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The Effects of Art Therapy and Psychosocial Skills Training on Symptoms and Social Functioning in Patients with Schizophrenia and Their Relatives

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ABSTRACT

Objective: The effects of antipsychotics on negative symptoms are limited. The most appropriate approach in the treatment of schizophrenia is the integration of drug therapy with psychological and social interventions. The purpose of this study was to evaluate and compare the effects of art therapy and psychosocial skills training (PSST) in the treatment of schizophrenia.

Methods: A total of 15 patients diagnosed with schizophrenia according to the criteria in DSM-5 and 12 patient relatives were included in the study. The patients were randomly divided into 2 groups, 7 were included in the art therapy program and 8 were included in the PSST program for schizophrenia. 90-minute sessions of art therapy and PSST were carried out once a week for 17 weeks. Participants with schizophrenia were evaluated with the Positive and Negative Syndrome Scale (PANSS), Social Functioning Scale (SFS) and the Calgary Depression Scale for Schizophrenia and the relatives were given Beck Depression Inventory, Beck Anxiety Inventory and Zarit Burden Interview.

Results: There was a significant decrease in the PANSS negative symptoms, PANSS general psychopathology, SFS pro-social activities and SFS recreation scores in both groups, while the SFS social withdrawal scores decreased significantly only in the art therapy group. In the PANSS negative symptoms subscale, passive social withdrawal, difficulty in abstract thinking, lack of spontaneity and flow of conversation and stereotyped thinking scores were significantly lower in the art therapy group. In the PSST group only the score for difficulty in abstract thinking declined significantly.

Conclusion: The findings of the present study suggest that art therapy and PSST have positive effects on the improvement of negative symptoms as well as improvements in social and cognitive functionality in schizophrenia.

Keywords: Schizophrenia, Art Therapy, Psychotherapy Group, Psychosocial Skills Training, Social Functioning

INTRODUCTION

Schizophrenia is a life-long chronic disease manifested mainly by positive, negative, cognitive and mood symptoms, heavy social and economic costs and significant deterioration in quality of life and functionality. Although antipsychotics are the first-line treatment in schizophrenia, their effects on the residual type and negative symptoms are very limited. Even patients responding well to drug therapy are at risk of impaired social adaptation and functionality, and poor quality of life. Integration of drug therapy with various psychosocial interventions in schizophrenia helps prevent the recurrence of symptoms and improve functionality in schizophrenia patients (Schooler 2006).

Addition of Psychosocial Skills Training (PSST) to drug therapy in the treatment of schizophrenia is a structured, interactive and systematic training approach applied individually or in groups. PSST is a program that allows patients to become aware of their disease and condition, facilitates coping with the disease, prevents exacerbations and relapses of the disease, increases their insight into the disease, adherence to medication, social functionality, personal and social life skills, and quality of life (Yıldız et al. 2005). The

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PSST program for schizophrenia was designed by Yıldız (2011) to improve the psychological and social skills of patients based on the cognitive and behavioral treatment techniques in some modules of the Social Skills Training implemented by Liberman (1986, 1987, 1988). Studies with PSST in schizophrenia patients and their relatives found that there was a decrease in clinical symptoms and depressive symptoms, and an increase in quality of life and social functionality in the patient group (Yıldız et al. 2002, Üçok et al. 2002, Deveci et al. 2008).

Art therapy is a psychotherapy method applied by making and using art in many visual, auditory and physical means. The American Art Therapy Association defines art therapy as "an integrative mental health and human services profession that enriches the lives of individuals, families, and communities through active art-making, creative process, applied psychological theory, and human experience within a psychotherapeutic relationship" (American Art Therapy Association AATA, 2017). The purpose of art therapy is to improve an individual's creativity, emotional expression, communication, and ability to relate to oneself and others. Art therapy is an effective therapy, especially for those who have difficulty expressing their feelings and thoughts verbally, such as individuals with schizophrenia. It facilitates the connection between conscious and unconscious processes and allows individuals to become aware of and reveal themselves (Patterson 2007). The use of artistic elements such as painting, music, clay and drama helps to externalize unspoken feelings and thoughts (Killick and Schaverien 2003). Art is considered a medium that offers patients a secure and indirect way of connecting with themselves and others. Creating artworks and sharing this process has an inherent therapeutic effect (Sarandöl et al. 2013). Some studies on the effectiveness of art therapy in the treatment of schizophrenia patients showed its positive effects on positive and negative symptoms, social functionality, interpersonal communication, depressive symptoms and medication management (Patterson 2007).

Families of patients with schizophrenia have important roles in the treatment, follow-up and social adaptation of patients. Yıldız et al. (2003) applied a rehabilitation program to schizophrenia outpatients with the participation of volunteers and their families, and observed that there was an improvement in the clinical condition and social functionality of the patients at the end of the program. Considering the chronic course of schizophrenia and its consequential difficulties, it is important that families as the caregivers of the patients are informed about the nature of the disease and coping methods and able to choose treatment. In addition, the mental status of families should be monitored to maintain their well-being, and appropriate interventions should be made when necessary. It is known that family functionality is impaired when the functionality of schizophrenia patients is impaired, which affects the clinical course of the patient (Danacı et al. 2005, Friedmann et al. 1997). Therefore, it is necessary to include the families in the treatment plan.

Sarandöl et al. (2013) applied art therapy methods in schizophrenia patients and their relatives in group works in their study and achieved significant improvements in the symptoms of the disease, as well as personal and social skills. The researchers focused on whether these changes are associated with art therapy practices or involvement in a group psychotherapy process. They suggested that it would be beneficial to compare the methods through group works using different psychotherapy techniques and to evaluate the differences in psychotherapy methods for schizophrenia patients (Sarandöl et al. 2013). From this point of view, this study investigated the effects of the PSST and art therapy group works added to drug therapy on the symptoms and personal and social skills of the randomized schizophrenia patients, and whether there were differences in the effects observed on patients between the groups. Relatives of patients were also included in the study due to the importance and positive effect of family members' participation in the treatment of schizophrenia patients. Thus, we aimed to inform the relatives of patients about schizophrenia, raise awareness about the factors affecting the course of the disease and its individual and social consequences, provide a basis for a healthy relationship with patients, and allow them to keep their expectations from the patient at a realistic level, communicate with other patient relatives to share experiences, and monitor the changes in the patient more closely.

METHOD

Forming the Study Groups and Procedure

An approval (no. B.30.ULU.0.20.11.05-604.01.01/1189 dated 01/03/2016) was obtained from Bursa Uludağ University Ethics Committee. Written informed consent was obtained from the patients and their relatives. Study sample consisted of 15 patients diagnosed with schizophrenia according to DSM-5 monitored in the Psychosis Outpatient Clinic of Mental Health and Diseases Department of Faculty of Medicine, Bursa Uludağ University (B.U.Ü.T.F) and 12 patient relatives. The patients were monitored by two physicians in the psychosis outpatient clinic. To eliminate therapist bias, the patients participated in group works with physicians who did not monitor them. The patients were randomized into 2 groups, 7 of them being included in the art therapy group, and 8 of them being included in the PSST program for schizophrenia. Art therapy and

PSST practices consisted of 90-minute sessions once a week for 17 weeks. The PSST program was applied to separate groups of patients and relatives simultaneously, while the patients and relatives in the art therapy group received the first 5 sessions in separate groups and then continued next sessions in the same group. Patients and relatives were gathered in the same group after the fifth session to avoid any methodological differences from the art therapy study we conducted in 2013 (Sarandol et al., 2013). Individual preliminary interviews were conducted with patients and relatives to obtain sociodemographic information and to evaluate psychiatric conditions. The patients and relatives were informed about the group works and the objectives of the study. Sociodemographic and clinical characteristics of 15 patients are shown in Table 1.

The inclusion criteria of the study were to be at the ages of 18 to 65, to be diagnosed with schizophrenia according to DSM-5, to be literate, to have completed the acute therapy and be on maintenance medication, and to give consent to participate in group training after being informed. The exclusion criteria were to be in a psychotic exacerbation period, to have an organic mental disorder or mental retardation, and to have alcohol/substance use disorder.

Art therapy group works were conducted as closed group works and in 17 sessions in total. In the first year, the study lasted 12 weeks, and the next 5 sessions were reserved for theater play rehearsals. Sessions lasted 90 minutes. Each session consisted of 2 parts. In the first five sessions, the patients and relatives studied in separate groups but did the same activities. The intention was to ensure that the patients and relatives get help primarily for themselves in separate groups. For the purposes of the study, the relatives of the patients would be effective in the development of the personal and social skills of the patients, therefore they were included in the patient group after the fifth session, together forming a large group. This allowed for synergy in functionality between the two groups. Group sessions included elements of painting, music, literature, clay and theater. In each session, before the practice, the members shared about the previous practice and their daily life for the last week. It was followed by a practice with an art material, personal and group feedbacks were received about the resulting product of the practice, and they shared feelings and thoughts about the whole process. Finally, the relationship and differences with daily life of the shared experiences were emphasized. Therapists also provided feedback as needed. After the first year, group works were continued in the second year once every 15 days.

The skills that the schizophrenia patients received training in the PSST program were: improving communication skills, improving problem-solving skills, learning to cope with attention and memory problems, understanding psychosis and schizophrenia, learning about antipsychotic medication, learning about medication side effects, evaluating the treatment, learning to cope with persistent symptoms, recognizing and monitoring warning signs, learning about the negative effects of alcohol and narcotic drugs to avoid them, avoiding seeking useless treatments, learning to cope with stress, increasing self-confidence, recreation and daily activities, improving friendship, and participating in social activities. Skill acquisition was achieved gradually with small steps. The training used active teaching methods such as setting a purpose, informing, being a model, behavioral rehearsing, role playing, supporting the desired response, giving corrective feedback, behavior shaping, sharing experiences, using appropriate social enhancements, reinforcement with exercises and homework, and informing the families.

The patients included in group works continued their routine treatment and monitoring in our psychosis outpatient clinic. During the period of group works and scale evaluations, none of the patients were hospitalized and no changes were made to the current medications.

Scales Used in the Study

The patient group was applied the Positive and Negative Syndrome Scale (PANSS), Calgary Depression Scale for Schizophrenia (CDSS), Social Functioning Scale (SFS), Hinting Task (HT), Unexpected Outcomes Test (UOT), and relatives of the patients were applied Zarit Burden Interview (ZBI), Beck Depression Inventory (BDI) and Beck Anxiety Inventory (BAI) before the group works, and 3, 6 and 12 months after the end of the group works to measure the long-term effects.

Positive and Negative Syndrome Scale (PANSS): It is used to measure the distribution and severity of positive and negative symptoms in schizophrenia. It was developed by Kay et al. (1987). It consists of 30 items and each item has a severity rating of 1-7. PANSS is a Likert-type scale. The validity and reliability study of the Turkish version of the scale was performed by Kostakoğlu et al. (1999). Concerning the internal consistency, Cronbach's alpha coefficients were high (0.75, 0.77 and 0.71, respectively), similar to the original study. The inter-rater reliability correlation coefficients for the subscales were 0.97, 0.96 and 0.91, respectively. For construct validity, the correlation coefficient between subscales was found to be -0.41, showing that positive and negative subscales measured different symptom clusters, similar to the original study.

Calgary Depression Scale for Schizophrenia (CDSS): This test was developed by Addington et al. (1992) to measure

the level and severity of depressive symptoms in patients with schizophrenia. The validity and reliability study of the Turkish version of the scale was performed by Aydemir et al. (2000). The internal consistency of CDSS was high (Cronbach's alpha coefficient 0.90). Inter-rater reliability coefficient (0.87-1) and test-retest reliability (0.95-1) were statistically significant. CDSS is a four-point Likert scale rated by the interviewees and consists of 9 items. Each item on the scale is scored between 0-3 points and the total score is between 0-27.

Social Functioning Scale (SFS): It was developed by Birchwood et al. (1990), and validity and reliability studies of its Turkish version were performed by Erakay (2001). In the reliability analysis of the scale, Cronbach's alpha internal consistency coefficient was 0.807, and the reliability coefficient between patients and relatives was 0.95. It consists of 7 domains: social withdrawal, interpersonal functioning, pro-social activities, recreation, independence-competence, independence-performance, employment.

Zarit Burden Interview (ZBI): It was developed by Zarit et al. (1980). The validity and reliability studies of its Turkish version were performed by Özlü (2004). The Cronbach's alpha internal consistency coefficient of the scale was 0.83. It is used to determine the level of the social and economic burden on the caregivers. The total score ranges from 22 to 110. The scores are evaluated as 'mild burden' at a score of 22-46, 'moderate burden' at 47-55, and 'severe burden' at 56-110.

Beck Depression Inventory (BDI): It was originally developed by Beck et al. (1961) and adapted into Turkish by Hisli (1989). The split-half test reliability coefficient was 0.74. The criterion validity between the Multidimensional Personality Questionnaire-Depression Scale was 0.63. The person filling out this self-assessment scale marks the sentence that best expresses how they felt in the previous week, including the day of the application. Each item is scored between 0-3. The highest possible score is 63. Scores of 0 to 9 are evaluated as no/minimal depression, 10 to 18 as mild depression, 19 to 29 as moderate depression, and 30 to 63 as severe depression.

Beck Anxiety Inventory (BAI): It was developed by Beck et al. (1988) and adapted into Turkish by Ulusoy et al. (1993). Ulusoy et al. found the Cronbach's alpha internal consistency coefficient of the scale to be 0.93. BAI is a self-assessment scale used to determine the level of anxiety, symptom distribution and severity. It is scored is between 0-63. Scores of 8 to 15 are considered as mild anxiety, 16 to 25 as moderate anxiety, and 26 to 63 as severe anxiety.

Hinting Task (HT): It is one of the advanced theory of mind tests developed by Corcoran et al. (1995). The test consists of 10 short stories between two characters and these stories are read out by the researcher. Every story ends with one of the characters hinting something to the other. The participant is asked what the character really meant to say. An appropriate response in the first step takes 2 points. If the correct meaning is not inferred, the story continues and a more obvious hint is given. If the participant gives a correct answer at this stage, he/she gets 1 point, if he/she does not answer correctly, he/she gets 0 points and goes on to the next story. The total points range from 0 to 20. The test is used to evaluate theory of mind deficits in patients with schizophrenia (Bora et al. 2008, Tas et al. 2012).

Unexpected Outcomes Test (UOT): This test, consisting of 12 questions, was developed by Dyck et al. (2001) to measure the ability to think logically, the emotions elicited by the overall situation, and the ability to understand the inconsistency between the emotion and the emotion-eliciting situation. UOT items describe a situation that can cause an ordinary emotional response in the character and indicate the character's emotional response. In each question, the emotion is something unexpected arising in these situations. The person being tested is asked to provide additional information about the context to explain the apparent discrepancy. Answers are recorded in the test booklet and scored on a three-point (0-2) scale. The test is ended if incorrect answers are given three times consecutively. The total score ranges from 0 to 24. In the pilot study conducted for the Turkish version of the test, the inter-rater reliability was found 0.91 and its validity was also shown (Bora, 2009).

Evaluation

Both groups of patients who received art therapy and PSST were evaluated using PANSS, CDSS, SFS, UOT before the training (0 month) and 3, 6 and 12 months after the training.

Patient relatives who received art therapy and PSST were evaluated using BAI, BDI, and ZBI before the training (0 month) and 3, 6 and 12 months after the training.

Statistical Evaluation

The Shapiro-Wilk test was used to examine whether the data showed a normal distribution. Descriptive statistics were presented as mean and standard deviation or median (minimum-maximum) for quantitative data, and as frequency and percentage for qualitative data. The t-test was used for the comparison of two groups for normally distributed data, and the Mann-Whitney U test was used for the comparison of two groups for data that was not normally distributed. The analysis of the difference between groups for repeated measurements was made over the changes calculated from the initial measurement. Variance analysis of repeated

measurements and Friedman's test were used to compare the time-dependent measurements of the variables within the group. In case of significance, Bonferroni test was used in pairwise comparisons. The significance level was determined as $p \leq 0.05$. Statistical analysis of data was performed using SPSS23.0 (IBM Corp. Released 2015. IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp.) statistical package program.

RESULTS

Comparison of both patient groups in sociodemographic characteristics revealed no significant difference in gender, age, marital status, education level, employment, age of the first episode, number of episodes, number of hospitalizations, suicide history, and family history. The sociodemographic characteristics of the participants are shown in Table 1.

Comparison of the Scales Applied to the Patients Before and After the Group Works

In PSST group, no statistically significant difference was found in the comparison of positive symptoms subscale of PANSS and social withdrawal, interpersonal functionality, recreation, employment subscale scores of CDSS, HT, UOT, and SFS gathered before the group works (0 month) and at 3, 6 and 12 months after the end of the group works.

Table 1. Sociodemographics of Patients

	Art Therapy Group	PSST Group	p
Age (mean±SD)	44±6.92	41.62±7.28	0.531
Gender (n, %)			0.282
Male	4 (57.2%)	7 (87.5%)	
Woman	3 (42.8%)	1 (12.5%)	
Marital Status (n, %)			-
Married	0 (0%)	0 (0%)	
Single	7 (100%)	8 (100%)	
Education (n, %)			0.569
Primary school	0 (0%)	1 (12.5%)	
Secondary school	1 (14.28%)	1 (12.5%)	
High school	4 (57.14%)	5 (62.5%)	
Higher education	0 (0%)	1 (12.5%)	
University	2 (28.57%)	0 (0%)	
Employment (n, %)			0.467
Employed	1 (14.28%)	0 (0%)	
Retired	0 (0%)	2 (25%)	
Unemployed	6 (85.72%)	6 (75%)	
Suicide history (n, %)			0.467
Yes	0 (0%)	2 (25%)	
No	7 (100%)	6 (100%)	
Family history (n, %)			1
Yes	3 (42.8%)	4 (50%)	
No	4 (57.2%)	4 (50%)	
Age at first episode (mean, SD)	22.71±5.28	23.62±6.9	0.781
Number of episodes (mean, SD)	2.42±1.9	3±3.09	0.955
Number of hospitalizations (mean, SD)	1.57±0.78	1.62±1.50	0.867

PSST: Psychosocial Skills Training

Table 2. Changes in the Scales with Significant Differences for the Art Therapy and PSST Groups

Art Therapy Group	**0 month**	**3 months**	**6 months**	**12 months**	**p**
PANSS - Negative Symptoms	20.86±4.30[a]	19.00±2.71[a]	16.86±5.46[a,b]	12.29±1.50[b]	0.001
PANSS - General Psychopathology	28.43±6.24[a]	29.71±6.58[a]	25.29±3.09[a]	19.29±3.15[b]	0.001
PANSS – Total	60.00±12.40[a]	60.43±11.82[a]	52.71±5.71[a]	40.71±5.44[b]	<0.001
SFS - Social Withdrawal	10.29±1.60[a]	10.14±1.46[a]	11.29±2.06[a,b]	12.43±1.72[b]	0.008
SFS - Pro-Social Activities	9.14±3.80[a]	8.57±3.64[a]	10.29±6.10[a]	16.86±2.67[b]	<0.001
SFS – Level of Independence (Competence)	35.00±2.77[a]	35.29±4.19[a,b]	36.86±1.46[a,b]	38.00±1.53[b]	0.033
SFS – Level of Independence (Performance)	23.29±4.27[a]	25.14±6.52[a]	26.29±7.02[a]	29.29±5.79[a]	0.036
PSST Group					
PANSS - Negative Symptoms	20.88±4.85[a]	21.38±10.80[a]	17.13±8.20[a]	15.88±6.96[a]	0.047
PANSS - General Psychopathology	34.00±6.14[a]	33.25±6.45[a]	23.38±6.52[b]	23.88±5.11[b]	<0.001
PANSS – Total	67.50±11.31[a]	67.13±15.72[a]	53.38±13.32[a,b]	51.25±12.43[b]	0.001
SFS - Pro-Social Activities	9.50±3.16[a]	9.50±3.16[a]	9.50±1.77[a]	10.00±1.31[a]	0.021
SFS – Level of Independence (Competence)	33.38±5.34[a]	34.50±4.99[a,b]	36.25±4.80[b]	36.38±4.50[b]	0.005
SFS – Level of Independence (Performance)	18.13±5.67[a]	19.00±9.17[a]	21.13±8.98[a]	22.88±11.52[a]	0.039

a, b superscripts indicate statistical differences between groups in the same row. There is no statistically significant difference between the months with the same superscripts.
PSST: Psychosocial Skills Training
PANSS: Positive and Negative Syndrome Scale
SFS: Social Functioning Scale

In art therapy group, there was no statistically significant difference in the comparison of positive symptoms subscale of PANSS and interpersonal functionality, recreation, employment subscale scores of CDSS, HT, UOT, and SFS gathered before the group works (0 month) and 3, 6 and 12 months after the end of the group works.

Subscales with significant differences in intra-group comparison of scores for before and after the art therapy and PSST group works with patients are shown in Table 2, Figures 1a and 1b.

There was a significant difference in the total score of the PANSS negative symptoms subscale in intra-group assessment of both the art therapy and PSST groups, therefore the items of the negative symptoms scale were reviewed one by one. The changes in PANSS negative symptoms subscale items for both study groups are shown in Table 3 and Figure 2.

There was no statistically significant difference between art therapy and PSST groups in the comparison of the PANSS, CDSS, SFS, HT, and UOT scores for before the group works (0 month), and 3, 6 and 12 months after the end of the group works. Table 4 presents detailed information.

Comparison of Scales Applied to the Relatives of Patients Before and After the Group Works

There was no significant difference between art therapy and PSST groups of patient relatives upon the examination of the changes in the BAI, BDI, and ZBI scores for before the group works and at 3, 6 and 12 months after the end of the group works. There was also no significant difference in the scale scores between the groups of relatives of patients. Intra-group and inter-group comparison of the scale results of the patient relatives who received art therapy and PSST is shown in Table 5.

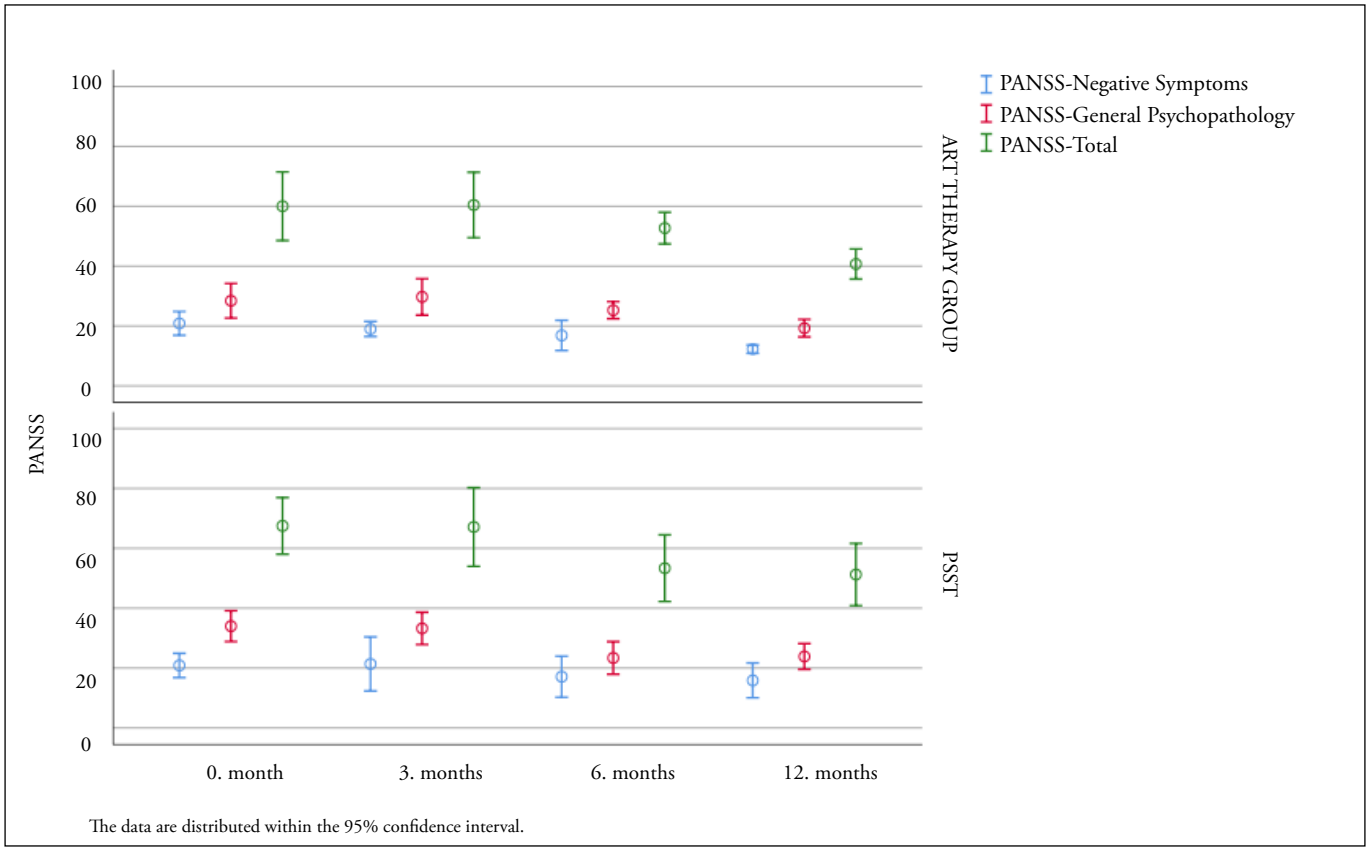

Figure 1a. Changes in the Scales with Significant Differences for the Art Therapy and PSST Groups
PSST: Psychosocial Skills Training
PANSS: Positive and Negative Syndrome Scale

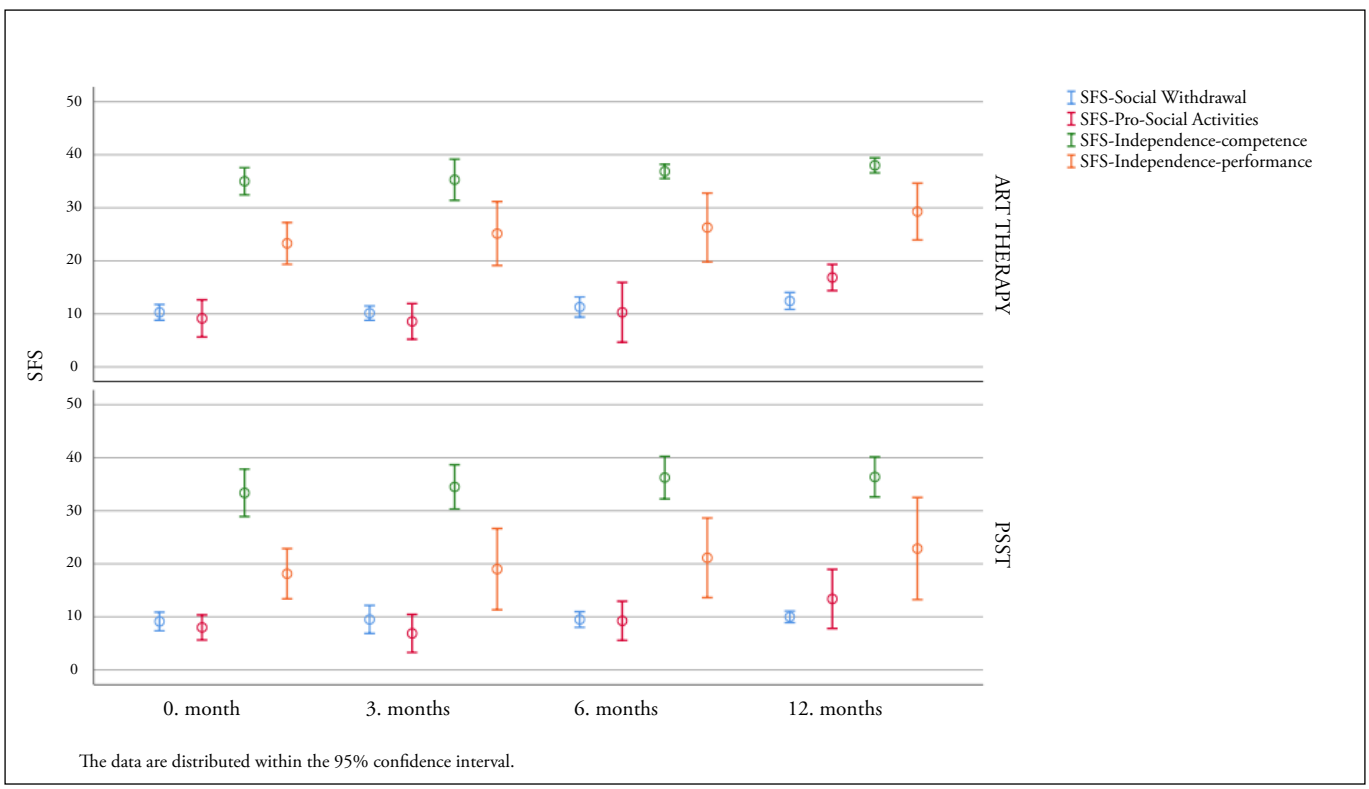

Figure 1b. Changes in the Scales with Significant Differences for the Art Therapy and PSST Groups
PSST: Psychosocial Skills Training
SFS: Social Functioning Scale

Table 3. Changes in the PANSS Negative Symptoms Subscale Items for Both Study Groups

Art Therapy Group	0 month	3 months	6 months	12 months	p
PANSS - Negative Symptoms					
Blunted Affect	2.71±0.488	2.57±0.535	2.57±0.787	2.00±0.00	0.087
Emotional Withdrawal	3.00±1.00	2.86±0.378	2.86±1.345	2.29±0.488	0.199
Difficulty Building Relationships	2.57±0.535	2.86±0.69	2.57±0.976	1.71±0.756	0.091
Passive Social Withdrawal	3.43±0.976[a]	2.86±0.378[a]	2.71±0.756[a,b]	1.71±0.756[b]	0.004*
Abstract Thinking Difficulty	3.29±1.113[a]	3.00±0.577[a]	1.71±0.756[b]	2.00±0.816[a,b]	0.006*
Loss of Spontaneity and Flow of Conversation	2.86±0.690[a]	3.00±0.577[a]	2.57±0.976[a]	1.29±0.488[b]	0.005*
Stereotypical Thinking	3.00±0.816[a]	2.29±0.756[a,b]	1.86±0.9[a,b]	1.29±0.488[b]	0.012*
PSST Group					
PANSS - Negative Symptoms					
Blunted Affect	3.00±1.195	3.00±1.852	2.38±1.506	2.50±0.926	0.277
Emotional Withdrawal	2.63±1.061	3.00±1.852	2.75±1.488	2.38±0.916	0.753
Difficulty Building Relationships	3.13±0.835	3.38±1.685	2.75±1.282	2.38±1.061	0.069
Passive Social Withdrawal	3.50±0.535	3.13±1.553	2.75±1.389	2.50±1.195	0.222
Abstract Thinking Difficulty	2.88±0.991[a]	3.25±1.389[a]	2.25±1.389[a,b]	2.13±1.246[a,b]	0.014*
Loss of Spontaneity and Flow of Conversation	3.00±1.195	3.00±1.512	2.75±1.488	2.13±1.246	0.155
Stereotypical Thinking	2.63±1.061	2.63±1.685	1.50±0.756	2.00±1.069	0.132

a, b superscripts indicate statistical differences between groups in the same row. There is no statistically significant difference between the months with the same superscripts.
PSST: Psychosocial Skills Training
PANSS: Positive and Negative Syndrome Scale

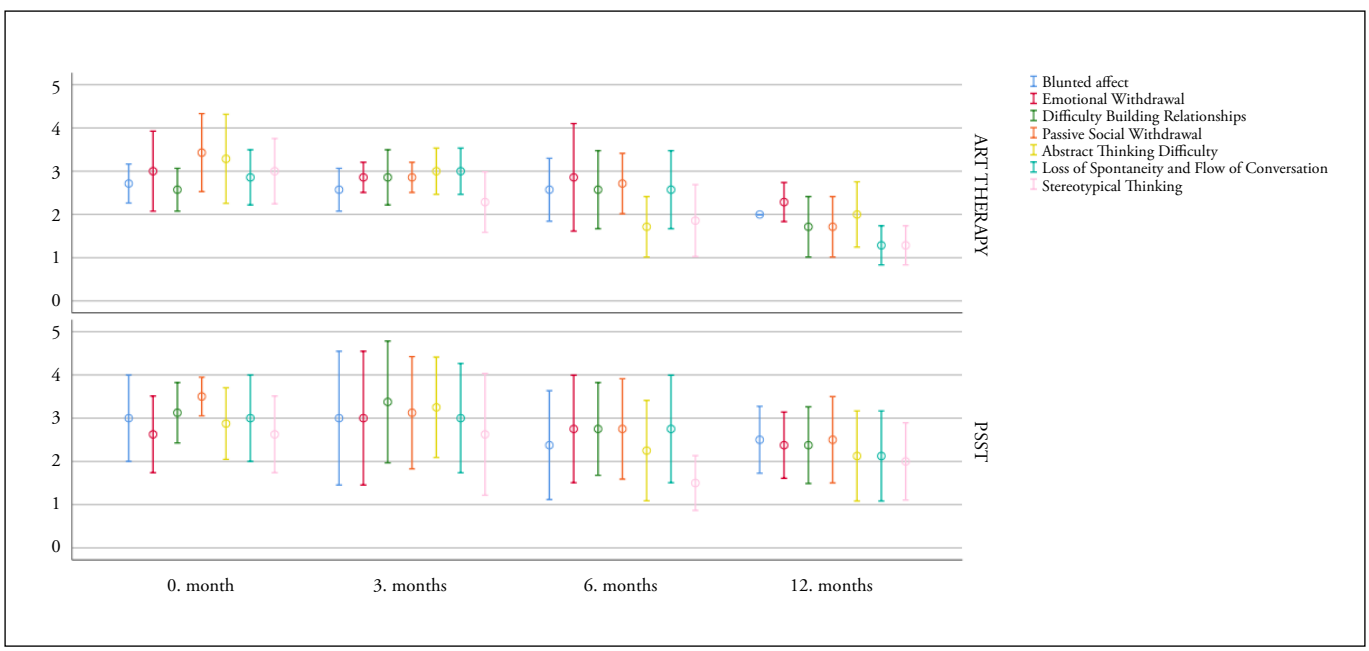

Figure 2. Changes in the PANSS Negative Symptoms Subscale Items for Both Study Groups
PANSS: Positive and Negative Syndrome Scale

Table 4. Comparison of Scale Scores Between the Groups of Art Therapy and PSST

		Art Therapy Group	PSST Group	p
PANSS - Positive Symptoms	0 month	10.71 ± 5.61	12.62 ± 6.23	0.546
	3 months Δ	13.14 ± 6.26	12.5 ± 6.8	0.258
		0.29 ± 0.41	0.04 ± 0.39	
	6 months Δ	10.57 ± 3.64	12.88 ± 5.49	0.797
		0.07 ± 0.33	0.11 ± 0.37	
	12 months Δ	9.14 ± 2.48	11.5 ± 5.40	0.795
		0.07 ± 0.17	0.04 ± 0.22	
PANSS - Negative Symptoms	0 month	20.85 ± 4.29	20.87 ± 4.85	0.994
	3 months Δ	19 ± 2.71	21.38 ± 10.8	0.658
		0.069 ± 0.15	0.0009 ± 0.37	
	6 months Δ	16.86 ± 5.46	17.13 ± 8.2	0.914
		0.16 ± 0.307	0.186 ± 0.301	
	12 months Δ	12.29 ± 1.5	15.88 ± 6.86	0.124
		0.393 ± 0.116	0.249 ± 0.203	
PANSS - General Psychopathology	0 month	28.42 ± 6.24	34 ± 6.141	0.106
	3 months Δ	29.71 ± 6.58	33.25 ± 6.45	0.559
		0.758 ± 0.323	0.007 ± 0.21	
	6 months Δ	25.29 ± 3.09	23.28 ± 6.52	0.051
		0.775 ± 0.299	0.204 ± 0.195	
	12 months Δ	19.29 ± 3.15	23.88 ± 5.11	0.856
		0.305 ± 0.11	0.294 ± 0.11	
PANSS – Total	0 month	60 ± 12.39	67.5 ± 11.31	0.242
	3 months Δ	60.43 ± 11.82	67.13 ± 15.72	0.839
		0.023 ± 0.21	0.21 ± 0.215	
	6 months Δ	52.71 ± 5.71	53.38 ± 13.32	0.237
		0.09 ± 0.195	0.206 ± 0.166	
	12 months Δ	40.71 ± 5.44	51.25 ± 12.43	0.281
		0.308 ± 0.096	0.243 ± 0.121	
CDSS	0 month	1.142 ± 1.573	3.13 ± 3.76	0.218
	3 months Δ	1.57 ± 2.15	2.5 ± 3.85	0.609
		0.42 ± 2.93	0.62 ± 4.53	
	6 months Δ	0.86 ± 1.21	1.13 ± 1.73	0.248
		0.28 ± 1.70	2 ± 3.38	
	12 months Δ	1.29 ± 1.6	1.13 ± 1.36	0.104
		0.14 ± 1.57	2 ± 2.87	
SFS - Social Withdrawal	0 month	10.28 ± 1.6	9.12 ± 2.1	0.256
	3 months Δ	10.14 ± 1.46	9.5 ± 3.16	0.748
		0.14 ± 1.77	0.37 ± 3.81	
	6 months Δ	11.29 ± 2.06	9.5 ± 1.77	0.616
		1 ± 2	0.37 ± 2.61	
	12 months Δ	12.43 ± 1.72	10 ± 1.31	0.232
		2.14 ± 1.95	0.87 ± 1.95	
SFS - Interpersonal Relationships	0 month	5 ± 1.82	4 ± 1.77	0.302
	3 months Δ	4.71 ± 1.38	4.38 ± 2.2	0.452
		0.28 ± 1.97	0.37 ± 1.302	
	6 months Δ	5.14 ± 1.68	4.88 ± 2.53	0.499
		0.14 ± 2.03	0.87 ± 2.03	
	12 months Δ	4.71 ± 0.76	5.13 ± 1.81	0.078
		0.28 ± 1.38	1.12 ± 1.45	

Continuation of Table 4

		Art Therapy Group	PSST Group	p
SFS - Pro-Social Activities	0 month	9.14 ± 3.8	8 ± 2.82	0.517
	3 months	8.57 ± 3.64	6.88 ± 4.29	0.803
	Δ	0.57 ± 3.1	1.12 ± 4.94	
	6 months	10.29 ± 6.1	9.25 ± 4.4	0.962
	Δ	1.14 ± 3.23	1.25 ± 5	
	12 months	16.86 ± 2.67	13.38 ± 6.65	0.458
	Δ	7.71 ± 2.42	5.37 ± 7.72	
SFS - Recreation	0 month	14.85 ± 4.63	11 ± 3.33	0.084
	3 months	13.29 ± 3.25	11.38 ± 4.24	0.311
	Δ	1.57 ± 3.9	0.37 ± 3.24	
	6 months	13.29 ± 2.06	11.63 ± 2.92	0.266
	Δ	1.57 ± 3.35	0.62 ± 3.88	
	12 months	14.57 ± 3.41	11.13 ± 3.23	0.819
	Δ	0.28 ± 3.72	0.12 ± 3.09	
SFS - Independence (Competence)	0 month	35 ± 2.76	33.37 ± 5.34	0.483
	3 months	35.29 ± 4.19	34.5 ± 4.99	0.427
	Δ	0.006 ± 0.063	0.041 ± 0.097	
	6 months	36.86 ± 1.46	36.25 ± 4.8	0.420
	Δ	0.05 ± 0.05	0.09 ± 0.12	
	12 months	38 ± 1.53	36.38 ± 4.5	0.820
	Δ	0.08 ± 0.07	0.09 ± 0.06	
SFS - Independence (Performance)	0 month	23.28 ± 4.27	18.12 ± 5.66	0.071
	3 months	25.14 ± 6.52	19 ± 9.17	0.673
	Δ	1.85 ± 4.74	0.87 ± 4.08	
	6 months	26.29 ± 7.02	21.13 ± 8.98	1
	Δ	3 ± 4.96	3 ± 4.5	
	12 months	29.29 ± 5.79	22.88 ± 11.52	0.683
	Δ	6 ± 5.22	4.75 ± 6.2	
SFS - Employment	0 month	1.71 ± 1.7	1.62 ± 1.06	0.903
	3 months	1.14 ± 1.07	1.63 ± 2.39	0.566
	Δ	0.57 ± 1.39	0 ± 2.20	
	6 months	1.43 ± 0.98	1.25 ± 1.39	0.903
	Δ	0.28 ± 1.25	0.37 ± 1.5	
	12 months	1.86 ± 1.46	1.13 ± 1.25	0.449
	Δ	0.14 ± 1.67	0.50 ± 1.51	
Hinting Task	0 month	12.28 ± 6.72	11.75 ± 5.92	0.872
	3 months	13.29 ± 2.29	12 ± 5.01	0.741
	Δ	1 ± 4.96	0.25 ± 3.61	
	6 months	14.86 ± 3.13	11.25 ± 6.23	0.222
	Δ	2.57 ± 5.99	0.50 ± 2.97	
	12 months	16.14 ± 2.79	13.75 ± 5.37	0.416
	Δ	3.85 ± 4.74	2 ± 3.81	
Unexpected Outcomes Test	0 month	15.85 ± 2.11	12.12 ± 7.84	0.232
	3 months	17.14 ± 3.48	13.63 ± 8.53	0.898
	Δ	1.28 ± 3.59	1.5 ± 2.72	
	6 months	18.57 ± 3.21	13.63 ± 8.28	0.241
	Δ	2.71 ± 1.79	1.5 ± 2	
	12 months	17.71 ± 2.36	11.88 ± 7.04	0.228
	Δ	1.85 ± 2.41	0.25 ± 3.77	

"Δ" symbol indicates the change compared to the initial measurement (0 month).
PSST: Psychosocial Skills Training, PANSS: Positive and Negative Syndrome Scale, CDSS: Calgary Depression Scale for Schizophrenia, SFS: Social Functioning Scale

Table 5. Intra-Group and Intergroup Comparison of the Scale Results of the Relatives of the Patients Received Art Therapy and PSST

		Art Therapy Group	PSST Group	p
BECK-D	0 month	8.6 ± 7.16	7.57 ± 4.82	1.0
	3 months	10.4 ± 5.94	8.42 ± 3.90	0.755
	Δ	1.8 ± 2.05	0.86 ± 3.76	
	6 months	9.2 ± 3.76	9 ± 5.44	0.755
	Δ	0.6 ± 6.91	1.43 ± 3.51	
	12 months	12.4 ± 7.7	14.42 ± 13.86	0.876
	Δ	3.8 ± 3.63	6.86 ± 11.28	
BECK-A	0 month	7 ± 6.96	7.42 ± 7.61	1.0
	3 months	10.6 ± 9.2	7.71 ± 5.99	0.106
	Δ	3.6 ± 2.41	0.29 ± 3.59	
	6 months	12.6 ± 11.92	7.85 ± 4.87	0.343
	Δ	5.6 ± 5.37	0.43 ± 6.43	
	12 months	13.4 ± 14.08	7.42 ± 4.42	0.149
	Δ	6.4 ± 7.4	0.0 ± 6.66	
ZBI	0 month	44.8 ± 13.8	46 ± 11.06	0.106
	3 months	44.8 ± 6.97	48.57 ± 18.36	0.755
	Δ	0.0 ± 11.47	2.57 ± 12.46	
	6 months	42.8 ± 10.73	44.14 ± 16.21	0.53
	Δ	-2.0 ± 13.44	-1.86 ± 18.12	
	12 months	47 ± 14.89	43.14 ± 15.88	0.53

"Δ" symbol indicates the change compared to the initial measurement (0 month).
PSST: Psychosocial Skills Training
BECK-D: Beck Depression Inventory
BECK-A: Beck Anxiety Inventory
ZBI: Zarit Burden Interview

DISCUSSION

The most appropriate approach in the treatment of schizophrenia is the integration of drug therapy into various unique psychological and social interventions and methods (Falloon et al. 1998). From this point of view, this study included schizophrenia patients who were monitored regularly in the Psychosis Outpatient Clinic of the Department of Mental Health and Diseases of B.U.Ü.T.F., and they participated in different PSST and art therapy works in two groups, in addition to drug therapy. Evaluation of the scales applied in the art therapy group revealed that positive changes started in PANSS negative symptoms from the 3rd month, and there were significant changes in passive withdrawal, abstract thinking difficulty, loss of spontaneity and flow of conversation. SFS evaluation showed a significant difference in the social withdrawal subscale between the months starting from the 3rd month, as well as in pro-social activities and independence level subscales between the baseline and 12-month scores. In PSST group, there was a significant change in the PANSS general psychopathology score between all evaluated months and the 12th month, as well as in the independence level subscale of the SFS when the results from baseline, 6 months and 12 months were compared. Only the abstract thinking difficulty subscale of the negative symptoms of the PANSS scale showed a significant difference. In art therapy and PSST groups, there was no significant difference between the groups in the results of all the scales applied to the patients and relatives before the group works and 3, 6 and 12 months after the end of the group works. There are few studies in this area that applied art therapy or PSST in schizophrenia patients in group works. To the best of our knowledge, this is the first study to compare the effects of art therapy and PSST methods in two different groups of schizophrenia patients.

Both programs aimed to reduce the severity of symptoms, improve interpersonal skills, increase their daily functionalities and quality of life, and establish a healthy communication ground with the families. Both programs helped patients express themselves and make sense of their experiences, improve their ability to understand others, and enabled them to become aware of biased thoughts and create alternative

thoughts, and participate in social relationships and increase social functionality (Sarandöl et al. 2013, Yıldız et al. 2019). The improvement observed in scores of negative symptoms subscale of PANSS and SCQ subscales in the members of both therapy and PSST groups was also consistent with previous studies (Deveci et al. 2008, Sarandöl et al. 2013).

Teglbjaerg et al. (2011) applied art therapy to 5 schizophrenia patients for 1 year and showed that psychotic symptoms had decreased, self-esteem had increased, and social functionality had improved when results from before and after therapy, and results from a 1-year follow-up were compared. Another study investigated the effects of motivation interviewing together with art therapy group works on the negative symptoms of schizophrenia patients in which 18 schizophrenia patients received only art therapy and 17 schizophrenia patients received art therapy combined with motivation interviewing for 6 weeks. It was observed that there were significantly more improvements in negative symptoms, motivation and pleasure, interpersonal relationships, personal hygiene, and attendance to the hospital program in the group that had motivation interviewing together with art therapy compared to the art therapy group alone (Cho and Lee 2018).

Meng et al. (2005) randomly divided 86 inpatients into intervention and control groups, applied art therapy twice a week to the intervention group for more than 15 weeks, and reported improvement in quality of life, self-esteem and social functionality at the end of this period compared to the control group. Richardson et al. (2007) randomized outpatient chronic schizophrenia patients into two groups to compare 47 patients who received standard drug therapy and 43 patients who received 12 weeks of art therapy in addition to standard therapy. Among 40 participants who were followed up for another six months after the therapy sessions, art therapy had a statistically significant positive effect on negative symptoms. Sarandöl et al. (2013) investigated the effects of art therapy applied by schizophrenia patients and their relatives on disease symptoms and personal and social skills, and it was found out that according to the scale evaluation before and after group works, the PANSS negative symptoms, PANSS general psychopathology and CDSS scores in the patient group as well as BDI, BAI, ZBI scores in the relatives group were statistically significantly lower after group works.

Deveci et al. (2008) applied PSST to patients with schizophrenia and observed significant decreases in the scores of the Scale for the Assessment of Positive Symptoms (SAPS), Scale for the Assessment of Negative Symptoms (SANS), Schizophrenia Quality of Life Scale (SQLS), and CDSS. Moriana et al. (2006) treated 32 of 64 schizophrenia patients with only medication, and applied PSST to 32 of them in addition to a 6-month drug therapy. The two groups were compared, and it was determined that the group receiving combination therapy had significantly lower PANSS scale scores.

In our study, positive symptoms and depression scales applied before and after art therapy and PSST group works were compared, and no significant difference was found between them. There was also no significant difference before and after group works in the depression, anxiety and caregiver burden scales applied to the relatives of the patients. These results may be associated with the fact that the patients included in the study were being monitored in a specialized outpatient clinic, so more time was allocated to these patients compared to the general psychiatry outpatient clinic monitoring, and the monitoring and treatment of the patients by the same physician might have allowed the treatment processes of the patients to be well managed. In addition, it may be associated with provision of psycho-education to patients and their relatives, immediate intervention in additional psychiatric conditions such as drug adverse effects and depression, and supportive interviews with patients' relatives.

It was emphasized in previous psychosocial intervention studies with schizophrenia patients that the positive changes observed might be related to the methods used, as well as the participation of patients and their relatives in a regular group psychotherapy process (Sarandol et al. 2013, Yıldız et al. 2002). Therefore, one of the main objectives of this study was to compare two different psychosocial intervention methods. We found differences in intra-group evaluations although there was no difference between the two groups. In this study, patient relatives in both groups participated in the process. The relatives were in the same group with the patients from the beginning of the practices in the PSST group, while the relatives in the art therapy were in different groups until session 5, and joined the same group with the patients in the next sessions. The reason why the patients and their relatives joined each other after session 5 in the art therapy group was that we also used the same method in the art therapy study in 2013 (Sarandöl et al., 2013), and we tried to allow for no methodological differences between the two studies to ensure continuity. Considering the data obtained, it can be suggested that this method created a significant difference.

This study is important in the evaluation of the effects of art therapy and PSST in the treatment of schizophrenia. The limitations of our study are that it was conducted in a single healthcare center, included a small number of patients, had no control group, and did not compare the drug therapies of the patients, which makes it difficult to generalize the data obtained. Studies with larger samples and involving multiple healthcare centers are needed.

It can be asserted that the patients in both study groups benefited from the therapy methods applied, considering the decrease in the scale scores. Schizophrenia was regarded as a biological disease for a long time, which caused psychotherapeutic practices to be overlooked. However, both the biological basis of the disease and some drugs cause social and cognitive problems in patients. Obviously, it is an overly optimistic approach today to hope that these problems can only be treated with drugs. We think that all of the psychotherapy methods used for this purpose are valuable, and investigated whether there are differences between the methods. The finding that both methods have benefits but there is no difference in terms of benefit between them may have arisen from the limitations of the study, or it may be the truth itself.

In conclusion, this study found that both art therapy and PSST practices allowed patients with schizophrenia to improve the negative symptoms such as decreased social and cognitive functionality. However, there is a need for longer-term studies that compare different mental and social treatment methods with a large number of patients. If these studies provide favorable data accumulation about the structured and easy-to-use methods, we think that more schizophrenia patients can have the chance to receive treatment with such methods in addition to drug therapies, as such training practices in this field become more common in our country.

For more information about the art therapy methods used in the study, the course of the sessions and description of the practices through case examples, please refer to the study conducted by Sarandöl et al. in 2013 which applied the same methodology (Sarandöl et al. 2013).

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