4. National Comprehensive Cancer Network. (2015). Distress management https://www.nccn.org/professionals/physician_gls/pdf/distress.pdf. Accessed 06 Mar 2016.

5. Hamer, M., Chida, Y., & Molloy, G. J. (2009). Psychological distress and cancer mortality. *Journal of Psychosomatic Research, 66*(3), 255–258.

6. Richardson, M. A., Sanders, T., Palmer, J. L., Greisinger, A., & Singletary, S. E. (2000). Complementary/alternative medicine use in a comprehensive cancer center and the implications for oncology. *Journal of Clinical Oncology, 18*(13), 2505–2514.

7. Moyer, A., Sohl, S. J., Knapp-Oliver, S. K., & Schneider, S. (2009). Characteristics and methodological quality of 25 years of research investigating psychosocial interventions for cancer patients. *Cancer Treatment Reviews, 35*(5), 475–484.

8. Geue, K., Goetze, H., Buttstaedt, M., Kleinert, E., Richter, D., & Singer, S. (2010). An overview of art therapy interventions for cancer patients and the results of research. *Complementary Therapies in Medicine, 18*(3–4), 160–170.

9. Wood, M. J., Molassiotis, A., & Payne, S. (2011). What research evidence is there for the use of art therapy in the management of symptoms in adults with cancer? A systematic review. *Psychooncology, 20*(2), 135–145.

10. Nainis, N., Paice, J. A., Ratner, J., Wirth, J. H., Lai, J., & Shott, S. (2006). Relieving symptoms in cancer: Innovative use of art therapy. *Journal of Pain and Symptom Management, 31*(2), 162–169.

11. Koom, W. S., Choi, M. Y., Lee, J., Park, E. J., Kim, J. H., Kim, S. H., et al. (2016). Art therapy using famous painting appreciation maintains fatigue levels during radiotherapy in cancer patients. *Radiation Oncology Journal, 34*(2), 135–144.

12. Thomas, G., & Kennedy, J. (1995). Art therapy and practice in palliative care. *European Journal of Palliative Care, 2*(3), 120–123.

13. Oh, S. M., Min, K. J., & Park, D. B. (1999). A study on the standardization of the hospital anxiety and depression scale for Koreans: A comparison of normal, depressed and anxious groups. *Journal of Korean Neuropsychiatric Association, 38*(2), 289–296.

14. Yi, J. S., Bae, S. O., Ahn, Y. M., Park, D. B., Noh, K. S., Shin, H. K., et al. (2005). Validity and reliability of the Korean version of the Hamilton Depression Rating Scale (K-HDRS). *Journal of Korean Neuropsychiatric Association, 44*(4), 456–465.

15. Kwon, J. H., Nam, S. H., Koh, S., Hong, Y. S., Lee, K. H., Shin, S. W., et al. (2013). Validation of the Edmonton Symptom Assessment System in Korean patients with cancer. *Journal of Pain and Symptom Management, 46*(6), 947–956.

16. Zigmond, A. S., & Snaith, R. P. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica, 67*(6), 361–370.

17. Carlson, L. E., Angen, M., Cullum, J., Goodey, E., Koopmans, J., Lamont, L., et al. (2004). High levels of untreated distress and fatigue in cancer patients. *British Journal of Cancer, 90*(12), 2297–2304.

18. Faller, H., & Schmidt, M. (2004). Prognostic value of depressive coping and depression in survival of lung cancer patients. *Psychooncology, 13*(5), 359–363.

19. Sharpley, C. F., Bitsika, V., Wootten, A. C., & Christie, D. R. (2014). Differences in major depressive disorder and generalised anxiety disorder symptomatology between prostate cancer patients receiving hormone therapy and those who are not. *Psychooncology, 23*(12), 1350–1355.

20. Bar-Sela, G., Atid, L., Danos, S., Gabay, N., & Epelbaum, R. (2007). Art therapy improved depression and influenced fatigue levels in cancer patients on chemotherapy. *Psychooncology, 16*(11), 980–984.

21. Sehlen, S., Hollenhorst, H., Schymura, B., Herschbach, P., Aydemir, U., Firsching, M., et al. (2003). Psychosocial stress in cancer patients during and after radiotherapy. *Strahlentherapie und Onkologie, 179*(3), 175–180.

22. Watson, M., Homewood, J., Haviland, J., & Bliss, J. M. (2005). Influence of psychological response on breast cancer survival: 10-year follow-up of a population-based cohort. *European Journal of Cancer, 41*(12), 1710–1714.

23. Chan, C. M., Wan Ahmad, W. A., Yusof, M. M., Ho, G. F., & Krupat, E. (2015). Effects of depression and anxiety on mortality in a mixed cancer group: A longitudinal approach using standardised diagnostic interviews. *Psychooncology, 24*(6), 718–725.

24. Kash, K. M., Mago, R., & Kunkel, E. J. (2005). Psychosocial oncology: Supportive care for the cancer patient. *Seminars in Oncology, 32*(2), 211–218.

25. Archer, S., Buxton, S., & Sheffield, D. (2015). The effect of creative psychological interventions on psychological outcomes for adult cancer patients: A systematic review of randomised controlled trials. *Psychooncology, 24*(1), 1–10.

26. Zhang, M. F., Wen, Y. S., Liu, W. Y., Peng, L. F., Wu, X. D., & Liu, Q. W. (2015). Effectiveness of mindfulness-based therapy for reducing anxiety and depression in patients with cancer: A meta-analysis. *Medicine (Baltimore)*. doi:10.1097/MD.0000000000000897.

27. Lin, M. H., Moh, S. L., Kuo, Y. C., Wu, P. Y., Lin, C. L., Tsai, M. H., et al. (2012). Art therapy for terminal cancer patients in a hospice palliative care unit in Taiwan. *Palliative and Supportive Care, 10*(1), 51–57.

28. Derogatis, L. R., Morrow, G. R., Fetting, J., Penman, D., Piasetsky, S., Schmale, A. M., et al. (1983). The prevalence of psychiatric disorders among cancer patients. *JAMA, 249*(6), 751–757.

29. Stefanek, M. E., Derogatis, L. P., & Shaw, A. (1987). Psychological distress among oncology outpatients. Prevalence and severity as measured with the Brief Symptom Inventory. *Psychosomatics, 28*(10), 530–532, 537–539.