

The Effectiveness of Art Therapy on Social Development in Children with Autism Spectrum Disorders

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Abstract. People with Autism Spectrum Disorder (ASD) are characterized by having problems with communication, behaviors, and social interactions. Art therapy (AT) is recognized as an effective way to deal with the difficulties of ASD since it is accessible and applicable. The application of AT at an early age can raise the possibility that one with ASD can improve the symptoms. Past studies suggested that two main deficits of ASD are psychosocial problems and social-reward processing problems. The mechanisms that make AT effective are still unclear. Communication, sense of self, eye contact, tolerance of unexpected consequences, establishing of social relationships, and decrease in anxiety level can support the development of social skills. Incorporating behavioral techniques into AT can exert a greater influence on the enhancement of problem behaviors. The means, goals, outcomes, and factors that work for AT are discussed and become essential elements of AT. The application of art materials, the artwork of children, and the attachment of art therapists can contribute to the progress of forming relationships, facilitating interactions, and alleviating self-stimulatory behaviors as well as anxiety levels. Follow-up observations and transformations of AT are recommended to be completed in future research. This review can provide some suggestions for the development of intervention programs at schools.

Keywords: Autistic Spectrum Disorder, art therapy, social development.

1. Introduction

Autism spectrum disorder (ASD) is marked by difficulties with social interaction, verbal and nonverbal communication, and stereotypical or compulsive patterns of behavior [1]. Children with ASD have problems with flexibility and self-stimulatory behaviors. These problems prevent them from normally socializing. Flexibility refers to how naturally and flexibly people behave. Self-stimulatory behaviors represent behaviors that can stimulate the sense organs to make individuals satisfied. ASD includes high-functioning autism (HFA) and low-functioning autism (LFA). Children with HFA have regular intelligence and linguistic ability, but children with LFA don't. Art therapy (AT) is applied as a treatment for autistic children because it can mitigate their symptoms and is an affordable and accessible approach. It is essential to develop social skills at an early age, as some crucial values can be formed during certain phases of growth, which is irreplaceable for social development [2]. If children are not exposed to the social environment enough, obstacles will be established in childhood, thus preventing them from further social development and hindering them from obtaining social support. Since ASD cannot be completely cured, it is vital to insert interventions at an early age for children with ASD to reduce their symptoms. Therefore, studies on the effectiveness of art therapy become particularly important. Explanations of effective mechanisms of AT can contribute to more effective intervention, resulting in better application in education and daily life to improve the social development of children with ASD.

In the systematic review of Bosgraaf et al., the author claimed that children with ASD had psychosocial problems that hindered their psychological and social functioning of children [3]. The biopsychosocial theory held that a confluence of genetic and environmental factors led to mental illness. Attachment theories paid attention to the relationship between children and their caregivers. AT was applied as a favorable treatment as it was capable of improving various mechanisms beneath psychosocial problems and allowed people with autism to indirectly communicate. The behaviors of therapists could be divided into directive, non-directive, and eclectic behaviors. Researchers found

that directive therapist behaviors were considerably effective in externalizing problems, while they were relatively weak in other kinds of psychosocial difficulties. Non-directive therapist behaviors have remarkable effects on internalizing, externalizing, and social problems. Eclectic therapist behaviors do best in reducing externalizing as well as internalizing problems. The approaches and forms of expression and behaviors of therapists could be applied flexibly according to the conditions and demands of clients to yield the best effects on psychosocial problems.

Various theories including environmental, neurobiological, neuropsychological, mental, and so on triggered the social motivation theory. This theory was introduced in a recent systematic review, which contended that social deficiencies in ASD were brought on by underlying brain problems in processing the reward value of social cues [4]. Past studies tended to focus on the motivators that could cause social impairment. The author claimed that social functioning would emerge with deficiencies in the processing of social reward. Most past studies paid attention to the potential causes and the analysis of social issues in ASD. The mechanism of social impairment was about different parts of the brain with respect to their functions. Therefore, neural abnormalities could lead to social interaction issues. Low willingness and orientation to engage in social activities and other weaknesses collectively constitute the underlying cause of social impairments. A majority of research used graphical social stimuli, such as pictures of faces and monetary nonsocial stimuli as its comparison. The methodological approaches used in the investigations differed widely. The author contended that it might be crucial to investigate particular reward processing sub-dimensions in order to elaborate ASD impairments. Many studies suggest deficiencies in social and nonsocial reward processing or individual differences in social reward processing.

Recent research confirmed that art therapy was useful in improving various aspects of individuals, such as social interactions, communications, and so on. Nevertheless, mechanisms working in the process of art therapy in relation to the enhancement of patient with ASD is still blurry. This review paper is designed to identify the mechanisms of effectiveness in AT through recent research. The demonstration related to the effectiveness of AT will be discussed with respect to the methodology, which is the elaboration of the AT applied and experimental procedures, and their conclusions about the impact AT brings on autistic people.

2. The Effectiveness of AT on Various Abilities Related to Social Development in ASD

2.1. Quantitative Evidence

Communication is essential to basic social engagement and is an important indicator of social development. AT is responsible for the improvement of vocal behaviors, thus enhancing autistic children's ability to engage in social activities and promote their social development. In a previous experiment, participants included four autistic children, their parents, and the same number of normal children and their parents as the experimental group were given AT sessions [5]. In the AT sessions, participants started with painting basic color shifts, lines, and shapes and then transitioned to depicting objects. The performances of children were tested before and after the therapy. The researcher indicated that AT had a substantial impact on children with autism particularly in vocal behavior, and improved and activated neuropsychological functions in the perceptual, linguistic, cognitive, affective, and motor regions of the brain. Assessments were completed by the children's parents or teachers. The improvement of scores regarding self-care, sensibility, communication, and language ability of assessments suggests that AT contributed to vocal-behavior promotion.

A sense of self is significant in one's social development since individuals can be aware of their positions, values, and effects in society. AT is capable of enhancing the sense of self of children with ASD. A previous study assessed the impact of AT on the image of self [6]. Participants included autistic children and their parents or teachers. The first three AT sessions were to familiarize children with the materials and therapist. The therapist could explore their preferences by creating artwork. In the next 12 sessions, children developed varied skills and connected their experiences to words. The

therapist realized the children's resistances and preferences. Different participants filled out particular scales one week before the treatment and fifteen weeks after the treatment. They were also tested during the treatment at sessions three, eight, and fifteen. Researchers found out that the image of self could partially improve difficulties in ASD, especially flexibility and social behaviors. The sense of self was facilitated and more stable and positive emotions of the children were expressed. The research could plausibly support the argument as scores from scales of different cases showed more improvements than worsening, which might be caused by the low baseline of the autistic children recruited.

Nevertheless, the application of only AT may not be enough for autistic individuals with high-barrier problems, behavioral interventions may be incorporated to reduce the barriers to problem behaviors. Only when behavior obstacles are reduced can social development be improved. In a recent study about behavioral art programs, researchers stipulated a series of measuring standards and communicated with two children, and recorded marks according to how they reacted [7]. Promotions reported by teachers and parents of two children were measured by a scale of adaptive behaviors. Researchers recorded each measurement of the children before and after the sessions. The results indicated that art therapy combined with behavioral instruction could effectively facilitate the eye contact, presentation, and verbal communication of autistic children with a low level of social behaviors. Both children became more expressive, formed interpersonal relationships, had more leisure time, and developed coping skills. Since similar enhancements of children can also be observed in previous AT without behavioral interventions, the comparisons of whether behavioral controls are included are recommended to figure out if behavior intervention is more useful in AT.

2.2. Qualitative Evidence

Eye contact can assist communication, and enduring unexpected consequences can make people more adaptive to the social environment. They are both counted as the factors affecting social development and can be practiced during AT. A previous study investigated art activities on social engagement in children with ASD [8]. AT sessions included specifically three sessions for baseline, eleven sessions for intervention, and two sessions for generalization were given to two children. The art sessions began with spontaneous artistic expression. The kids then took part in guided art activities with social skills education built in. Children participated in free art activities during the baseline and generalization sessions. They were told to give a presentation at the end of every session. The study revealed that children could more frequently use eye contact, communicate, and endure some unexpected consequences after sessions. Both children showed more complexities in their artworks, interactions with peers, willingness to try new materials, and intense interest in art activities. The results were demonstrated by assessing their artworks in different phases in AT. The progress of their artwork, the feedback from their parents, and the therapist's observation could support the statement that children's ability of eye contact and unintended-consequence toleration could be motivated by AT.

Establishing social relationships can partially account for social development because one is able to find social support or develop further interactions with people. AT is responsible for the enhancement of building relationships by applying art materials as mediums. A recent study presented a framework for the sensory-based relational art therapy approach (S-BRATA) [9]. Guardians of the children engaged in informal interviews to assess the social-emotional behaviors and sensory profile of the children before and after the AT. The researcher used various forms of art, different structures of interventions, and boundary establishment to treat different children. Analytic tables were made for each participant. The study revealed seven themes, which corresponded with the role of art materials, the significance of forming relationships with autistic children, and children's sensory profiles. The therapist and children could implicitly communicate with art materials, which were mediums of children's engagement. By applying attuning and mirroring, social interactions were improved, specifically longer eye contact, more active attitudes toward activities, and more balanced relationships between the therapist and children. By comparing and coding the information generated

from gestalt from analytic tables, the study supports that art materials were implemented to communicate and interact because the process of children asking for help to get or learn the usage of materials makes interactions and relationships necessary.

The anxiety level determines the extent one would engage in social activity. Self-stimulatory behaviors can satisfy autistic individuals to decrease their anxiety levels. The social development of children with ASD is considerably related to the anxiety level and self-stimulatory behaviors, and those two can be promoted by AT. A case study about attachment facilitating with a boy was documented [10]. Initially, the therapist drew in front of the boy to implicitly edify him. When the child became familiar with the environment and tried to use art materials, the therapist began to imitate what the child did till the sessions ended. The researcher concluded the frequency of his eye contact increased as well as his communication, while his self-stimulatory behaviors and anxiety level decreased. Attachment and attunement were formed between the boy and his artworks or therapist. His self-regulation and sensory modulations both improved after the therapy. By observing the transformation of the kid's behaviors during and after the art therapy, the outcomes of the study sustain the thesis, because artwork and attachment to the therapist can distract him from performing self-stimulatory behaviors or directly replace this behavior to make him satisfied, thus reducing the anxiety level of children.

3. Essential Elements in AT for ASD

The means, goals, and outcomes therapists observe are similar since the consensus of elements is established. In a previous study, participants including referrers and art therapists assessed the feasibility and pertinence and added their qualitative comments on items appearing in AT in two consecutive rounds in the Delphi study [11]. The context category (C), outcomes category (O), art therapeutical materials and expressions category (A), and therapeutic behavior category (T) comprised the COAT framework, which was the base of the research. Different professionals discussed and clarified the outcomes of the Delphi study. Researchers concluded that therapists reached an agreement about 46 typical elements of AT, which revealed that the inner calm, mood, and sense of self were improved by the AT. Children with ASD are thought to present the chances for growth in the management and expression of feelings, thoughts, and emotions. The study may ascertain some elements of consensus in AT, but the sample size is too small to generalize the consensus in AT. COAT framework is the basis of this study, while other professionals who do not approve of this framework may have other opinions about AT.

Different from the last research, the factors that work in AT are also explored. In another research, the art therapists were engaged in an interview and shared their tacit expertise [12]. Each participant was asked about the factors causing art therapy to be an appropriate or inappropriate approach to treating autistic children. Eventually, respondents were asked to provide evidence and clarification of their claims. The outcome stated that art therapy may have an impact on reducing autism-related behavioral issues in particular problem areas, such as flexibility, social communication, and self-image. Children's improvements in flexibility could be reflected by increased frequency of flexible behavior, a more relaxed attitude toward making decisions, and promotion of planning. Progressive social communication was indicated by problems expressing in verbal forms, more expressive communication, and more personal artwork. The clearer cognition of self-image was inferred by the management of emotions, considerations of better functions and behaviors, directions of attention, and improvements in self-confidence and self-esteem. The improvement of behaviors, communications, and self-image are three mechanisms that are affected by AT and work for social development.

4. Conclusion

The salient change of pre- and post-intervention results reveal the positive effect AT exerts on the vocal behaviors of children with ASD. Quantitative evidence suggests the AT's effectiveness in stimulating the sense of self. Incorporation of AT and behavioral interventions can yield a more effective influence on the problem behaviors of autistic children. Children's increasing frequency of eye contact is examined by differences in artwork. The application of art materials helps connect children with therapists, thus increasing interactions and forming relationships. Children's artwork and interactions with therapists can distract them from or replace their self-stimulatory behaviors and make their anxiety levels fall. COAT framework and improvements of children brought by AT require more professionals to examine the consensual elements. AT improves social development by facilitating three elements, which are behavior, communication, and self-image.

Most studies conduct AT sessions and record the children's variation before and after the program, while few studies do the follow-up recording of children's social development to explore whether the effect of AT is long-term or transitory. If the effect of AT is not long-lasting, studies of the duration of AT's improvement after the sessions are helpful in figuring out the period of AT applied. Whether AT's effectiveness can be generalized to real life is required to be clarified. Further comparisons between AT and AT with behavioral intervention are recommended. More research is needed to confirm whether the baseline of children will affect the impact of treatment. The study area of AT for LFA children is recommended to be broadened in the future since the intellectual and linguistic barriers of children may prevent them from achieving the goals of AT and weaken the effectiveness of AT.

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