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A creative journey through advanced cancer: a pilot randomized controlled study of existential art therapy

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Abstract: Objective: This pilot randomized controlled study examined the preliminary effects of Existential Art Therapy (EAT) on cancer response styles, spiritual well-being, and hopelessness in individuals with stage IV cancer. Method: Thirty participants were randomly assigned in a 1:1 ratio to the EAT intervention or a wait-list control condition. Twenty-eight participants completed the study and were included in the analyses (13 EAT, 15 control). The intervention comprised eight weekly group sessions. Change scores, calculated as posttest minus pretest, were compared between groups using Mann–Whitney U tests with Holm correction. Cliff's delta with 95% bootstrap confidence intervals (CIs) was used to estimate effect sizes. Results: The principal between-group finding was a greater reduction in cancer-related Helplessness/Hopelessness in the EAT group (median change: −2 vs. 1; U = 38.50, adjusted p = 0.043; δ = −0.61, 95% CI [−0.85, −0.19]). Spiritual well-being increased more in the EAT group (median change: 5 vs. 1; δ = 0.44, 95% CI [−0.06, 0.78]), although this difference did not remain statistically significant after Holm correction (adjusted p = 0.280). Fighting Spirit decreased within the EAT group, but the change did not differ significantly between groups. No statistically significant between-group differences were found for the remaining outcomes. Conclusions: EAT provided preliminary evidence of a reduction in cancer-specific Helplessness/Hopelessness, but broader effects were not established. Larger, adequately powered trials with active control conditions and follow-up assessments are needed.
Keywords: Existential art therapy, advanced cancer, psycho-oncology, helplessness/hopelessness, spiritual well-being

ESP Un viaje creativo a través del cáncer avanzado: estudio piloto aleatorizado y controlado de arteterapia existencial

ESP Resumen: Objetivo: Este estudio piloto controlado aleatorizado examinó los efectos preliminares de la Arteterapia Existencial (AE) sobre los estilos de respuesta al cáncer, el

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bienestar espiritual y la desesperanza en personas con cáncer en estadio IV. Método: Treinta participantes fueron asignados aleatoriamente, en una proporción 1:1, a la intervención AE o a una condición de control en lista de espera. Veintiocho participantes completaron el estudio y fueron incluidos en los análisis (13 AE y 15 control). La intervención comprendió ocho sesiones grupales semanales. Las puntuaciones de cambio, calculadas como postest menos pretest, se compararon entre los grupos mediante pruebas U de Mann–Whitney con corrección de Holm. Los tamaños del efecto se estimaron mediante la delta de Cliff con intervalos de confianza (IC) del 95% obtenidos mediante bootstrap. Resultados: El principal hallazgo entre los grupos fue una mayor reducción del Desamparo/Desesperanza relacionados con el cáncer en el grupo AE (cambio mediano: −2 frente a 1; U = 38,50; p ajustada = 0,043; δ = −0,61; IC del 95% [−0,85, −0,19]). El bienestar espiritual aumentó más en el grupo AE (cambio mediano: 5 frente a 1; δ = 0,44; IC del 95% [−0,06, 0,78]), aunque esta diferencia no mantuvo la significación estadística tras aplicar la corrección de Holm (p ajustada = 0,280). El Espíritu de Lucha disminuyó dentro del grupo AE, pero el cambio no difirió significativamente entre los grupos. No se observaron diferencias estadísticamente significativas entre los grupos en las demás variables evaluadas. Conclusiones: La AE proporcionó evidencia preliminar de una reducción del Desamparo/Desesperanza relacionados específicamente con el cáncer, pero no se demostraron efectos más amplios. Se requieren ensayos de mayor tamaño y con potencia estadística adecuada, condiciones de control activas y evaluaciones de seguimiento.

Palabras clave: Terapia de Arte Existencial, Cáncer Avanzado, Psicooncología, Desamparo/Desesperanza, Bienestar Espiritual

Sumario: 1. Introduction 2. Method 3. Results 4. Discussion 5. Conclusions 6. References

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1. Introduction

Despite advances in diagnosis and treatment, cancer remains a major health problem worldwide. In addition to its physical consequences, cancer can have substantial psychological, social, and existential effects, particularly among individuals living with advanced disease. Receiving a cancer diagnosis may involve a wide range of difficult experiences, including uncertainty, pain, suffering, insomnia, bodily changes, anxiety, depression, guilt, regret, fear of abandonment, fear of treatment, and fear of death[1]. These difficulties may also affect family members and make adjustment to the illness more challenging. The psychological burden may become even greater in advanced cancer, particularly in the presence of metastasis, limited treatment effectiveness, and increased pain, which have been associated with higher levels of hopelessness and loneliness[2]. Adjustment to cancer therefore involves more than the management of physical symptoms. Patients may also need to reconstruct a sense of meaning, maintain hope, and reorganize their lives in response to the illness. Previous studies have shown that finding or reconstructing meaning in the experience of cancer is associated with better psychological adjustment, functioning, and quality of life[3,4].

The importance of meaning makes an existential perspective particularly relevant in the context of cancer. Advanced illness may bring individuals into closer contact with concerns related to mortality, uncertainty, isolation, freedom, responsibility, and the meaning of life. Existential psychotherapy provides a framework for exploring these concerns and reconsidering the individual's relationship with illness and existence. A meta-analysis has shown that existential therapies may have beneficial psychological effects in people living with serious and life-threatening illnesses[5]. More broadly, psychosocial interventions for individuals with cancer have been found to reduce emotional distress and improve quality of life[6]. Meta-analytic

studies have also reported potential benefits of existentially and spiritually oriented interventions in oncology populations[7,8]. Existential therapy may additionally provide a broader framework within which different therapeutic approaches can be integrated[9]. Art therapy may fit particularly well within this perspective because it allows individuals to explore emotions and experiences that may be difficult to express verbally through symbolic and creative forms[10].

Existential Art Therapy integrates the philosophical and therapeutic foundations of existential psychotherapy with the expressive and meaning-making potential of artistic activity[11]. It has been described as a dynamic approach in which artistic processes are used therapeutically to engage with fundamental existential concerns. Rather than focusing exclusively on symptom reduction, Existential Art Therapy invites individuals to explore and reconsider personal meanings, choices, relationships, vulnerabilities, and existential concerns. This process may be challenging and emotionally demanding, but it may also create opportunities for discovering or constructing meaning[12]. From an existential perspective, the search for meaning represents a central human concern, particularly when individuals face suffering and circumstances that cannot easily be changed[13]. Within the therapeutic relationship, the art therapist accompanies the individual in this process by encouraging engagement with present-moment experience, facilitating the acceptance and expression of difficult emotions, and supporting the exploration of personal meaning in the here and now[12].

These processes may be especially relevant to the psychological adjustment of individuals with cancer. Responses to cancer vary considerably among individuals and may also change across different phases of the illness trajectory, including diagnosis, treatment, recurrence, advanced disease, and the end of life. These responses may involve emotional, cognitive, and behavioral patterns, including shock, disbelief, denial, anger, sadness, fatalism, depressive mood, and disruptions in sleep, appetite, and everyday functioning[14]. Hope and coping resources may play an important role in this process. Patients with stronger coping resources and beliefs have been reported to experience higher levels of hope[15], while hope has been associated with more favorable psychological outcomes and quality of life[16]. Spiritual well-being may constitute another important resource. Among individuals diagnosed with cancer, hope has been found to be positively associated with spiritual well-being, with existential well-being contributing substantially to patients' sense of hope[17]. These findings suggest that interventions addressing meaning, hope, spirituality, and responses to illness may be particularly relevant for people coping with advanced cancer.

The substantial psychosocial burden associated with cancer has led to the development of a wide range of individual and group psychological interventions. Approaches investigated in oncology settings include cognitive behavioral therapy, mindfulness-based interventions, meaning-centered psychotherapy, art therapy, existential therapy, client-centered therapy, and acceptance and commitment therapy[3,18,19]. However, despite the conceptual compatibility between existential psychotherapy and art therapy, few studies appear to have systematically integrated these approaches within a structured intervention for individuals with advanced cancer. Existential Art Therapy may offer a suitable framework for this population because it combines the exploration of existential concerns with nonverbal and symbolic forms of expression. This combination may allow individuals to engage with experiences related to illness, meaning, vulnerability, hope, and spirituality in ways that extend beyond verbal discussion alone.

The present pilot randomized controlled study aimed to explore the preliminary effects of an Existential Art Therapy program on cancer response styles, spiritual well-being, and hopelessness among individuals with stage IV cancer. Given the exploratory nature of the study, the absence of an a priori designated primary outcome, and the lack of prospective trial registration, the hypothesis and corresponding analyses were considered exploratory. It was hypothesized that pretest-to-posttest changes in cancer response styles, spiritual well-being, and hopelessness would differ between participants assigned to the EAT intervention and those assigned to the wait-list control condition.

2. Method

Study Design

This study was conducted as a pilot randomized controlled study to explore the preliminary effects of an Existential Art Therapy (EAT) program on cancer response styles, spiritual well-being, and hopelessness among patients with stage IV cancer. Participants were assigned to either the intervention group, which received the eight-session EAT program, or the control group, which received no study-related psychological intervention during the eight-week study period. Thus, the control condition represented a passive control rather than an active psychological comparison condition. Assessments were administered to both groups at baseline and immediately after the intervention period. No a priori sample size or statistical power calculation was performed because the study was conceived as a preliminary investigation intended to generate initial estimates and inform future adequately powered trials.

Participants and Procedure

The study was conducted at the Institute for Psychosocial Wellbeing in Istanbul, Türkiye, a psychosocial support centre providing psychological and supportive services. Participant recruitment, the EAT group sessions, and both baseline and post-intervention outcome assessments were conducted at the same centre. The inclusion criteria were: (a) having been diagnosed with stage IV cancer within the previous five years; (b) being aged 18 years or older; (c) receiving outpatient treatment; (d) being able to read and write Turkish; and (e) being willing to attend the group sessions except in the event of a medical or other emergency. The five-year diagnostic window was used as a pragmatic eligibility criterion to facilitate recruitment in this pilot study while restricting participation to individuals living with advanced-stage cancer and receiving outpatient care. This criterion was not intended to imply clinical homogeneity, as participants could differ considerably in disease trajectory, treatment burden, prognosis, and duration of advanced disease. Exclusion criteria included significant cognitive impairment or psychosis, as assessed by a clinician; current psychological treatment; alcohol dependence; physical limitations or severe hearing or visual impairments that would substantially restrict participation in the group sessions; and previous participation in a similar existentially based psychotherapy program.

Recruitment began on February 25, 2024, following publication of the study announcements. The eight-week EAT intervention began in mid-March 2024 and was completed in May 2024. Post-intervention assessments were administered immediately after completion of the intervention, also in May 2024. A total of 42 patients responded to the recruitment announcements. Thirty participants who met the eligibility criteria were enrolled in the study and randomly allocated in a 1:1 ratio to either the intervention group (n = 15) or the control group (n = 15). Simple randomization was used, and the allocation sequence was generated by the researchers using a random number table. The researchers were responsible for enrolling participants and assigning them to the study groups. No formal allocation concealment procedure was implemented. Participants were informed of their group assignment after completion of the baseline assessment. Outcome assessors were not blinded to group allocation because post-intervention assessments were conducted by the researchers involved in the study. The researchers who performed the statistical analyses were also aware of group allocation.

Participants allocated to the intervention group received the eight-session EAT program, whereas participants in the control group received no study-related psychological intervention during the eight-week study period. The control group therefore functioned as a wait-list comparison condition. After completion of the post-intervention assessments, participants in the control group were offered and subsequently received the EAT program. Two participants in the intervention group withdrew after attending several sessions because they reported that continuing the therapy program alongside their ongoing oncological treatment had become difficult. No post-intervention data were available for these participants. Although 30 participants were randomized, baseline data for the two intervention-group participants who subsequently withdrew

were not available in the retained analytic dataset and could not be reconstructed retrospectively. Consequently, both the baseline descriptive tables and the post-intervention analyses are based on the 28 study completers: 13 in the intervention group and 15 in the control group. The analyses therefore represent a completer analysis rather than an intention-to-treat analysis.

Sociodemographic and Clinical Information

A personal information form was used to collect sociodemographic and clinical characteristics, including age, sex, marital status, educational level, employment status, cancer diagnosis, current oncological treatment, and psychiatric medication use. All participants continued to receive their usual oncological and supportive medical care throughout the study period. The sociodemographic and clinical characteristics of the participants are presented in Table 1.

Table 1. Sociodemographic and Clinical Characteristics of Participants Who Completed the Study

Characteristic	Category	Intervention group (n = 13), n (%)	Control group (n = 15), n (%)
Sex	Female	11 (84.6)	10 (66.7)
	Male	2 (15.4)	5 (33.3)
Age, years	25–35	1 (7.7)	2 (13.3)
	36–45	5 (38.5)	5 (33.3)
	46–55	4 (30.8)	6 (40.0)
	56–65	3 (23.1)	2 (13.3)
Educational level	Elementary school	1 (7.7)	3 (20.0)
	High school	6 (46.2)	6 (40.0)
	University or higher	6 (46.2)	6 (40.0)
Marital status	Single	6 (46.2)	6 (40.0)
	Married	6 (46.2)	7 (46.7)
	Divorced	1 (7.7)	2 (13.3)
Employment status	Employed	4 (30.8)	5 (33.3)
	Unemployed	9 (69.2)	10 (66.7)
Cancer diagnosis	Breast cancer	6 (46.2)	7 (46.7)
	Lymphoma	2 (15.4)	1 (6.7)
	Stomach cancer	2 (15.4)	3 (20.0)
	Colon cancer	3 (23.1)	4 (26.7)
Cancer stage	Stage IV	13 (100.0)	15 (100.0)
Current oncological treatment	Yes	13 (100.0)	15 (100.0)
Psychiatric medication use	Yes	13 (100.0)	15 (100.0)

Note. Baseline sociodemographic and clinical data for the two participants in the intervention group who subsequently withdrew were not available in the retained study dataset. Therefore, Table 1 presents data only for the 28 participants who completed the study (intervention group, *n* = 13; control group, *n* = 15).

Measures

The assessment battery consisted of a personal information form, the Mental Adjustment to Cancer Scale (MAC), the Functional Assessment of Chronic Illness Therapy–Spiritual Well-Being Scale (FACIT-Sp-12), and the Beck Hopelessness Scale (BHS).

Mental Adjustment to Cancer Scale

The Mental Adjustment to Cancer Scale (MAC) was developed by Watson et al.[20] to assess psychological responses to cancer. The Turkish psychometric validation was conducted by Natan[21]. In the Turkish validation study, Cronbach's alpha coefficients were 0.72 for Fighting Spirit, 0.72 for Helplessness/Hopelessness, 0.58 for Anxious Preoccupation, and 0.63 for Fatalism; the coefficient for the total score was 0.72. Internal consistency was not calculated for the single-item Positive Avoidance dimension. The scale consists of 40 items rated on a 4-point Likert-type scale and comprises five dimensions: Fighting Spirit, Helplessness/Hopelessness, Anxious Preoccupation, Fatalism, and Positive Avoidance. Scores are calculated separately for each dimension, with higher scores indicating greater endorsement of the corresponding response style. The Positive Avoidance dimension consists of a single item; therefore, findings related to this dimension were considered exploratory and interpreted with particular caution.

Functional Assessment of Chronic Illness Therapy–Spiritual Well-Being Scale

The Functional Assessment of Chronic Illness Therapy–Spiritual Well-Being Scale (FACIT-Sp-12) was developed by Peterman et al.[22], and its Turkish psychometric validation was conducted by Aktürk et al.[23] The scale consists of 12 items rated on a 5-point Likert-type scale and comprises three dimensions: Meaning, Peace, and Faith. Total scores range from 0 to 48, with higher scores indicating greater spiritual well-being. In the Turkish validation study, Cronbach's alpha was 0.87 for the total scale, and the alpha coefficients for the subscales ranged from 0.78 to 0.93.

Beck Hopelessness Scale

The Beck Hopelessness Scale (BHS) was developed by Beck et al.[24], and its Turkish psychometric validation was conducted by Durak and Palabıyıkoğlu[25]. The scale consists of 20 true–false items and assesses negative expectations and pessimism regarding the future. Responses are scored dichotomously, resulting in a total score ranging from 0 to 20. Items 1, 3, 5, 6, 8, 10, 13, 15, and 19 are reverse-scored. Higher total scores indicate greater hopelessness. In the Turkish validation study, coefficient alpha values were 0.78 for Feelings and Expectations About the Future, 0.72 for Loss of Motivation, and 0.72 for Hope.

Item-level response data for the study measures were not available in the retained dataset; therefore, internal consistency coefficients could not be calculated for the present sample.

Existential Art Therapy Intervention

The EAT program was developed by the researchers based on the literature on existential psychotherapy and art therapy[10,12,26–29]. The program was designed to support psychosocial well-being among individuals with stage IV cancer by addressing existential meaning, loneliness, hopelessness, psychological responses to cancer, illness-related experiences, and spiritual well-being. The intervention consisted of eight weekly group sessions, each lasting approximately 180 minutes. Its overarching aim was to help participants explore, construct, or strengthen their sense of existential meaning and purpose while coping with the psychological consequences of cancer. Each session focused on a specific existential or psychological theme, including self-awareness, temporality, self-concept, loneliness, bodily experience, anxiety, vulnerability and resilience, and self-acceptance.

Each session generally comprised three stages: (a) creating an artwork using art therapy techniques and materials appropriate to the session theme; (b) exploring the personal associations, meanings, emotions, and thoughts elicited by the artwork; and (c) reflecting on personal awareness and experience through discussion of the artwork. Materials included crayons, markers, colored paper, glue, feathers, glitter, sequins, beads, ribbons, string, buttons, cotton, and pieces of fabric, depending on the participants' preferences and the requirements of each activity. To facilitate attendance, sessions were scheduled in the evening, after peak commuting hours. Participants received a reminder one day before each session through their preferred method of communication: telephone call, text message, or email.

Intervention Delivery and Standardization

At the beginning of the program, the EAT intervention was delivered to one closed therapy group comprising 15 participants. No new participants were admitted after the group had begun. The control group comprised 15 participants and did not receive the EAT intervention during the study period. The intervention was co-facilitated by the two researchers, each of whom had approximately 10 years of experience conducting group-based psychological interventions. One therapist had professional and academic expertise in art therapy, whereas the other had professional expertise in psycho-oncology. Both therapists jointly conducted all eight sessions.

Before the intervention began, the researchers developed a written eight-session EAT protocol specifying the therapeutic theme, objectives, art-based activities, materials, and general structure of each session. All sessions were conducted in accordance with this protocol. Adherence to the intervention protocol was supported by the joint delivery of all sessions by both therapists and the consistent use of the session-by-session protocol. However, no independent assessment of treatment fidelity was conducted.

All 13 participants who completed the intervention attended at least six of the eight scheduled EAT sessions. Two participants withdrew after attending several sessions because they reported difficulty continuing the program alongside their ongoing oncological treatment. No serious adverse events or marked increases in distress were spontaneously reported by the participants or observed by the therapists during the intervention. However, adverse events and emotional deterioration were not assessed using a standardized monitoring procedure. No make-up sessions or additional support sessions were provided, and all intervention content was delivered during the scheduled group sessions.

Session 1: Self-Awareness and Personal Goals

The first session focused on enhancing self-awareness, developing new perspectives on personal experiences, and identifying personal goals. Participants were asked to paint a tree and attend to the thoughts and emotions evoked by the resulting image. The emotional experiences that emerged during and after the activity were subsequently discussed within the group.

Session 2: Past, Present, and Future

The second session focused on integrating the three temporal dimensions of past, present, and future and examining personal goals within the context of one's life course. Participants were asked to draw a bridge representing their lives and indicate where they perceived themselves to be on the bridge at the present moment. They then reflected on what lay behind them, what they had accomplished, what awaited them in the future, and what goals they wished to pursue. Participants were also encouraged to explore the emotions elicited by viewing their drawings.

Session 3: Actual and Ideal Self

The third session focused on exploring the relationship between the actual and ideal self. Participants first considered questions such as "Who am I?", "What am I?", and "What can I do?" and then created a mask visually representing characteristics they believed they possessed. They subsequently considered questions such as "What is valuable to me?" and "What do I expect and want from life?" and created a second mask representing characteristics they ideally wished to possess. Finally, participants created a dialogue between the two masks.

Session 4: Solitude and Loneliness

The fourth session explored solitude and loneliness and their potential relationship with self-actualization. Following a group discussion about solitude, participants created an image representing their experience of solitude and then wrote a poem inspired by the image.

Session 5: Body, Emotion, and Awareness

The fifth session focused on increasing awareness of the relationships among thoughts, emotions, and bodily sensations. Participants were encouraged to attend to their present bodily experiences and identify where specific emotions were felt in the body. They selected colors to represent these emotions and used them to color a body template. Participants then wrote a dialogue entitled "My Body and Me" and created an additional artwork using colors associated with their emotional experiences.

Session 6: Anxiety

The sixth session focused on developing awareness of anxiety and exploring new ways of relating to it. Participants were first invited to close their eyes and focus on their bodily experiences. They considered where anxiety was most strongly experienced in the body and how they recognized the experience as anxiety. Following a here-and-now discussion of these experiences, participants represented their bodily experience of anxiety in an artwork created using the available materials.

Session 7: Vulnerability and Resilience

The seventh session focused on developing an awareness of personal vulnerability and integrating vulnerable and resilient aspects of the self. Participants created one image representing their vulnerable side and a second image representing their resilient side. They then selected and cut out a piece from each image and combined the two pieces on a new sheet of paper to create an integrated composition.

Session 8: Self-Acceptance

The final session focused on self-actualization and unconditional self-acceptance. Participants created a self-portrait and were encouraged to acknowledge and accept perceived imperfections in the image. They then named their self-portraits and wrote a story about self-acceptance from the perspective of the portrayed self.

Statistical Analysis

Data were analyzed using IBM SPSS Statistics version 25.0. Normality of the outcome distributions and change scores was examined using Shapiro–Wilk tests. Given the small sample size and departures from normality observed for some outcomes, nonparametric statistical procedures were used. All statistical tests were two-sided, with $p < .05$ considered statistically significant. Baseline outcome scores were compared between the intervention and control groups using Mann–Whitney U tests. Within-group pretest–posttest changes were examined using Wilcoxon signed-rank tests; these analyses were treated as secondary exploratory analyses and were not interpreted as direct evidence of an intervention effect. To directly assess whether the magnitude of change differed between groups, change scores were calculated for each outcome as posttest minus pretest (Δ = posttest − pretest) and compared using Mann–Whitney U tests. These between-group comparisons of change constituted the principal inferential analyses.

No single primary outcome was designated a priori. The five dimensions of the Mental Adjustment to Cancer Scale, spiritual well-being, and general hopelessness had been selected as study outcomes before the analyses, but no formal primary–secondary hierarchy was specified. Given the pilot nature of the study, all outcome analyses were therefore considered exploratory. Holm's sequential correction was applied across the seven principal outcome comparisons to control the family-wise Type I error rate, and both unadjusted and Holm-adjusted p values were reported. Effect sizes for the principal between-group comparisons were estimated using Cliff's delta (δ), with 95% bias-corrected and accelerated bootstrap confidence intervals based on 50,000 resamples. Effect-size and confidence-interval calculations were performed

using Python version 3.13.5 with SciPy version 1.17.0 and NumPy version 2.3.5. Two participants in the intervention group withdrew before post-intervention assessment, and no posttest data were available for them. No imputation was performed; therefore, analyses were based on the 28 participants who completed both assessments, representing a completer analysis rather than an intention-to-treat analysis.

Ethical Considerations

Ethical approval for the study was obtained from the Ethics Committee of Yeditepe University on February 20, 2024 (Decision No. 48/2024). All participants provided written informed consent before participation. The study was conducted in accordance with the principles of the Declaration of Helsinki.

Trial Registration

This pilot randomized controlled study was not prospectively registered in a publicly accessible clinical trial registry. Prospective trial registration was not undertaken before participant recruitment because registration had not been incorporated into the original study protocol. This absence of prospective registration is acknowledged as a methodological limitation of the study.

3. Results

Participant Flow

A total of 42 patients were assessed for eligibility. Twelve were excluded before randomization, and 30 participants were randomly allocated to the intervention group (n = 15) or the wait-list control group (n = 15). Two participants in the intervention group withdrew before the post-intervention assessment. Therefore, 28 participants completed both assessments and were included in the completer analysis (Figure 1).

At baseline, no statistically significant differences were observed between the intervention and control groups in Fighting Spirit, Helplessness/Hopelessness, Anxious Preoccupation, Fatalism, Positive Avoidance, spiritual well-being, or general hopelessness (all p > .05; Table 2).

Table 2. Baseline Comparison of Study Outcomes Among Study Completers

Outcome	Intervention, Mdn (Q1–Q3)	Control, Mdn (Q1–Q3)	U	p
Fighting Spirit	52.00 (48.50–56.00)	51.00 (48.00–55.00)	88.00	.661
Helplessness/Hopelessness	12.00 (10.00–16.00)	15.00 (11.00–16.00)	82.50	.486
Anxious Preoccupation	23.00 (18.00–27.50)	22.00 (19.00–27.00)	85.00	.563
Fatalism	19.00 (18.00–25.50)	19.00 (16.00–23.00)	87.00	.626
Positive Avoidance	2.00 (1.00–3.00)	2.00 (1.00–3.00)	85.00	.551
FACIT-Sp-12	27.00 (23.50–33.00)	25.00 (21.00–32.00)	78.50	.380
BHS	10.00 (9.00–11.50)	11.00 (9.00–12.00)	94.00	.869

Note. Baseline outcome data for the two participants in the intervention group who subsequently withdrew were not available in the retained study dataset. Accordingly, baseline comparisons were conducted among study completers (intervention group, n = 13; control group, n = 15). Mdn = median; Q1 = 25th percentile; Q3 = 75th percentile; U = Mann–Whitney U statistic; FACIT-Sp-12 = Functional Assessment of Chronic Illness Therapy–Spiritual Well-Being Scale; BHS = Beck Hopelessness Scale.

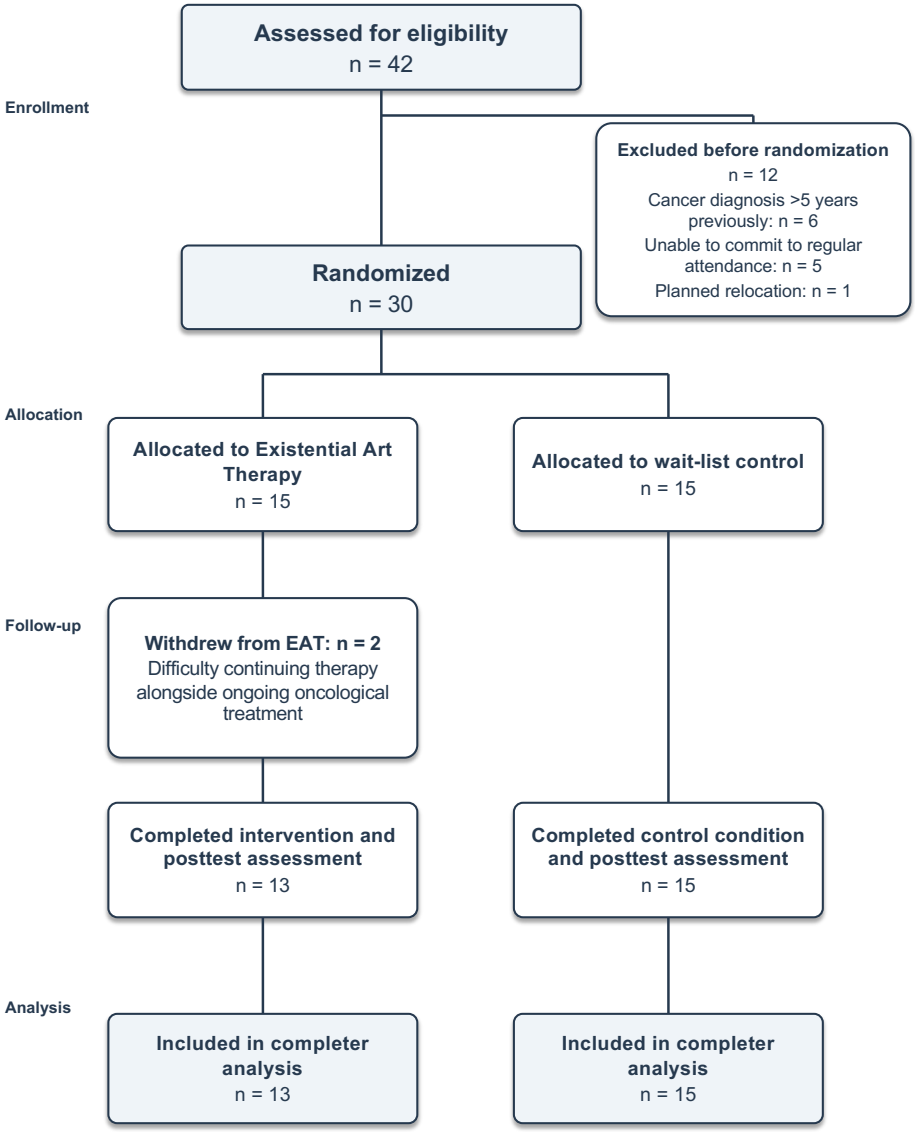


Figure 1. CONSORT flow diagram of participant recruitment, allocation, follow-up, and analysis

Within-group pretest–posttest comparisons were conducted as secondary exploratory analyses. In the intervention group, Fighting Spirit scores decreased from pretest to posttest (Z = −2.079, unadjusted p = .038). Helplessness/Hopelessness (Z = −2.405, unadjusted p = 0.016) and Fatalism (Z = −2.180, unadjusted p = 0.029) scores also decreased, whereas spiritual well-being increased (Z = −1.966, unadjusted p = 0.049). No statistically significant within-group changes were observed for Anxious Preoccupation (Z = −0.527, unadjusted p = 0.598), Positive Avoidance (Z = −1.000, unadjusted p = 0.317), or general hopelessness (Z = −0.465, unadjusted p = 0.642; Table 3). Because these within-group analyses were exploratory and were not adjusted for multiple comparisons, they were not interpreted as evidence of an intervention effect. In particular, the decrease in Fighting Spirit indicates only the direction of the observed within-group change and should not be interpreted as a beneficial intervention outcome.

Table 3. Exploratory Pretest–Posttest Comparisons Within the Intervention Group

Outcome	Pretest, Mdn (Q1–Q3)	Posttest, Mdn (Q1–Q3)	Z	p
Fighting Spirit	52.00 (48.50–56.00)	50.00 (48.00–54.00)	−2.079	.038
Helplessness/Hopelessness	12.00 (10.00–16.00)	11.00 (9.00–12.00)	−2.405	.016
Anxious Preoccupation	23.00 (18.00–27.50)	24.00 (21.50–26.50)	−0.527	.598
Fatalism	19.00 (18.00–25.50)	18.00 (11.50–19.00)	−2.180	.029
Positive Avoidance	2.00 (1.00–3.00)	2.00 (1.00–3.00)	−1.000	.317
FACIT-Sp-12	27.00 (23.50–33.00)	34.00 (28.00–37.00)	−1.966	.049
BHS	10.00 (9.00–11.50)	10.00 (9.00–11.00)	−0.465	.642

Note. Mdn = median; Q1 = 25th percentile; Q3 = 75th percentile; Z = standardized Wilcoxon signed-rank statistic; FACIT-Sp-12 = Functional Assessment of Chronic Illness Therapy–Spiritual Well-Being Scale; BHS = Beck Hopelessness Scale. Within-group tests were secondary exploratory analyses.

In the control group, none of the examined outcomes showed statistically significant pretest–posttest changes (all unadjusted $p > .05$; Table 4).

Table 4. Exploratory Pretest–Posttest Comparisons Within the Control Group

Outcome	Pretest, Mdn (Q1–Q3)	Posttest, Mdn (Q1–Q3)	Z	p
Fighting Spirit	51.00 (48.00–55.00)	49.00 (46.00–53.00)	−1.380	.168
Helplessness/Hopelessness	15.00 (11.00–16.00)	15.00 (12.00–18.00)	−1.381	.167
Anxious Preoccupation	22.00 (19.00–27.00)	21.00 (19.00–24.00)	−0.537	.592
Fatalism	19.00 (16.00–23.00)	21.00 (14.00–23.00)	−0.669	.504
Positive Avoidance	2.00 (1.00–3.00)	2.00 (2.00–3.00)	−0.465	.642
FACIT-Sp-12	25.00 (21.00–32.00)	24.00 (21.00–34.00)	−0.063	.949
BHS	11.00 (9.00–12.00)	10.00 (9.00–12.00)	−0.292	.770

Note. Mdn = median; Q1 = 25th percentile; Q3 = 75th percentile; Z = standardized Wilcoxon signed-rank statistic; FACIT-Sp-12 = Functional Assessment of Chronic Illness Therapy–Spiritual Well-Being Scale; BHS = Beck Hopelessness Scale. Within-group tests were secondary exploratory analyses.

To directly assess whether the magnitude of change differed between the intervention and control groups, change scores were calculated as posttest minus pretest (Δ = posttest – pretest) and compared using Mann–Whitney *U* tests. Holm's sequential correction was applied across the seven outcome comparisons to control the family-wise Type I error rate. Both unadjusted and Holm-adjusted *p* values are reported. Effect sizes were estimated using Cliff's delta (δ), with 95% bias-corrected and accelerated bootstrap confidence intervals based on 50,000 resamples (Table 5).

Table 5. Between-group comparison of pretest-to-posttest change scores

Outcome	Int. Δ, Mdn (IQR)	Ctrl. Δ, Mdn (IQR)	U	p	Adj. p	Cliff's δ [95% CI]
Fighting Spirit	−2.00 (−3.00–1.00)	0.00 (−3.00–1.00)	86.00	.593	1.000	−.12 [−.53, .33]
Helplessness/ Hopelessness	−2.00 (−3.50–0.00)	1.00 (−1.00–2.00)	38.50	.006	.043	−.61 [−.85, −.19]
Anxious Preoccupation	1.00 (−2.50–4.00)	1.00 (−2.00–3.00)	94.50	.890	1.000	.03 [−.42, .46]
Fatalism	−4.00 (−9.50–0.50)	0.00 (−3.00–1.00)	57.00	.060	.302	−.42 [−.76, .08]
Positive Avoidance	0.00 (−0.50–0.00)	0.00 (−1.00–1.00)	96.00	.941	1.000	−.02 [−.43, .40]
FACIT-Sp-12	5.00 (−1.00–9.50)	1.00 (−4.00–2.00)	54.50	.047	.280	.44 [−.06, .78]
BHS	0.00 (−1.00–1.00)	0.00 (−1.00–1.00)	88.00	.652	1.000	−.10 [−.50, .33]

Note. Δ = posttest − pretest; Int. = intervention group; Ctrl. = control group; Mdn = median; IQR = interquartile range; CI = confidence interval; FACIT-Sp-12 = Functional Assessment of Chronic Illness Therapy–Spiritual Well-Being Scale; BHS = Beck Hopelessness Scale; Adj. p = Holm-adjusted p value. U denotes the smaller Mann–Whitney U statistic. Negative Cliff's δ values indicate lower change scores in the intervention group relative to the control group; positive values indicate higher change scores. Adjusted p values were used for statistical inference.

The between-group difference in change in Helplessness/Hopelessness remained statistically significant after correction for multiple comparisons. The intervention group showed a median decrease of 2 points, whereas the control group showed a median increase of 1 point (U = 38.50, unadjusted p = 0.006, Holm-adjusted p = 0.043). The corresponding effect size was δ = −0.61 (95% CI [−0.85, −0.19]), indicating a greater reduction in cancer-related Helplessness/Hopelessness in the intervention group.

Spiritual well-being increased by a median of 5 points in the intervention group, compared with 1 point in the control group. Although the unadjusted comparison reached the conventional threshold for statistical significance (U = 54.50, unadjusted p = 0.047), it did not remain statistically significant after Holm correction (Holm-adjusted p = 0.280). The effect-size estimate was positive but imprecise (δ = 0.44, 95% CI [−0.06, 0.78]), and the confidence interval included zero.

No statistically significant between-group differences in change were observed for Fighting Spirit, Anxious Preoccupation, Fatalism, Positive Avoidance, or general hopelessness after correction for multiple comparisons. Although Fighting Spirit decreased in the exploratory within-group analysis of the intervention group, the magnitude of change did not differ statistically significantly between the intervention and control groups (U = 86.00, Holm-adjusted p = 1.000; δ = −0.12, 95% CI [−0.53, 0.33]). Therefore, the observed decrease in Fighting Spirit should not be interpreted as a beneficial effect of the intervention.

4. Discussion

The present pilot randomized controlled study explored the preliminary effects of an Existential Art Therapy (EAT) program on cancer response styles, spiritual well-being, and hopelessness among individuals with stage IV cancer. Given the small sample size, the absence of an a priori power calculation, and the exploratory nature of the analyses, the findings should be interpreted cautiously. The principal between-group analysis showed a greater reduction in cancer-related Helplessness/Hopelessness in the intervention group than in the control group, and this difference remained statistically significant after correction for multiple comparisons. Spiritual

well-being also showed a more favorable pattern of change in the intervention group, although the difference did not remain statistically significant after Holm correction and its confidence interval included zero. No statistically significant between-group differences in change were found for Fighting Spirit, Fatalism, Anxious Preoccupation, Positive Avoidance, or general hopelessness. Taken together, these results suggest a relatively specific rather than broad pattern of psychological change and should not be interpreted as evidence that EAT produces uniform benefits across cancer-related adjustment outcomes.

The reduction in cancer-related Helplessness/Hopelessness was the clearest finding of the study. Living with advanced cancer involves not only coping with the physical effects of the illness and its treatment but also confronting uncertainty, loss of control, vulnerability, and an increased awareness of mortality. In these circumstances, expressing difficult experiences through art and discussing them within a therapeutic group may provide an alternative means of approaching experiences that are difficult to organize or communicate verbally[10,12]. The group context may also facilitate emotional expression, interpersonal learning, mutual support, and a sense of belonging, while allowing participants to recognize that some of their concerns are shared by others facing similar circumstances[30]. The EAT program combined these processes with the exploration of meaning, loneliness, vulnerability, anxiety, temporality, and self-acceptance. The greater reduction in Helplessness/Hopelessness may therefore reflect a change in how participants related psychologically to their illness and its existential demands. However, because the comparison condition was a wait-list rather than an active psychological intervention, this finding cannot be attributed specifically to either the existential or art therapy components of the program.

The findings for the other cancer response styles were less conclusive. Fighting Spirit decreased in the exploratory within-group analysis of the intervention group, but the magnitude of change did not differ statistically significantly between the intervention and control groups. Within the Mental Adjustment to Cancer framework, Fighting Spirit reflects an active and confrontational response to cancer[20]; therefore, its decrease should not automatically be regarded as a favorable outcome. One possible explanation is that a therapeutic process emphasizing acceptance, vulnerability, uncertainty, and engagement with difficult emotions may have altered how some participants understood the need to "fight" their illness. Nevertheless, this interpretation is speculative and was not directly assessed in the present study.

Fatalism also decreased in the exploratory within-group analysis, but the direct between-group comparison of change did not provide evidence of an intervention effect. Similarly, no statistically significant between-group differences emerged for Anxious Preoccupation or Positive Avoidance. These findings suggest that different dimensions of cancer-related adjustment may not respond to an existentially oriented intervention in the same manner or within the same period. They also underscore the importance of basing conclusions about intervention effects on direct between-group comparisons rather than on statistically significant changes observed within only one study group.

Spiritual well-being showed a favorable but less conclusive pattern. Advanced cancer may constitute an existential crisis by bringing mortality, uncertainty, and questions concerning the meaning of life, illness, and death into sharper focus. In this context, spiritual well-being need not refer exclusively to religious beliefs; it may also encompass meaning, inner coherence, connectedness, and the individual's relationship with existential concerns. Awareness of existential needs and expectations may be particularly relevant to spiritual well-being during serious illness[31]. The EAT sessions addressed these areas through artistic and reflective activities involving the self, past–present–future continuity, loneliness, bodily experience, anxiety, resilience, and self-acceptance.

Although spiritual well-being increased more in the intervention group than in the control group, the between-group difference did not remain statistically significant after Holm correction. Moreover, the effect-size estimate was imprecise, and its confidence interval included zero. Consequently, spiritual well-being should be regarded as a potentially relevant outcome for further investigation rather than as a demonstrated effect of the intervention.

This pattern is broadly compatible with previous studies of spiritually oriented interventions among people living with cancer and other serious illnesses. Improvements in spiritual well-being have been reported among women with cancer[32], individuals with leukemia[33], and patients participating in spiritually focused therapeutic programs[34]. However, these interventions differ from EAT in their theoretical foundations, participant characteristics, and therapeutic procedures. Their findings therefore cannot be regarded as direct confirmation of the present results. Nevertheless, they suggest that structured opportunities to engage with meaning, spirituality, and existential concerns may be relevant in the context of serious illness. EAT approaches these concerns through therapeutic dialogue, symbolic expression, and art-making rather than through an exclusively spiritual framework. The present findings provide only tentative support for this possibility and require confirmation in larger studies.

General hopelessness showed a different pattern from cancer-specific Helplessness/Hopelessness. No statistically significant between-group difference in change was found for Beck Hopelessness Scale scores. This distinction may be theoretically meaningful. The Helplessness/Hopelessness dimension of the MAC assesses a response situated specifically within the individual's experience of cancer, whereas the Beck Hopelessness Scale assesses broader negative expectations and pessimism concerning the future. An intervention may therefore influence how an individual relates to cancer without necessarily altering more generalized expectations about the future. This distinction may be especially relevant for individuals with stage IV cancer, for whom realistic uncertainty regarding disease progression may remain present even when some aspects of psychological adjustment to the illness improve.

Hope nevertheless remains an important psychological resource in cancer care[35]. Existential perspectives emphasize the possibility of constructing meaning and exercising personal choice even when suffering or adverse circumstances cannot be eliminated[36]. In the present program, painting, poetry, symbolic representation, bodily awareness, and self-reflection were used to facilitate contact with internal experience and personal sources of meaning. However, the absence of measurable change in general hopelessness indicates that meaning-making and increased awareness should not automatically be equated with greater hope. For individuals facing a life-threatening illness, existential exploration may create opportunities for meaning while simultaneously bringing mortality, uncertainty, and vulnerability more clearly into awareness. Psychological change during this type of intervention may therefore be complex and emotionally demanding rather than uniformly positive.

The absence of statistically significant between-group differences across several outcomes may also be related to the nature and duration of the therapeutic process. Existential therapy emphasizes awareness, authenticity, responsibility, freedom, and engagement with fundamental conditions of existence. These processes may require more time than was available within an eight-session intervention and may not necessarily produce rapid changes in symptom-oriented measures. Questions concerning relationships, mortality, responsibility, life satisfaction, and meaning may initially increase awareness of difficult experiences rather than immediately reduce distress. The absence of statistically significant differences does not exclude potentially relevant therapeutic processes, but these processes were not directly assessed in the present study. Future studies could therefore incorporate qualitative methods and measures of possible mechanisms of change, including meaning-making, emotional expression, acceptance, therapeutic alliance, group cohesion, and perceived social support. Both statistically significant and nonsignificant findings may contribute to the evaluation and refinement of psychosocial interventions[37], particularly when examined alongside theoretically relevant therapeutic processes[38].

Limitations

Several limitations should be considered when interpreting the findings. First, the small sample size and absence of an a priori power calculation limit statistical power, the precision of the effect-size estimates, and the generalizability of the results. Accordingly, the findings should be considered preliminary and hypothesis-generating rather than definitive evidence of efficacy. Second, two

participants in the intervention group withdrew because they experienced difficulty continuing the program alongside their oncological treatment. Because no post-intervention data were available for these participants, the analyses were based on completers rather than on an intention-to-treat population. Attrition confined to the intervention group may therefore have introduced bias.

In addition, baseline sociodemographic, clinical, and outcome data for the two participants who withdrew were not available in the retained analytic dataset and could not be reconstructed retrospectively. Consequently, baseline characteristics could only be described for the 28 participants who completed the study rather than for the full randomized sample. This limits the assessment of baseline comparability following randomization. Furthermore, no formal allocation-concealment procedure was implemented, and outcome assessors and data analysts were not blinded to group allocation, increasing the potential for selection and assessment bias. The study was not prospectively registered, and the protocol and selected outcomes were therefore not publicly documented before recruitment.

The wait-list control group received no study-related psychological intervention during the comparison period. Consequently, the observed between-group difference in Helplessness/Hopelessness cannot be attributed specifically to the existential or art therapy components of EAT. Nonspecific factors—including therapist attention, group participation, social contact, emotional support, expectancy, and opportunities to discuss illness-related experiences—may have contributed to the observed change. Future studies should therefore include an active comparison condition that controls for these factors.

No follow-up assessment was conducted; therefore, the durability of the reduction in cancer-related Helplessness/Hopelessness remains unknown. Although spiritual well-being showed a favorable pattern before correction for multiple comparisons, its longer-term relevance also remains uncertain. The eight-session format may additionally have provided insufficient time for therapeutic work addressing complex existential themes such as meaning, mortality, responsibility, and identity.

Although all participants had stage IV cancer, the inclusion of different cancer diagnoses and the use of a five-year eligibility window may have resulted in considerable heterogeneity in disease trajectory, prognosis, treatment burden, and duration of advanced disease. This clinical heterogeneity may limit the generalizability of the findings. All participants used psychiatric medication, but medication type, dosage, and possible changes during the study were not systematically monitored. Therefore, the possible influence of psychiatric medication on the psychological outcomes cannot be excluded.

Finally, item-level response data were unavailable, preventing the calculation of internal-consistency coefficients for the study measures in the present sample. In addition, the Positive Avoidance dimension of the MAC is represented by a single item, limiting measurement precision and requiring particularly cautious interpretation of findings related to this dimension. Adverse events and emotional deterioration were not assessed using a standardized monitoring procedure. Although no serious adverse events or marked increases in distress were spontaneously reported by participants or observed by the therapists, systematic conclusions regarding the safety and emotional effects of the intervention cannot be drawn.

5. Conclusions

The present pilot randomized controlled study provides preliminary evidence that Existential Art Therapy may reduce cancer-related Helplessness/Hopelessness among individuals with stage IV cancer. Spiritual well-being showed a favorable pattern of change, but the between-group difference did not remain statistically significant after correction for multiple comparisons. No statistically significant between-group differences were found for general hopelessness or the remaining cancer response styles. The exploratory decrease in Fighting Spirit should not be interpreted as a beneficial intervention effect because the magnitude of change did not differ statistically significantly between the intervention and control groups. Overall, the findings do not support a broad beneficial effect of EAT across all the psychological outcomes assessed.

Given the small sample size, completer analysis, absence of prospective trial registration, wait-list control condition, lack of follow-up assessment, and other methodological limitations, the findings should be regarded as preliminary and hypothesis-generating rather than as definitive evidence of efficacy. Larger, adequately powered randomized controlled trials incorporating active comparison conditions, systematic monitoring of adverse events, measures of potential therapeutic mechanisms, and longer follow-up periods are needed to determine the efficacy, durability, and potential clinical utility of Existential Art Therapy in psycho-oncology.

6. References

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