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# Art as an assistive method in diagnosing schizophrenia in children and adolescents: case series

## Korištenje likovnih djela u dijagnostici shizofrenije kod djece i adolescenata: serija slučajeva

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**Abstract. Aim:** To report the clinical courses of four adolescent patients, who developed childhood-onset schizophrenia and where art had a vital role in diagnosing schizophrenia, monitoring their clinical state and progression. **Case report:** All of the patients had several diagnoses throughout childhood; however, the final diagnosis was made with the help of art therapy. Following the changes in the content of our patients' drawings enabled us to notice the changes in their quality of life, functioning, and efficacy of therapy. Some of the patients specified that throughout the drawing process, they felt more satisfied, "better" and not „haunted„ by their hallucinations. This acknowledgment assured us that creative expression through art is an appropriate approach for them. It also strengthened the therapeutic relationship with our patients and encouraged us to understand their disease and make better decisions about their treatment. **Conclusions:** We propose art as an assistive method in diagnosing schizophrenia. Art can break down communication barriers and can also serve as follow-up method for children and adolescent patients with schizophrenia.

**Key words:** art; creativity; diagnosis; schizophrenia; schizophrenia, childhood

**Sažetak. Cilj:** Prikazati klinički tijek četiriju adolescenata koji su u djetinjstvu oboljeli od shizofrenije, kod kojih je korištenje likovnog izražavanja imalo glavnu ulogu u dijagnosticiranju same bolesti, praćenju kliničkog stanja i progresije. **Prikaz slučaja:** Tijekom djetinjstva, svim pacijentima dijagnosticirane su brojne dijagnoze, no početkom razdoblja adolescencije, uz pomoć likovnih djela pacijenata, postavljena je konačna dijagnoza shizofrenije. Praćenje likovnih sadržaja crteža pacijenata omogućilo je uvid u promjene kvalitete njihovih života, funkcioniranja i djelotvornosti terapije. Pojedini su naveli kako su se tijekom čitavog procesa crtanja osjećali zadovoljno, „bolje“ i da ih „ne proganjaju“ toliko njihove halucinacije. Ovakvo nas je priznanje uvjerilo da je kreativno izražavanje, kroz art-terapiju, odgovarajući pristup bolesti. Terapijski je odnos s našim pacijentima ojačao i potaknuo nas na razumijevanje njihove bolesti i stanja, a ujedno i na donošenje boljih budućih odluka o liječenju. **Zaključci:** Komunikacija kroz likovno izražavanje može poslužiti kao pomoćna metoda u dijagnosticiranju shizofrenije. Umjetnost može srušiti komunikacijske prepreke, a ujedno može poslužiti i kao metoda praćenja djece i adolescenata sa shizofrenijom.

**Ključne riječi:** dijagnoza; kreativnost; shizofrenija; djetinjstvo; umjetnost

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## INTRODUCTION

Art as a creative therapeutic form of self-expression can play a meaningful role in both maintaining health and diagnosis in clinical practice. A child can learn through art to accept his regressive and aggressive symbolic self, and can come to value his creative self, leading to a deep feeling of self-worth. The process of creating art is like holding a mirror opposed to the creator, offering an opportunity to face real problems through a background of the actual conflict. Childhood-onset schizophrenia, a rare condition in children, is characterized by onset before the age of 13 and has a prevalence of approximately 1 in 40 000. It poses diagnostic challenges and has a broad differential diagnosis spectrum<sup>1</sup>. One of the main issues is that children have a problem verbalizing symptoms and are often sufficiently out of touch. Pharmacotherapy is the foundation of therapy in all patients, on which other types of intervention are built, such as psychotherapy or art therapy. Canadian Art Therapy Association states that "Art therapy combines the creative process and psychotherapy, facilitating self-exploration and understanding. Using imagery, colour and shape as part of this creative therapeutic process, thoughts and feelings can be expressed that would otherwise be difficult to articulate"<sup>2</sup>. The role of art in mental healthcare is considered positive, as it enhances the well-being on both the staff and patients<sup>3</sup>. Multiple studies have been done so far to assess the therapeutic benefits of art therapy in schizophrenia. A recent meta-analysis of randomized controlled trials concluded that there is no beneficial effect for positive symptoms and only a slight benefit in negative symptoms<sup>4</sup>. On the other hand, there is a lack of structured studies that investigate the use of art therapy for assisting in the diagnosis of schizophrenia and monitoring the progression. In this paper, we present a case series of child and adolescent patients where art therapy had a vital role in diagnosing schizophrenia and monitoring their clinical state and progression.

## CASE SERIES

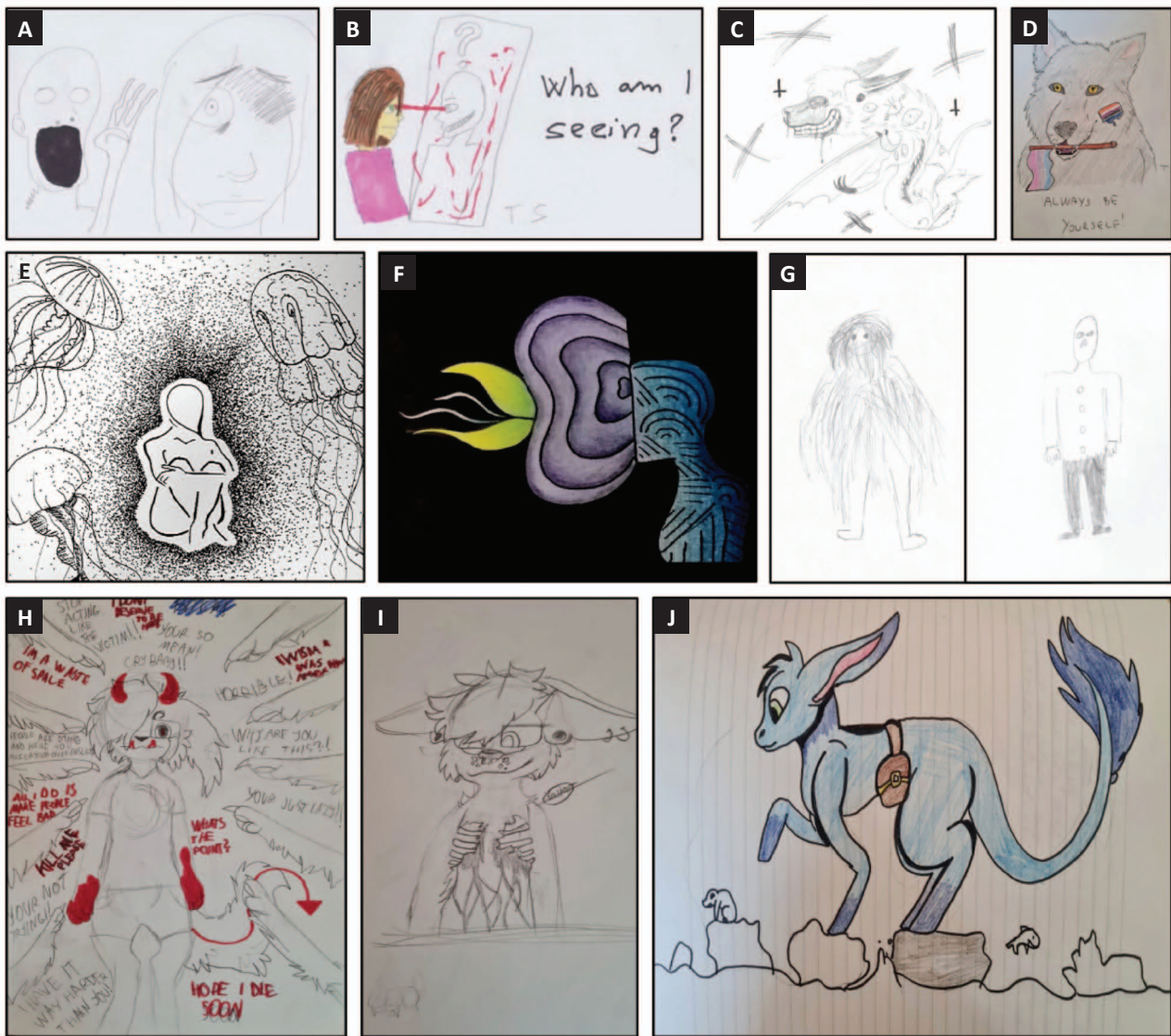
### CASE 1

The first case we present is of a 13-year-old female that came to our centre at the beginning of 2016 with a two-year history of anxiety, self-destructive behaviour, and affective disorder. There was positive heredity in her family for psychiatric disorders on her mother's side. She was examined by several child psychologists starting at the

Art can be used as a tool to assist in the diagnosis of schizophrenia in children and adolescents.

age of seven due to dysphagia and unhealthy eating habits. The patient was complaining about school adjustment, lack of concentration, and was prone to crying. Her parents also noticed new strange behaviours like screaming and jumping around the house, saying rude words. While hospitalized, there was a lack of verbalization and action throughout the whole treatment process and the patient was included in a program that consisted of creative and game therapy. Eventually she started to voice several paranoid delusions: a feeling of being watched and followed, fear of getting abducted and fear for herself and the future. She voiced suicidal thoughts for a month, while at times seemingly disconnected with expressions difficult to read. No specific diagnosis was given during the first hospitalization.

The second hospitalization at our clinic was a year after, due to vague fears of choking, fear of ghosts and being watched through the windows. We decided to encourage her to channel her emotions in drawings, when she drew an ominous figure behind her (Fig 1A). She finally opened up after this and voiced that there is another person with her constantly, often behind her. It was unclear to her who she was seeing, which she also drew during this period (Fig 1B). Antipsychotic risperidone was initiated in therapy, after which her anxiety and sleeping improved, but the hallucinations were still present. Furthermore, she had several auto aggressive



**Figure 1.** Patient artwork.

Artwork of the first patient exhibits visual hallucinations of a figure she was seeing constantly (A), but it was unclear to her who was it (B). In following months, after given new medication dose, patient's symptoms got even worse, with the artwork displaying disintegration and transparency that is characteristic for schizophrenia (C). Finally, a positive response to medication led to improvement and change in the content of her drawings (D). In the artwork of the second patient, we could observe various characters including a female character that is her „imaginary friend” (E). Disintegration was also featured in drawings in our second patient (F). The third patient voiced several hallucinations who were black and white characters „ a masked male with a knife who was attacking him, a hairy tree was scaring him.” (G). The fourth patient first mentioned hearing voices and we encouraged her to draw them (H). After a while, she started to draw the characters she saw as well, which featured transparency (I). Eventually, the positive effects of therapy led to improvement in the content of artwork (J).

thoughts, but did not harm herself. During the next few months medication dose was altered but the symptoms did not diminish and unfortunately gotten worse over time (Fig 1C). During the third hospitalization, due to the constant worsening of the symptoms, she was prescribed aripiprazole, risperidone, fluvoxamine and alpr-

zolam. The following months were better, and the patient functioned well. She started riding a bike and got regular in school, even passing an exam in music school. Besides those positive improvements, she remained anxious and had a feeling that her parents were leaving her. She had a feeling that suicidal thoughts were coming



back and that she got distanced from her classmates. Despite those setbacks, further dose adjustments of medication led to an improvement in quality of life and functioning, which could be noticed by changes in the content of her drawing (Fig 1D). Art was instrumental in making a diagnosis in this case, as the patient did not open up or voice her psychopathology that was clearly present for a longer period. Furthermore, contents of her drawings enabled us to follow the effects of pharmacological therapy and psychotherapy.

### CASE 2

The second case we present is of a 16-year-old female that came to our centre in 2019 with a two-year history of anxiety, self-destructive behaviour and affective disorder. There was positive heredity in her family for psychiatric disorders on her father's side. The patient was quiet and was avoiding socializing from an early age. She was a student at the School for applied arts and was complaining about school adjustment and how she was made fun of by classmates. At the beginning of high school, the patient started drug abuse with cannabis and ecstasy and developed suicidal thoughts.

Furthermore, the patient mentioned that she had an "imaginary friend" since childhood and how she occasionally heard a voice, which she believed represented "her subconscious". She claimed to be guided by this voice and did not trust other people.

The patient was included in a psychotherapeutic program immediately. There was a lack of verbalization and action throughout the whole treatment process. The patient claimed that drawing made her feel better, so we encouraged drawing during the therapeutic process. She drew various characters, including a female character that was her "imaginary friend". It became clear that she was drawing her visual hallucinations during the process (Fig 1E). Antipsychotic treatment was started with a satisfactory first response, but soon the patient started troubling images (Fig 1F). Despite those setbacks, eventually the quality of life and functioning improved, which was noticed by changes in the content of her drawing.

### CASE 3

The third case we present is of a 12-year-old male that came to our centre at the beginning of 2020. with a history of depression and affective disorder. There was positive heredity in his family for psychiatric disorder on both sides. He was first examined by child psychologist due to poor concentration and new strange behaviors like crying during sleep and fear of being watched. He was also drawing numerous drawings during classes, which led to poor concentration and a failure in school activities. His mother mentioned the patient's infantile behaviour in uncomfortable situations, also how introvert, depressed and desolate he was. He started to voice several paranoid delusions: a feeling of being watched through the window and followed, a feeling of someone touching him and calling by name. Therefore, the patient was feeling distressed and unable to attend the classes.

He voiced visual hallucinations during therapy, and we encouraged him to draw what he saw. The characters were black and white. He described some of them: a masked man with a knife who was attacking him (Fig 1G), twins who were chasing him and a hairy tree was scaring him. Antipsychotic therapy with risperidone was initiated soon after. Unfortunately, he is still occasionally unable to differentiate between fantasy and reality.

### CASE 4

The last case we present is of an 11-year-old female that came to our centre in 2019 at the beginning of a new school year and with a history of anxiety and suicidal thoughts. She was examined by several child psychologists during the year, but there was a constant worsening of symptoms.

The patient described traumatizing school experiences from both her classmates and teacher. She claimed that this caused her to be afraid of other people and did not want to communicate with them. She noticed other classmates were seeing her differently, they were talking behind her back and that made her feel abandoned. While being in school, strange thoughts started to occur which resulted in a lack of concentration. She claimed to hear voices talking how ugly

and stupid she was and how it would be better if she was not born. She thought for a time that the voices were her thoughts. The patient also had problems with falling asleep and waking up in the middle of the night. She did not complain about seeing things that weren't there, but we encouraged her to draw what she heard (Fig 1H). After that she started to draw characters that she saw, and we concluded that she had visual hallucinations as well (Fig 1I). Therapy with aripiprazole was initiated and the patient's clinical state im-

Artwork can be an effective way of achieving contact in children that have a lack of communication skills and it enables us to follow the efficacy of psychotherapy and pharmacological therapy.

proved. The patient started drawing her thoughts and characters she was seeing to feel better, and we could observe positive effects of the therapy on control visits (Fig 1J).

#### DISCUSSION

Art, as a creative form of self-expression, is known for a long time as a therapeutic approach to several psychiatric disorders, including schizophrenia, but seldom as a diagnostic tool. Konrad J Noronha<sup>5</sup>, in his case report of a 45-year-old client, presented that art as a reflexive, spontaneous production of the inner world, mirroring all the difficulties, could be used for making a connection to a non-communicative patient to assist with the diagnosis. Likewise, Soo-Jung Park<sup>6</sup>, presented an adolescent patient whom art therapy helped in self-expression, verbal expression, and interpersonal relations. As the process of disorganization in schizophrenic patient continues to develop, the chances of making a therapeutic communication become harder. In his work Billig<sup>7</sup> suggested that these patients, who were in psychotic regression, were trying to establish a meaningful communication through their work of art, causing them to regress from verbal communication to non-verbal. If we look at the drawings as a way of making a connection, we can use them as a tool to get an insight into the processes happening at the moment and use them in

both diagnosing the patient and during follow-up of patient's therapy efficiency.

Art presents us unusual experiences unique to each patient and enables us to visualise their hallucinations, daydreams, current feelings, and mood. Some of the common features found in the drawings are let out body parts missing in the drawings, such as legs, arms, etc., which are related to processes of disorganization in schizophrenic individuals<sup>8</sup>. In some drawings made by our patients, we can observe the effect of disintegration, that correlates to the regression of their state (Fig 1D).

Due to the problem of disintegration, patients are unable to integrate all their thoughts into a drawing, which presents as figures floating in the space and directing their way onto the art media. Transparency is one of the most characteristic traits of schizophrenic drawings. In a research made by Holzberg and Wexler<sup>8</sup>, in which they examined the use of transparency in the artwork, the result in the schizophrenic group was 33% while in the control group it was 10%. Transparency was present in the artwork of one of our patients, mostly as a demonstrative combination of internal and external elements of characters drawn (Fig 1I).

When reviewing drawings, Brar<sup>9</sup> and DeCourcy<sup>10</sup> concluded that the humanness of the people drawn correlates with the degree of personal and intrapersonal disorganization. Therefore, if the patients show a proper expression of human form and concept, then the therapeutic and prognostic factors are better. The worsening of clinical state was followed by disintegrated drawings in the second case we reported (Fig 1C, 1F). Furthermore, Volmat<sup>11</sup> and Vinchon<sup>12</sup> noted the prognostic values of the artwork and reported that the pathological art could be found prior to the onset of illness. This was exhibited in the third and fourth cases we reported in their school drawings prior to the first official exam by a psychiatrist or psychologist. Herbert<sup>13</sup> discovered that in the creative patients who became hospitalized, the first ability to recover upon hospitalization was their creative ability. Arieti<sup>14</sup> noted that if we look up through the patient's work of art, we may reveal the progress of the illness. We also observed that drawings could be an useful

tool in assessing the efficacy of therapeutic methods and the progression of the illness in all of the reported cases.

Art is a valuable tool in the diagnostic of schizophrenia in non-communicative patients. Children are sometimes not capable to express themselves sufficiently with words or do not want to verbalize their problems and symptoms

Model of Art therapy by Margaret Naumburg<sup>15</sup> states that art therapy “is based on the recognition that man’s most fundamental thoughts and feelings, derived from the unconscious, reach expression in images rather than words”. Naumburg specified that “In art therapy, the patient’s unconscious imaged experience is transposed directly into an actual pictured image” whereas in psychoanalysis “such inner visual experiences must be retranslated from an imaged into a verbal communication”. Naumburg recommended that if a patient creates nonverbal spontaneous symbolism, they will make verbal associations to their drawings. Naumburg<sup>16</sup> views art therapy as a possibly essential/ significant facilitator to psychotherapeutic contact. In our cases, art therapy and other healing methods incorporating creative interpretations became convenient for our patients to communicate their stories and express their feelings and thoughts when talking and writing was not possible, however it did not objectively improve their symptomatology.

When working with a patient, the creative process enables them “to enter into an organic, spontaneous process that comes from a deep and usually non-verbal place” providing “the client and therapist to hear and respond to the voice of the soul” as Rowe states<sup>17</sup>. They concluded that a non-verbal interpretation through art could be a therapeutic process in itself.

In the presented cases our patients had several diagnoses throughout childhood; however, the final diagnosis was made with the help of art therapy. Furthermore, following the changes in the content of our patients’ drawings enabled us to notice the changes in their quality of life, functioning and the efficacy of therapy (Fig 1D, 1J). Some of our patients were specifying that throughout the whole process of drawing they felt satisfied, “better” and not „haunted,“ by their hallucinations. This ac-

knowledgement assured us that creative expression through art therapy is an appropriate approach for them. It also strengthened the therapeutic relationship with our patients and encouraged us to understand their disease and make better decisions about their treatment.

## CONCLUSIONS

Art had a key role in diagnosing the patients reported in this case series. Artwork, as a spontaneous production that occurs as a non-verbal expression of the patients can be used for other uses but therapy, especially in children that have a lack of communication. Therefore, we propose that art can be used as a tool to assist in the diagnosis of schizophrenia in children and adults, while also strengthening the therapeutic relationship with the patients. It can also enable us to follow the efficacy of psychotherapy and pharmacological therapy due to the changes in the content of the artwork.

**Conflicts of Interest:** Authors declare no conflicts of interest.

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