

EXPLORING THE EFFICACY OF ART-RELATED ACTIVITIES PARTICULARLY PAINTING AS ADJUVANT THERAPY IN SCHIZOPHRENIA: AN EVIDENCE-BASED CASE REPORT

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CASE REPORT

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ABSTRACT

Introduction – Schizophrenia is a condition that affects approximately one in 300 individuals across the globe, leading to the experience of both positive and negative symptoms. While antipsychotic medication remains the primary treatment, some patients still contend with residual symptoms and relapses. Art-related activities, particularly painting, are frequently used as potential adjuvant therapies for individuals with schizophrenia. Therefore, this study aimed to critically assess the efficacy of art-related activities, specifically painting, as supplementary therapy.

Methods – A comprehensive literature search was conducted on PubMed, Google Scholar, and ScienceDirect, guided by clinical questions and strict inclusion or exclusion criteria. The selected articles were critically evaluated to determine their validity, significance, and applicability.

Results – The literature search identified 3 randomized controlled trials (RCTs) and 1 case series, each with varying validity and analysis outcomes. Among the RCTs, 2 reported a positive effect of art therapy on the negative symptoms of schizophrenia, while the remaining 1 found no significant impact on patients. In a case series study, a substantial difference was observed in the symptoms of schizophrenia patients who engaged in art activities.

Discuss – The 3 RCTs were done with the involvement of a licensed art therapist. The practical application of the RCT study results was still limited by the case examined since there are no art therapists in the case observed. However, in this case, the patient was observed to be more calm, cooperative and increase in ADL score after the art-related activity done in a rehabilitation program.

Conclusion: There is potential for art-related activities as adjuvant therapy for individuals with schizophrenia, but it still lacks sufficient and consistent evidence.

Keywords: art, painting, therapy, schizophrenia, art-related activity.

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INTRODUCTION

Schizophrenia is a severe mental disorder, affecting an estimated one in 300 individuals across the globe.¹ Individuals afflicted with this mental disorder often experience positive symptoms, including hallucinations and delusions, alongside negative symptoms such as attention disturbances, anergia, and limited speech.² The primary treatment modality comprises antipsychotic medication, which effectively reduces symptoms and minimizes the risk of relapse. However, the efficacy of this medication remains limited when addressing the negative symptoms of schizophrenia.³ Medication therapy is also challenged by low compliance rates, contributing to a 30-50% increase in inpatient admissions. Additionally, some patients receiving treatment continue to experience residual symptoms, relapses, and a decline in social functioning.⁴

Creative activities related to art have long held recognition as a valuable therapeutic method for individuals contending with mental disorders. These activities can be facilitated by professionals including art therapists, occupational therapists, psychologists, or mental health nurses.⁵ Studies consistently indicate the positive impact of art-related activities on the self-esteem, self-worth, and self-efficacy of individuals with mental disorders.^{6,7,8} For those experiencing severe mental disorders, art-related activities often become an integral coping mechanism, offering respite from the psychoses they experience. Activities such as drawing or painting still-life scenes are frequently recommended.⁹ Most individuals with mental disorders describe experiencing a "flow-like" state during art activities, enabling these individuals to intensely focus and become absorbed in their creative pursuits.⁵

Art therapy in the form of painting or expressive drawing is a commonly used approach, both individually and within groups of psychosocial interventions. There exists an ongoing debate surrounding whether art therapy truly has a positive impact on individuals with schizophrenia, as expressive drawings aimed at self-discovery may contain emotionally charged content that can overwhelm patients.² Therefore, this evidence-based case report aims to critically analyze whether art therapy, particularly painting, when integrated with standard therapy, can yield a positive impact on those with this mental disorder.

METHOD

Clinical Question

Mrs. N, a 38-year-old individual, had been suffering from schizophrenia for the past 4 years. The patient was found participating in activities at a Mental Rehabilitation facility when encountered. Mrs. N had been admitted to the hospital three weeks before the encounter with complaints of confusion, self-conversation, and auditory hallucinations instructing her to leave without bidding farewell. She had poor adherence to treatment before being admitted for an inpatient stay. Mrs. N was diagnosed with unspecified schizophrenia, and there were no comorbidities. During her inpatient stay, the patient received standard therapy from a psychiatrist. Throughout her engagement in the mental rehabilitation program, Mrs. N remained calm, and cooperative, and had limited verbal communication. Additionally, the patient engaged in painting activities once a week for 2 consecutive weeks within the Department of Mental Rehabilitation. In the case of patients diagnosed with schizophrenia, did the incorporation of art-related activities, particularly painting, alongside standard therapy yield a positive impact on the mental condition of these individuals?

Searching Method

The search for relevant articles was conducted on PubMed®, Google Scholar®, and ScienceDirect® on August 17, 2023, using the following keywords, including "painting," "paint," "art," "therapy," "schizophrenia," and "psychosis." The search strategy, results, and inclusion-exclusion criteria are shown in Figure 1 and Table 1.

The selection of articles began with the scrutiny of titles and abstracts based on inclusion criteria, followed by the elimination of duplicates discovered across different databases. A subsequent screening was performed based on exclusion criteria, and finally, articles equipped with complete manuscripts were selected for review, including 3 Randomized Clinical Trials (RCTs) and 1 case series.

Critical assessment was performed, including evaluations of validity, significance, and applicability based on the criteria established by the Centre for Evidence-Based Medicine, University of Oxford, tailored for studies about therapy.

RESULT

Following the comprehensive search strategy, 4 original articles met the criteria for inclusion in this evidence-based case report. Details regarding the design, procedures, and measurements were presented in Table 2, while the critical appraisal for validity, significance, and applicability was shown in Table 3. Critical appraisal was conducted on 4

articles, and 3 of these constituted RCTs categorized at level 2b of evidence, and the remaining 1 was a case series study categorized at level 4.

Among the studies, Crawford *et al.* had the largest sample size in comparison to the others.² Meanwhile, the investigation by Richardson *et al.* had the highest rate of loss to follow-up, reaching up to 18%.¹⁰ All studies were considered to have average validity. A total of 3 RCT articles had largely similar sample characteristics, while the case series presented different sample characteristics, with schizophrenic patients constituting 14.1% of the total sample.⁵ Richardson *et al.* did not use blinding, whereas in the other two other RCTs, blinding was implemented on the side of assessors, although achieving patient blinding was not feasible.

All included studies featured painting and drawing as the core art activities. In the context of the 3 RCT articles, these activities were conducted within an art therapy group under the guidance of a registered art therapist. The duration of art activities extended to a minimum of 6 weeks, with Crawford *et al.* offering the longest intervention period, providing these activities for an extensive 12 months.

DISCUSS

In 2 of the Randomized Clinical Trials (RCT), specifically the studies by Richardson *et al.* and Montag *et al.* reported a significant effect of art therapy on alleviating negative symptoms when compared to standard care alone.^{10,11} Montag *et al.* further showed the efficacy of art therapy in reducing positive symptoms.¹¹ In contrast, a distinct RCT article conducted by Crawford *et al.* presented divergent results, indicating that the therapy did not yield a significant impact on the measured symptoms. Patients participating in the art therapy group significantly experienced less improvement in the positive symptom subscale when compared to those in the activity group within the trial, with an adjusted difference of 1.3 ($p = 0.037$).² Caddy *et al.* also reported a significant difference in average symptom scores within the art activity group, although a direct comparison with a control group was absent, raising questions regarding its relevance.⁵

Based on the validity component, it was evident that 3 of the RCTs under scrutiny could be deemed valid. The duration of interventions in these RCTs varied, ranging from a minimum of 6 weeks to a maximum of 12 months, with corresponding follow-up evaluations commencing at a minimum of 12 weeks and extending up to 12 months after treatment. It was crucial to acknowledge that the extended intervention and follow-up timelines introduced an elevated risk of loss to follow-up.

According to Richardson *et al.*, a substantial 18% loss to follow-up was documented, potentially affecting the validity of the analysis. The risk of unequal patient outcomes at baseline, exemplified in the study by Richardson *et al.* merited consideration. Baseline measurements on the SANS scale (negative symptom scale) indicated lower values in the art therapy group. However, the mean change scores of the SANS scale between the Standard Psychiatric Care (SPC) group and the Art Therapy (AT) group at baseline and 6 months of follow-up suggested reduced values in the AT group, with a mean difference in change scores of 0.7, 95% CI (0.2 - 4.7).

The study by Montag *et al.* introduced limitations arising from the lack of standardization in the frequency of psychotherapy contact provided to both groups during the intervention, an aspect omitted from the analysis yet potentially influencing the analysis results. Additionally, the treatment-as-usual group

received supplementary therapies including occupational therapy, sports, music, relaxation, cognitive training, and social skill training. The activities of the art therapy group remained exclusive to art therapy, omitting any mention of additional interventions.

The study conducted by Crawford *et al.* became the most robust in terms of validity and has the largest sample size among the 4 selected articles. However, its weakness lay in the substantial absenteeism observed among the patients during both art therapy and activity group sessions, with nearly 40% missing from the art therapy and almost 50% from the activity group. This phenomenon was primarily attributed to low motivation and organizational challenges among the participants. Meanwhile, the instrumental variables analysis failed to establish a significant association between the participant's attendance at these sessions and the primary outcomes, it was crucial to recognize that this analysis was constrained by the assumption of a linear relationship between the session attendance and treatment effect.

The 4 studies mentioned above showed the prevailing limitations and paucity of investigations about the potential of art-related activities in the context of schizophrenia treatment. The effects of these activities on schizophrenia patients remained challenging to quantify. Furthermore, the assessed long-term effects failed to show significant and consistent benefits from art-related activities. A study directly proving the immediate impacts of these activities remained absent.

The practical application of the study results was still limited by the specific cases examined. The availability of human resources, particularly art therapists with formal education in

art therapy, was significantly lacking in the areas where these cases were observed. In the case of Mrs. N, she participated in a mental rehabilitation program by doing individual painting activities with the help of a mental health nurse, but with no licensed art therapist. The approach in painting activities was nondirective and appreciative of the progress the patient made in drawing. After participating in the mental rehabilitation program, in maintenance wards, Mrs. N appeared to be more calm, and cooperative. There was also an increase in her ADL score. She was also found to be looking forward enthusiastically to the next painting session. In the Caddy *et al.* study, art-related activity interventions were carried out without the presence of art therapists, including individual art activities. Furthermore, a study by Caddy *et al.* found significant mean differences on all symptom scales measured between admission and discharge ($p < 0.0001$) on the patient receiving art therapy, but there is no comparable control group, hence the effect of art therapy intervention remains unclear. The 3 RCT articles, however, incorporated art therapy with painting activities, all guided by a licensed art therapist. Furthermore, differences were found in the form of intervention used within these 3 RCTs, with art therapy sessions containing group-sharing activities and psychotherapy feedback provided by art therapists. An exploration of the potential of art-related activities as adjuvant therapy for individuals suffering from schizophrenia could serve as a catalyst, encouraging the development of further studies and augmenting existing art therapy programs.

Table 1. Search strategy

Database	Search Terms	Results
PubMed® (17 th August 2023)	(painting or art) AND (therapy)AND ((schizophrenia OR psychosis))	1
Googlescholar® (17 th August 2023)	(painting or art) AND (therapy)AND ((schizophrenia OR psychosis))	101
ScienceDirect® (17 th August 2023)	TITLE-ABSTR-KEY(painting or art) AND ABSTR-KEY("therapy") AND TITLE-ABSTR-KEY("schizophrenia" OR "psychosis")	2

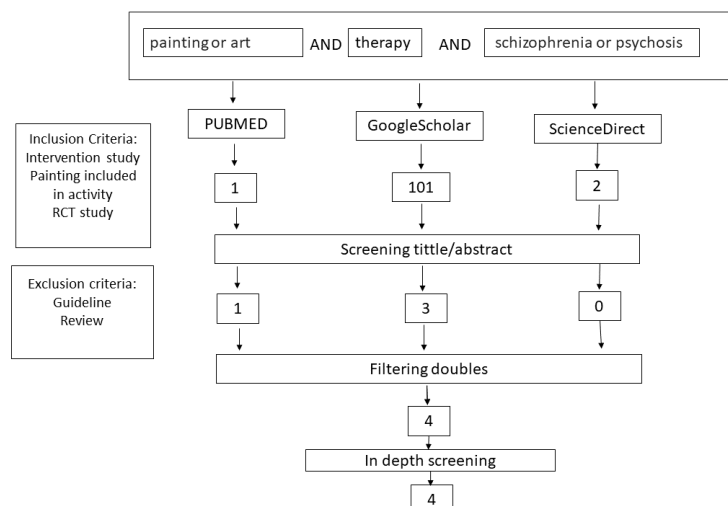


Figure 1. Flowchart of the Search Strategy

Table 2. Design, Procedure, and Measurement of the Selected Articles

Article	Year	Design	Procedure	Outcome Measurement
Richardson et al., ¹⁰	2007	RCT	- Research Subjects Patients with schizophrenia are diagnosed for at least 2 years. - Total Sample: SPC (Standard Psychiatric Care) group: 47, AT (Art Therapy) group: 43. The AT group received standard therapy from a psychiatrist and art-related group activities. Art activities were conducted once a week for @90 minutes for 12 weeks, involving expressive painting/drawing and group sharing guided by a licensed art therapist, with follow-up.	- HoNOS, Health of the Nation Outcome Scales¹² - Brief Psychiatric Rating Scale (BPRS) for observer-rated symptoms.¹³ - Social Functioning Scale (SFS)¹⁴ <i>Inventory of Interpersonal Problems</i> (IIP-32).¹⁵ - Scale for the Assessment of Negative Symptoms (SANS)¹⁶ - Lancashire Quality of Life Profile (Perc QoL)¹⁷ - Brief Symptom Inventory (BSI)¹⁸ The assessment was conducted at: - Initial research - Post-intervention - Follow-up after six months
Caddy et al., ⁵	2012	Case series	- Research Subjects: One sample group, CA (Creative Activity Group), included 403 samples, consisting of inpatients who received standard psychiatric care (period 2004-2009) and participated in art therapy group activities for a minimum of 6 sessions, each lasting @90 minutes, without participating in other group activities. The sample included: 64.8% of patients with a diagnosis of mood (affective) disorder. 14.1% of patients with schizophrenia spectrum diagnosis. 12.4% of patients with a neurotic or anxiety diagnosis. - The remaining percentage had diagnoses of substance abuse, organic disorders, and other diagnoses. - Art-related activities included various activities such as handicrafts, including painting, printmaking, clay making, knitting, and more.	<i>The Depression and Anxiety Stress Scale</i> (DASS-21)¹⁹ <i>The Quality of Life Enjoyment and Satisfaction Questionnaire</i> (Q-LES-Q)²⁰ <i>The Medical Outcomes Short Form Questionnaire</i> (SF-14) (a shortened version of the SF-36)²¹ <i>The Health of the Nation Outcome Scale</i> (HoNOS)¹² Measurements were carried out during admission and inpatient discharge.
Crawford et al., ²	2012	RCT	- Research Subjects Subjects were divided into 3 groups: - The group received standard therapy and art therapy (140 individuals). - The group received standard therapy and group activity therapy (140 individuals). - The group received only standard therapy (137 individuals). - Art activities in the art therapy group were guided by a licensed art therapist and conducted in small groups (3-8 individuals) once a week for @90 minutes, for 12 months. Activities included expressive and spontaneous painting/drawing.	<i>Global Assessment Functioning</i> (GAF scale)²² <i>Positive and Negative Syndrome</i> (PANNS) scale²³ - Dosage of psychotropic medication using the Morisky scale²⁴ - Health-related quality of life using European Quality of Life-5 Dimensions (EQ-5D)²⁵ - Social Function Questionnaire (SFQ)¹⁴ - General Well-Being Scale developed by US health and nutrition survey.²⁶ The assessment was conducted by a blind assessor at: - Initial research (Baseline) - Post-treatment (12 months) - Follow-up (24 months)
Montag et al., ¹¹	2014	RCT	Research Subjects A total of 58 patients diagnosed with schizophrenia according to DSM-IV were randomized into two groups, TAU (treatment as usual) and AT (art therapy), with each group consisting of	Primary outcomes included the assessment of psychotic and depressive symptoms through structured interviews, encompassing scores from the following scales:

-
- 29 patients. Both groups received standard psychiatric therapy.
- In the AT group, art-related activities were conducted in small groups (3-6 individuals) for 12 sessions lasting 90 minutes each, spanning over 6 weeks. These sessions were guided by a licensed art therapist. The activities involved expressive and non-directive painting and drawing using various mediums, followed by group sharing based on patient preferences.
 - Scale for the assessment of negative symptoms (SANS) ¹⁶
 - Scale for the assessment of positive symptoms (SAPS), ²⁷
 - Calgary depression scale for schizophrenia (CDSS), ²⁸
 - Global assessment of the functioning scale of the DSM-IV-TR (GAF)²²
 - Secondary outcomes comprised the evaluation of:
 - Mentalizing function parameters, including cognitive empathy assessed through the Reading the Mind in the Eyes (RME) test and the Levels of Emotional Awareness Scale (LEAS)^{29,30}
 - Self-efficacy and locus of control, assessed using the Questionnaire for Competence and Control (Fragebogen zu Kompetenz- und Kontrollüberzeugungen, FKK)³¹
 - Quality of life during follow-up after therapy, assessed using the Modular System for Quality of Life (MSQoL)³²
- Measurements were conducted by blind assessors at:
- At the beginning of therapy (baseline)
 - Post-intervention
 - Follow-up at 12 weeks
-

Table 3. Critical appraisal of validity and applicability of the four studies based on criteria.

Article, year	Level of evidence	Sample size	Validity					Importance	Applicability
			Randomization	Setting	Standardization	Blinding	(%) loss follow up		
Richardson et al., ¹⁰ (2007)	2b	90	+	+	+	-	18	- There was a statistically significant impact of Art therapy on negative symptoms measured with the SANS scale, $p=0.02$, with little or no significant result on other symptom scales. - The difference in mean change scores for the SANS scale between the SPC group and the AT group at baseline and 6-month follow-up indicates a lower value in the AT group. The change in means difference is 0.7, with a 95% confidence interval of 0.2 to 4.7.	+
Caddy et al., ⁵ (2012)	4	403	-	-	-	-	-	There were significant mean differences on all symptom scales measured between admission and discharge ($p<0.0001$) on the patient receiving art therapy, but there is no comparable control group, hence the effect of art therapy intervention remains unclear.	+/-
Crawford et al., ² (2012)	2b	417	+	+	+	+	8.9	- Differences in outcomes at 12 and 24 months were not found - The adjusted mean difference between those randomized to art therapy and standard care alone was -0.9 on the GAF Scale [95% confidence interval (CI) = -3.8 to 2.1, $p = 0.57$] and 0.7 on the PANSS Scale (95% CI = -3.1 to 4.6, $p = 0.71$). - The adjusted mean difference between those randomized to art therapy and activity groups was -1.1 on the GAF Scale (95% CI = -4.0 to 1.8, $p = 0.47$) and 3.1 on the PANSS Scale (95% CI = -0.7 to 6.9, $p = 0.11$).	+
Montag et al., ¹¹ (2014)	2b	58	+	+	-	+	3.4	- On post-treatment results, there is a significant effect of AT (art therapy) compared with TAU (treatment as usual) group on the SAPS (Scale assessment of positive symptoms) score after controlling the effects of verbal IQ $F_{(1,32)} = 11.38$, $p < 0.0125$ carried out in per-protocol analysis, and $F_{(1, 37.75)} = 4.462$, $p < 0.05$ carried out in intention-to-treat analysis. - On 12 weeks follow-up results, there is a significant effect of AT compared with TAU group on SANS (Scale Assessment of negative symptom) score after controlling the effects of verbal IQ $F_{(1,30)} = 7.820$, $p < 0.0125$ carried out in per-protocol analysis.	+

*single blinding: assessor blind; + stated clearly in the article; - not being done; +/- partially; levels of evidence based on Centre for Evidence-based Medicine.

CONCLUSION

In conclusion, the efficacy of art-related activities in improving the condition of individuals suffering from schizophrenia remained inconclusive, lacking sufficient definitive evidence. Several studies showed that art therapy, when administered over a certain period, might yield a positive impact on reducing negative symptoms in patients with this mental disorder. However, further comprehensive investigations in this domain were needed to provide a more definitive understanding of the potential benefits of art therapy as an adjunctive treatment for individuals contending with schizophrenia.

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