

Research on the Practice and Effect Evaluation of Painting Therapy for Autistic Children Based on Color Psychology

Jingyi Yang

Krirk University, Anusaowaree, Bangkok, Bangkok 10220 Thailand

Abstract: Autism, also known as autistic disorder, is a developmental disorder caused by brain dysfunction characterized clinically by social interaction impairments, language development disorders, narrow interest ranges, and repetitive behaviors. As a syndrome with unclear etiology and varying specific symptoms among individuals, autism has attracted extensive theoretical and clinical research from experts both domestically and internationally. Researchers have clarified certain facts about autism, including its incidence rates, gender differences, and relationships with IQ and socioeconomic status. They have distinguished between biological, behavioral, and cognitive levels of research and have adopted comprehensive educational and training approaches, behavioral interventions, and medication as part of the treatment regimen. Painting therapy, based on theories such as the division of labor between the left and right hemispheres of the brain, projection techniques, the relationship between painting and the subconscious, is the most suitable way for people to express their inner world. It develops symbolic language that touches upon unknown emotional states and creatively integrates them into personality, leading to therapeutic changes. Considering the specific symptoms of children with autism, this paper attempts to apply painting therapy in the treatment intervention of autistic children through case studies.

Keywords: Autism; Art Therapy; Childrens Painting; Color Psychology

1. Introduction

Autism (Autism), also known as autistic disorder, is a developmental disorder caused by brain dysfunction characterized clinically by social interaction impairments, language

development disorders, narrow interest ranges, and repetitive behaviors [1]. The internationally recognized first report was the paper titled "Autistic Disturbances of Affective Contact" published in 1943 by Leo Kanner from Johns Hopkins University in the United States. In the article, he reported on 11 children with abnormal behavioral problems, describing them as: "from early life, they exhibit an inability to establish connections with people and the environment like normal children." Parents often notice that their children exhibit repetitive or even bizarre behaviors, a deep curiosity and focus on certain things that are hard to shift; they avoid eye contact with others, have limited vocabulary and unclear speech; their emotional expressions differ from those of typical children, lacking the necessary emotional interaction between parents and children; let alone building social relationships with peers and friends. According to statistics from the World Health Organization, the current prevalence of autism is between 0.5% and 0.15% of the population, with approximately 600,000 to 1.8 million people affected in China, and the situation is even more alarming in recent years. The incidence rate of autism in European and American countries has increased tenfold over the past year, and it is also possible that the incidence rate of autism in our country may rise at a similar rate. Against the backdrop of the increasing prevalence of autism, scholars both domestically and internationally have shown growing enthusiasm for researching autism and its treatment^{[2][3][4]}.

Painting therapy is one of the most studied and theoretically rich methods in art therapy. Art therapy through painting uses drawing as a medium and psychology and art theory as its foundation, guiding patients under professional supervision to utilize various artistic activities such as drawing, collage, and clay modeling to achieve the purpose of

integrating mind and body.

Children with autism have severe impairments in social interaction and language communication, while drawing is an activity that can directly express their psychological characteristics without relying on language and is one of the primary means for children to express themselves. Children with autism can use drawing to convey emotions and vent their feelings, allowing them to present things in their inner world that cannot be expressed through language. As an effective means of communication and therapy, children's drawing is increasingly gaining attention from professionals in psychology and education. Not only can we understand the growth and psychological development of children with autism by analyzing their art works, but we can also gain insights into their understanding of themselves and their families, thereby promoting their psychological well-being^{[5][6]}.

2. Literature Review

In 1943, American psychiatrist John B. Kanner of Johns Hopkins University first reported 11 cases of autistic children in his paper "Autism in the Context of Emotional Exchange," introducing what he termed as an unknown condition known as "Infantile Autism." This is a severe mental disorder that begins in childhood and falls under the category of pervasive developmental disorders, typically manifesting before the age of 30 months. Most affected children exhibit delays in language development, social interaction, and intellectual functioning compared to their peers, with primary symptoms including social interaction difficulties, lack of verbal communication, unusual interests, and repetitive behaviors. In China, Tao Guotai first reported 4 cases of childhood autism in 1982. In January 2007, the Rehabilitation Department of the China Disabled Persons Federation convened a seminar on autism rehabilitation during the "Eleventh Five-Year Plan" period, proposing many constructive suggestions for autism rehabilitation. In December 2007, the United Nations General Assembly adopted a resolution designating April 2nd as "World Autism Awareness Day" starting from 2008, aiming to raise awareness about autism and related research, diagnosis, and the needs of individuals with autism. Autism research has increasingly gained

national attention, and effective and appropriate interventions are crucial for treating autism. Early diagnosis and early intervention are key to improving outcomes^{[7][8][9]}.

2.1 Psychological and Behavioral Characteristics of Autistic Children

The language abilities of children with autism vary widely, and surveys show that about 50% of children with autism have aphasia. However, unlike deaf-mute children, their vocal systems are fully developed; even children with language abilities often exhibit many abnormalities, such as inarticulate speech, lack of tone variation, and other characteristics. Most of them have language function deficits, primarily manifested in the following aspects: (1) Delayed language development: Some scholars believe that 50% of children with autism will eventually use useful language¹⁴. However, these children who can use language often engage in speech activities in very limited ways. For example, they may use pronouns like "you," "I," and "he" in a chaotic manner, and some children with autism may never understand these pronouns throughout their lives; they cannot effectively communicate with others, often lacking oral skills or functional language; when shifting from one topic to another, they find it difficult to change their focus of attention; repetitive behaviors affect communication; when communicating with more than two people, they struggle to maintain the same conversation topic; and they have difficulty maintaining physical contact with conversational partners. (2) Accompanied by mechanical language and repetitive language, such as talking to themselves (some can be understood by others, while others cannot be understood at all), saying things unrelated to the current situation, and repeatedly asking the same questions (in highThe manifestation of repetitive language is particularly prominent in children with autism). Repetitive speech refers to the continuous and repetitive utterance of parts of others speech heard. This type of communication almost occurs in all infants who are learning to babble, and this phenomenon disappears by around age 3 in normal children, while children with autism may continue to exhibit this behavior throughout their lives. Repetitive speech can

be immediate or delayed. Immediate repetitive speech involves repeating what has just been heard; delayed repetitive speech includes repeating words heard at some point in the past by children with autism, which is meaningless repetition of heard words. (3) Abnormal intonation and lack of rhythm. Children with autism often have issues with intonation and speech rate when speaking, the most common being a flat and monotonous tone, some speaking in a high-pitched voice, some speaking without pauses between sentences appearing too fast, and some unable to control volume, among other variations. (4) Strong passivity in language use. Often under the repeated supervision of adults (Speaking only when asked) and even with simple language skills, they do not actively use speech to express themselves (for example: holding someone's hand to get something they want). (5) Focusing only on topics of interest. This is particularly prominent in individuals with high-functioning autism. They can be interested in a particular topic for an extended period (which may be quite long), such as natural phenomena like earthquakes or tsunamis, and will persistently talk about this topic regardless of the context or who they are talking to, without regard for whether others are interested^{[10][11]}.

2.2 Current Status of Autism Research

At present, research on autism can be divided into biological level, behavioral level, and cognitive level studies⁷. Biological research on autism includes studies on neurological dysfunction and organic lesions, psychophysiology, genetics, brain disorders during fetal and perinatal periods, viral infections, and immune dysfunction, which can provide us with knowledge about drug therapy for autism. Behavioral research on autism mainly involves studies on specific symptoms and behavioral characteristics, which can provide us with knowledge about the diagnosis and daily life management of autism. Cognitive research on autism links biological level studies and behavioral level studies through theoretical hypotheses to explain the relationships between various symptoms, which can provide us with knowledge about new methods for autism treatment interventions.

According to many observations in

psychological clinical reports, the struggles of individuals with autism in "cognitive empathy and understanding of others" have left a deep impression on people. According to Rutter's case reports, an autistic individual was very distressed with issues regarding "empathy (mindread)" towards others; he could not understand what constituted a "friend," did not know how others and the world were connected, and could not infer how relationships between people formed. Therefore, grasping the characteristics of how autistic children perceive and understand others, especially understanding what they find easy and difficult to comprehend, is crucial from a clinical psychology perspective. This knowledge aids in the development of educational psychological interventions for autistic children.

Theory of Mind (ToM) refers to the everyday ability (everydayability) to infer others' beliefs, desires, and other psychological states in order to explain and predict their behavior. In 1978, the *Journal of Behavior and Brain Science* (Behavior and Brain Science) published Premack et al.'s study on whether chimpanzees possess a "theory of mind." In this study, the authors introduced the concept of "psychological theory" for the first time. At that time, these two psychologists were..

Conducting a series of experiments on chimpanzees, including understanding whether chimpanzees can predict the behavior of their peers in certain situations. Through these experiments, they argue that "if an individual can attribute mental states to themselves or others, then the individual possesses mental theory," (Premack & Odruff, 1978). This is referred to as "mental theory" because it has two characteristics: first, it cannot be directly observed; second, it can be used to infer the behavior of others (Premack & Odruff, 1978). Baron-Cohen, Leslie & Frith (1985) used the deficits in mental theory to explain symptoms of autism, ushering in a new era in autism research, and the Theory of Mind (ToM) deficit has become one of the most influential theories in autism psychology.

Domestic research is largely focused on validating foreign cognitive psychological theories of autism in children, such as Cai Beiyi et al. (2000), who conducted behavioral assessment and social cognition studies on 49

children with autism and 30 intellectually disabled children, proving that expressive disorders, pathological phenomena, and difficulties in interacting with peers are the core issues for children with autism; while the results of ToM experiments show that the ToM abilities of children with autism are significantly behind those of intellectually disabled children, but high-functioning children with autism can complete higher-level ToM tasks. Additionally, Jiao Qing conducted two consecutive studies on the psychological inference ability of children with autism, and in his research on the factors influencing the psychological inference ability of children with autism (2000), the results showed that older physiological age accompanied by higher intelligence helps children with autism understand others minds, and there is a significant negative correlation between the severity of autism and psychological inference ability; simultaneously tested and analyzed the psychological inference ability of 10 children with autism (2001), proving that children with autism can predict others behaviors based on others wishes, but show significant difficulties in understanding others false beliefs and cannot comprehend cognitive emotions caused by false beliefs.

3. The Significance and Possibility of Painting Art Therapy in the Treatment of Autistic Children

3.1 Related Research on Painting Art Therapy at Home and Abroad

The application research of painting art therapy in China has made rapid development in recent years.

In 2003, Liu Jinhong and Liu Wenyong reported a study on calligraphy and painting therapy for 103 hospitalized psychiatric patients, showing that standardized and systematic calligraphy and painting therapy can contribute to patient recovery; Run Jun and Cui Yuhua conducted an intervention with painting therapy for 5 patients at the Peking University Institute of Mental Health, finding that group painting therapy can help patients release emotions and reflect on themselves; Li Renhong, Luo Junming, et al. explored the clinical application of painting therapy in the psychological rehabilitation of heroin-dependent individuals, studying 333

paintings created by patients to prove that painting therapy can understand the psychological state of drug addicts and promote psychological treatment.

In 2004, Meng Peixin, a psychotherapist at the Central Academy of Fine Arts, found through research on the evaluation of drawings by patients with schizophrenia and painting therapy interventions that there were differences between Chinese and Western participants in the evaluation systems of SPD (Self-Portrayal Disorder) and DDS (Drawing Diagnosis Series). Painting interventions can improve psychiatric symptoms in patients with schizophrenia, promote psychological recovery, enhance social functioning, and improve quality of life and self-concept. This paper, characterized by a large sample size, long intervention duration, typical conditions of the subjects, and the revision of two painting evaluation scales, fills the gap in domestic painting therapy research.

In 2005, Dr. Zhou Hongs doctoral dissertation at Nanjing Normal University titled "The Expression of Emotions and Mental Moistening —— A Comprehensive Study on the Theory of Modern Art Therapy" systematically researched the theory of art therapy, systematically sorting out and interpreting the connotations and extensions of art therapy, the origin and current development status of art therapy, the process of art therapy, the theoretical methods of art therapy, and the uniqueness of childrens art therapy. Zhao Zihui analyzed in "The Application and Effectiveness of Art Emotional Therapy in the Psychological Rehabilitation of Drug Abusers" that art emotional therapy can achieve good results in the treatment of drug abusers and has application value. Shen Jun et al. evaluated the personality traits of schizophrenia patients from an artistic perspective, further exploring the therapeutic value of art therapy for schizophrenia. Su Chaoxia et al. used comprehensive psychological therapy, employing painting therapy, cognitive-behavioral therapy, and family therapy to intervene with a child suffering from emotional disorders, achieving good results. Zhang Na et al. conducted calligraphy and painting therapy in psychiatry, the results showed that this is a very effective auxiliary treatment method.

Yi Chunli (2007) introduced the research on

exploring the interpersonal relationships of drug abusers through painting tests. Tao Linjin elucidated in "Painting Therapy and School Psychological Counseling: An Integrative Effect under a New Perspective" that painting therapy can complement verbal therapy, enabling children to expose their issues and uncover their strengths in an atmosphere of full respect.

3.2 Application and Effectiveness of Painting Art Therapy in Clinical Practice

Numerous studies both domestically and internationally have shown that dealing with psychological issues such as emotional conflicts and trauma is more effectively managed by the language or speech processes operated by the left hemisphere of the brain, whereas artistic approaches operated by the right hemisphere are more appropriate. This is because emotions and art (such as painting and music) are simultaneously controlled by the right hemisphere. Recent decades of Western research have demonstrated the significant role of psychological therapy through painting in addressing emotional disorders.

In 1996, Reese reported on the research conducted on the use of drawing therapy in the expression of emotional conflicts. He performed drawing therapy for 16 children aged 5 to 12 years with emotional and behavioral problems, exploring the characteristics and mechanisms of drawing therapy as a means of emotional expression. Prior to this, Carolan studied five adolescents with emotional disturbances using drawing to express their self-image, finding that drawing was beneficial in revealing the adolescents emotions and value judgments.

Painting can treat and manage traumatic emotional experiences. Sing studied the role of painting in trauma therapy. He enabled children who had experienced domestic violence to express and communicate their emotions and traumas through painting, achieving the purpose of healing

Painting Logies encourages children to release the traumatic emotions caused by their parents divorce guiding them to focus better on cognitive and social development. Backos Applied painting psychotherapy effectively processed the traumatic experiences of raped women improving their body self-image and self-satisfaction. Williams and Taylor

implemented painting psychotherapy for female prisoners who had suffered physical and sexual abuse finding that the intervention enhanced their self-esteem and confidence changed their attitudes towards life and increased their creativity.

Painting plays a crucial role in psychological intervention for bereavement. Mcintyre implemented painting intervention for children aged 9 to 12 who had lost a loved one. He found that without intervention, feelings of guilt and loneliness can be devastating throughout a child's life, while psychological therapy through painting provides a balance after the loss of a loved one. Cameron and Gallagher separately studied and conducted psychological painting interventions for elderly individuals who experienced loss due to aging, addressing the inescapable sense of despair caused by chronic illness and impending death, enabling them to accept the loss in life with greater peace.

4. Conclusion

Painting art therapy, as a hot topic in academic circles in recent years, has gained its unique theoretical basis, with numerous books on painting art therapy being translated and published domestically, and many scholars dedicating themselves to the research of painting art therapy. However, practical attempts at painting art therapy are still relatively scarce. Children with autism, as a unique group, have severe impairments in social interaction and language communication, making them well-suited as subjects for painting art therapy interventions. However, research on painting art therapy for children with autism is currently scarce and almost non-existent, thus it is highly worthy of exploration and experimentation.

Although painting art therapy has a long history and a relatively complete theoretical foundation, its effectiveness still lacks necessary empirical research. Secondly, painting art therapy places higher demands on researchers who need to play the roles of artists and teachers, requiring researchers to be passionate, skilled, good at communication, and proceed step by step. Furthermore, selecting individuals with autism as research subjects is inherently challenging because their language and social functioning development lags significantly behind that of their peers,

making appropriate subject selection particularly important and somewhat difficult.

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