

The Therapeutic Effects of Different Art Forms on Children with Autism Spectrum Disorders: A Comparative Analysis of Music, Painting and Drama

Shiye Xiao

Fine Arts & Humanities, Royal College of Art, London, UK

shiyexiao2025@163.com

Abstract. Autism affects individuals' abilities to interact, communicate, learn, and behave. Children with autism spectrum disorder (ASD) experience specific challenges in language, social interaction, and emotional expression. Recently, art therapy has gained attention as an effective intervention for children with ASD, with benefits documented across various populations. Complementary therapies, including art forms like music, painting, and drama, are increasingly popular, with approximately 74% of children with ASD using at least one such therapy. Each art form demonstrates unique therapeutic effects. This article examines existing research to compare the effectiveness of music, painting, and drama therapies in enhancing emotional expression, social interaction, and communication skills in children with ASD, evaluating their applicability and limitations. The study highlights the effects, applicability, and limitations of each art therapy form, providing insights for selecting appropriate therapeutic options for children with ASD.

Keywords: Art therapy, Music therapy, Drama therapy, Painting therapy, Autism, ASD

1. Introduction

Autism spectrum disorder (ASD) is a heterogeneous neurodevelopmental disorder characterised by impairments in social communication, sensory anomalies, and restricted behaviours or interests [1].

Traditional pharmacological treatments, although effective, often carry potential side effects, which positions art therapy and music therapy as promising non-pharmacological alternatives to alleviate symptoms and improve social, cognitive, and emotional skills without the associated risks [2].

Pharmacological medications are effective only when treating behavioural symptoms and cause adverse side effects [3]. These medications include antipsychotics to treat aggression, agitation and irritability [4], or stimulants such as methylphenidate for ADHD symptoms [4].

However, in recent years, more and more studies have shown that art therapy can provide a unique treatment path for children with ASD, helping them express emotions in non-verbal ways and improving social interactions. Music, painting and drama, the three art forms, have shown different therapeutic effects in the treatment of children with ASD.

According to *the British Association of Art Therapists*, art therapy is described as an approach to psychotherapy which incorporates visual and tactile forms of media to encourage the exploration, expression and communication of thoughts and feelings.

However, many therapists or parents of children with ADHD still don't know how to choose the right therapy for their children. Therefore, it is necessary to conduct a comparative analysis to clarify the advantages and disadvantages and applicability of each form.

2. Music Therapy

2.1. Historical Foundations of Music Therapy

The therapeutic use of music can be traced back to ancient civilizations, where it was interwoven with medical, philosophical, and spiritual practices. In ancient Greece, notable figures such as Pythagoras, Plato, and Aristotle advanced the belief that music could harmonize the body's "humors" and influence mental and emotional well-being. For Pythagoras, the mathematical properties of music held a profound effect on the human psyche and physical health, a concept that positioned music as a tool for achieving balance and harmony [5]. Plato suggested that specific musical modes could shape moral character and societal order, while Aristotle in *Politics* and *De Anima* articulated how certain types of music could evoke emotional states, thus linking musical expression with ethical and therapeutic outcomes [6].

Similar beliefs emerged in non-Western traditions, reinforcing music's universal role in healing. Egyptian, Indian, and Chinese medical traditions likewise regarded music as a vehicle for regulating emotions and supporting health. In traditional Chinese medicine, music was believed to harmonize internal energy (Qi) and balance the five elements, an approach aligning with broader Taoist and Confucian philosophies of bodily and emotional harmony. Indian Ayurveda, as described in the *Charaka Samhita*, emphasized Raga Chikitsa (music therapy) and connected specific musical forms with physiological and psychological states, suggesting that music held restorative potential for both mind and body.

2.2. The Development of Music Therapy as a Formal Discipline

The transition of music therapy from a traditional, culturally rooted practice to a formal clinical discipline began in the 20th century, catalyzed by the psychological and physical needs emerging from World War II. Music became an essential tool in the rehabilitation of war veterans suffering from trauma and injury, highlighting its capacity to aid in emotional processing and physical rehabilitation. This wartime application prompted a wave of research into music's psychological effects, supported by growing evidence of its effectiveness in reducing symptoms of anxiety, depression, and physical pain [7].

In 1950, the establishment of the National Association for Music Therapy (NAMT) in the United States marked a pivotal moment in the professionalization of music therapy. This development provided a structured platform for music therapists and catalyzed the field's growth as an interdisciplinary science integrating music with psychological and physiological research. Music therapy evolved from passive listening to interactive methodologies, including structured improvisation, guided imagery with music, and active musical participation, reflecting a deeper understanding of how different techniques could target specific therapeutic goals.

2.3. Contemporary Evidence and Neurobiological Insights

Since the late 20th century, advancements in neuroscience and psychology have provided empirical support for music therapy's efficacy. Studies have demonstrated that music activates brain regions associated with memory, emotion, and motor coordination, offering a basis for its use in treating neurodegenerative conditions, such as Alzheimer's and Parkinson's disease. Neuroimaging research reveals that rhythm and melody can modulate neural pathways involved in stress regulation, attention, and social interaction, thus broadening the application of music therapy to include disorders such as autism spectrum disorder. These findings underscore music therapy's ability to engage multiple brain systems, validating its impact on a physiological level [8].

Meta-analyses and systematic reviews further reinforce music therapy's clinical relevance across diverse populations. For instance, studies have consistently shown its effectiveness in reducing symptoms of anxiety, depression, and pain, as well as improving mood and quality of life in cancer patients and individuals with chronic illness [8]. Such evidence has established music therapy as a key component of integrative medicine, influencing protocols in palliative care, mental health, and rehabilitation [8].

2.4. What is music therapy and how it works

Music therapy is an increasingly used form of therapy for children with ASD. This fact results from the search for newer and more effective forms of therapy for children with this disorder. More and more extensive and new research provides moderately reliable results that music therapy can help children with ASD in their everyday functioning. Mainly by reducing the severity of autism symptoms. Taking into account that this type of intervention rarely caused side effects [9].

Music therapy helps children with ASD by tapping into the brain's processing of musical elements, which stimulate areas related to emotion, social interaction, and cognition. Research indicates that music has a unique ability to activate neural circuits that support social behavior and communication, often areas of challenge for children with ASD [8]. This therapeutic method often includes active participation, such as singing, playing instruments, or rhythmic movement, which enhances the child's ability to respond, listen, and engage with others. By creating predictable rhythmic patterns, music therapy can provide structure, a factor found to be particularly effective for children who benefit from routine and regularity in their activities [10].

Improvisational music therapy is particularly effective for children with ASD because it allows therapists to respond to each child's unique behaviors and interactions in real-time. This flexibility supports the development of social reciprocity and enhances

non-verbal communication skills through spontaneous musical exchanges [10]. Additionally, music therapy has been shown to positively influence emotional regulation. The structured, engaging nature of music stimulates emotional responses and provides a safe space for children to explore and manage their feelings. This is critical for children with ASD, who may struggle with understanding and expressing emotions [11].

Research supports the efficacy of music therapy in reducing core symptoms of ASD. Studies consistently show improvements in social engagement, verbal and non-verbal communication, and emotional responsiveness, with minimal side effects reported. A meta-analysis found that music therapy significantly improves social interaction and communication, essential skills for children's everyday functioning and their ability to navigate social environments [11].

2.5. The impact of music on emotions and social interactions

Empirical research indicates that music therapy can significantly enhance emotional regulation and social skills in children with Autism Spectrum Disorder (ASD), particularly through interactive music activities such as group singing and rhythm exercises. For instance, Bieleninik, Geretsegger [12] conducted a randomized controlled trial (RCT) examining the impact of music therapy on social communication skills in children with autism. In this study, the experimental group received music therapy sessions twice a week for 60 minutes over 12 weeks, while the control group received no music-related therapy. The results revealed that children who underwent music therapy showed substantial improvements in nonverbal communication, social interaction, and emotional expression. This suggests that music therapy can effectively promote social engagement in children with ASD, especially by reducing anxiety and fostering emotional expression.

Kim, Wigram [13] studied 30 children with autism, aged 5 to 10, by randomly assigning them to either an experimental group or a control group. The experimental group participated in 16 music therapy sessions focused on identifying and expressing emotions through musical activities. Findings showed that children in the experimental group had significantly enhanced abilities in recognizing emotional facial expressions and responding emotionally. This supports the idea that music, as a form of nonverbal communication, can effectively aid in the emotional processing of children with ASD.

Music therapy also provides opportunities for social interaction through activities such as tone imitation and repetition, allowing children to gradually develop an understanding of others' emotions and responses. While the effect of music therapy on both verbal and nonverbal communication requires further exploration, current evidence suggests it positively influences social skills and daily functioning [14].

Additional research underscores the broader impact of music therapy on language development and communication. Studies by Livengood-Ordóñez [15] and Guanoluisa [16] demonstrate notable improvements in language processing and memory in individuals with dyslalia. Furthermore, specific methodological strategies within music therapy have proven effective in enhancing speech clarity and fluency [17].

2.6. Advantages and limitations of music therapy

The advantage is that music can trigger an immediate emotional response, and music therapy can provide an alternative expression channel for children with limited language ability. The limitation is that music therapy may cause overstimulation for some highly sensitive ASD children, and the treatment effect may vary depending on the child's musical interests and background. Music therapy is effective for children and adolescents with autism spectrum disorder (ASD) across a broad age range (3–18 years). The methods and objectives of therapy can be adapted according to developmental stages, addressing specific needs relevant to each age group. Research suggests that younger children often show progress in language and emotional expression, while adolescents benefit more in terms of social skills and emotional regulation.

For young children (ages 3–7), music therapy primarily focuses on enhancing language and social skills, helping them learn to communicate emotions and cooperate with others through music-based activities [18]. For school-age children (ages 7–12), therapy goals often expand to include social skills, emotional regulation, and academic support, allowing children to practice cooperation, turn-taking, and sharing in group settings [19]. Adolescents (ages 12–18) benefit from music therapy as a means to manage emotional challenges, stress, and complex social situations, providing a healthy channel for emotional expression and coping strategies for the stresses of adolescence [20].

3. Painting Therapy

3.1. History of painting therapy

The roots of painting therapy date back to the early 20th century, intertwined with the development of psychoanalysis. Influential psychoanalysts Sigmund Freud and Carl Jung were among the first to explore the therapeutic potential of visual art as a medium for accessing the subconscious. Freud's theory of the unconscious mind suggested that repressed thoughts and emotions could be unveiled through creative expression, while Jung emphasized symbols in art as pathways to understanding deeper, often hidden, aspects of the psyche [21]. This laid the groundwork for art to become a tool in psychotherapy, as therapists began recognizing the potential of art-making to bypass verbal limitations and reveal emotional states.

Painting therapy originated in the early 20th century, influenced by the psychoanalysis of Freud and Jung, emphasizing the expression of the subconscious through art. In the mid-20th century, Margaret Naumburg and Edith Kramer promoted its development and regarded painting as a psychotherapy tool. In 1969, the American Art Therapy Association was established, and painting therapy was standardized and widely used. In the 21st century, neuroscience has provided support for its efficacy, and digital technology has further expanded the application of painting therapy, especially in remote treatment. Today, painting therapy has become an important mental health intervention method [22].

The formalization of painting therapy as a therapeutic discipline began in the 1940s, largely due to the pioneering work of Margaret Naumburg and Edith Kramer, often regarded as the founders of art therapy. Naumburg, a psychologist and educator, saw painting as a means for patients to express their unconscious thoughts and believed that the creative process could serve as “symbolic speech” in therapy. She championed the idea that spontaneous painting could bring repressed memories and conflicts to consciousness, making it an effective tool in psychoanalytic practice. In parallel, Edith Kramer, an artist and therapist, focused on the expressive power of art-making, emphasizing the creative process itself as therapeutic rather than solely focusing on the final product. Kramer saw painting as a way to integrate conflicting emotions, fostering emotional resilience and self-understanding in individuals struggling with psychological distress [23].

In the late 20th and early 21st centuries, advancements in neuroscience provided empirical support for the efficacy of painting therapy. Studies in neuroimaging revealed that engaging in creative activities like painting can activate areas of the brain involved in emotion regulation, memory, and sensory processing. This scientific validation helped further establish painting therapy as an evidence-based practice, especially in its application for children with Autism Spectrum Disorder (ASD). Neuroscientific insights underscored how visual art activities could engage and stimulate neural pathways associated with emotional expression and social cognition, benefiting individuals with ASD who often struggle with these areas.

The digital age has also expanded the scope of painting therapy. With the rise of digital art tools and online platforms, therapists can now offer virtual painting therapy sessions, enabling remote access for individuals who may not be able to attend in-person sessions. This has proven particularly valuable in reaching underserved populations or individuals with limited mobility, and it has increased accessibility for children with ASD, allowing them to engage in structured therapeutic art activities from home environments. Digital painting therapy has also enabled new forms of creative engagement, providing children with ASD an opportunity to explore digital colors, textures, and shapes, which can be highly engaging and customizable based on their needs [24].

In conclusion, painting therapy has evolved from early psychoanalytic explorations of the subconscious to a scientifically supported and professionally structured therapeutic practice. Its adaptability across various populations, especially children with ASD, and the rise of digital tools have solidified painting therapy’s place as a valuable and versatile approach within mental health and developmental therapies. Today, painting therapy is widely recognized as a powerful medium for emotional and psychological healing, blending traditional practices with modern scientific insights and technological advancements.

3.2. Painting promotes emotional expression

Empirical research indicates that painting therapy can effectively enhance self-expression in children with Autism Spectrum Disorder (ASD) by providing a structured yet creative outlet. Through the selection of colors, shapes, and patterns, children with ASD can communicate complex emotions, fears, and desires in a non-verbal manner, fostering greater self-confidence and initiative in emotional expression. The use of visual elements—including picture books, movies, and artworks—plays a crucial role in this therapy, with picture books especially valuable for engaging children in safe emotional exploration [25]. Painting therapy also contributes to adaptive skills development and enables children to express negative emotions in a controlled, safe environment, increasing self-awareness [26]. One significant advantage of painting therapy is its adaptability to children across different levels of ASD, as highlighted by studies showing positive effects on social communication and interpersonal skills Koo and Thomas [27, 28]. However, painting therapy has certain limitations; its typically solitary nature may restrict its effectiveness in fostering social skills, and some children may struggle with interpreting abstract visual elements, which can reduce the therapy’s impact. To deepen understanding of its benefits, future research should involve larger, more diverse samples and longer study durations [29]. This form of therapy is especially suitable for school-age children (6–18 years), as it encourages exploration of self-awareness, emotional regulation, and social interaction by enabling them to externalize internal conflicts and engage more comfortably with others [22].

4. Drama therapy

4.1. Origins and Development of Drama Therapy

Drama therapy, rooted in the early 20th century, has a foundational link to psychodrama—a method pioneered by Jacob Levy Moreno in the 1920s. Moreno, a psychiatrist and social scientist, introduced psychodrama as a therapeutic approach that utilized role-playing and enactment to explore emotional experiences and interpersonal dynamics. Psychodrama was distinct in its active, experiential approach to psychotherapy, diverging from more traditional methods by placing clients in dynamic roles that allowed them to “perform” aspects of their life or psyche on a stage, engaging directly with their emotions and relationships [30]. Moreno’s

approach was revolutionary at the time, offering a way to confront and process emotional conflicts through dramatized interactions, which he believed could foster spontaneity and self-awareness.

Throughout the 1950s and 1960s, drama therapy began to establish itself as an independent discipline, blending drama techniques with psychotherapy principles. Pioneers in the field, such as Peter Slade in the United Kingdom, expanded on Moreno's methods, focusing on using drama to support mental health and personal development. This period marked a shift toward formalizing drama therapy as a structured therapeutic discipline, with practitioners beginning to integrate theatrical elements like improvisation and scripted performance into treatment frameworks. In 1979, the establishment of the American Drama Therapy Association (ADTA) contributed to the field's professionalization, creating a standardized framework for training and practice, which further validated its use in therapeutic settings.

4.2. Mechanisms and Techniques in Drama Therapy

Drama therapy operates through experiential and symbolic techniques, utilizing role-play, improvisation, and narrative construction to facilitate emotional expression and self-discovery. Unlike traditional talk therapy, drama therapy enables clients to engage in "action methods," actively exploring their inner worlds through visual and physical enactment. This approach allows clients to access difficult emotions or memories in a controlled environment, transforming abstract feelings into tangible, processable experiences [31]. The therapeutic process in drama therapy emphasizes metaphor and role-play, helping clients to understand and reframe their life stories, work through unresolved issues, and experiment with alternative perspectives and behaviors.

Role reversal is a central technique within drama therapy, directly drawn from psychodrama, where individuals play alternate roles (such as those of family members or aspects of themselves) to gain insights into their own experiences. The use of this technique in drama therapy has shown significant therapeutic benefits, helping individuals to confront personal conflicts and gain empathy for others' viewpoints [32]. Such techniques also facilitate a deeper engagement with one's inner experiences and foster the integration of emotional and cognitive processing.

4.3. Integration with Other Modalities and Modern Applications

Entering the 21st century, drama therapy has increasingly integrated with other therapeutic disciplines and creative arts therapies, including dance, music, and visual arts, enhancing its versatility and scope. This interdisciplinary integration aligns with modern therapeutic needs, as clients benefit from a range of sensory and expressive modalities. Scientific research has also contributed to validating drama therapy, particularly in areas such as trauma treatment, mental health interventions, and educational settings. Studies have shown that drama therapy can be effective in reducing symptoms of post-traumatic stress, anxiety, and depression by helping clients externalize internal conflicts in a safe environment [33].

Drama therapy has also expanded globally, with practitioners adapting its methods to various cultural contexts. This adaptability highlights the universal applicability of drama therapy principles, as practitioners tailor role-playing and narrative techniques to respect and incorporate cultural norms and values. Such cultural adaptability is particularly valuable in cross-cultural therapy settings, where traditional therapeutic methods may not be as easily applicable [30].

4.4. the Therapeutic Benefits of Drama Therapy for Children and Adolescents with ASD

Drama therapy provides a unique, interactive approach to supporting children with autism spectrum disorder (ASD) in exploring interpersonal relationships, emotional responses, and behavioral patterns. Through role-playing, reenactment, and narrative construction, children can engage with social scenarios in a controlled environment, helping them safely practice social interactions, recognize and express emotions, and strengthen both verbal and non-verbal communication skills [37]. This therapeutic form emphasizes body language, facial expressions, and vocal modulation, offering numerous benefits without significant side effects [34]. The highly situational nature of drama therapy allows children to apply learned communication skills in specific contexts, and early intervention has shown significant positive impacts on emotional and social development, including parent-child relationships [35]. However, its complexity may pose challenges for children with severe social impairments or lower cognitive functioning. Tailored to age, drama therapy can aid school-age children (6-12) in developing self-awareness and emotional regulation, while for adolescents, it provides a safe space to navigate the emotional challenges and social pressures of puberty, fostering self-identity and social skills [36]. As existing research has predominantly focused on younger children, further studies are needed to understand the effects of drama therapy on adolescents with ASD, particularly those transitioning through puberty, to optimize therapeutic approaches across developmental stages [37].

Table 1. Comparison of three forms of art therapy

Forms	Music Therapy	Painting Therapy	Drama Therapy
Main Effects	Emotional regulation, social interaction	Self-expression, emotional release	Social skills, emotional expression
applicability	Suitable for children who like sound stimulation	Suitable for children with strong visual expression ability	Suitable for children with high functioning ASD
limitation	Overstimulation may affect some children	Lack of interaction, limited social improvement effect	May be too complex for low-functioning children
age group	3-18	6-18	6-18

5. Comprehensive Analysis and Future Research Directions

In summary, music therapy, painting therapy, and drama therapy each offer distinct therapeutic effects that address different aspects of emotional and social development in children with autism spectrum disorder (ASD). Music therapy primarily aids in emotional regulation, making it particularly effective for enhancing emotional expression; painting therapy provides an individualized approach, allowing children to convey their personal thoughts and feelings visually; and drama therapy is highly effective in fostering social interaction and communication skills. Future research could explore the integration of these art forms into a multifaceted therapeutic approach, potentially yielding a more holistic treatment option for ASD. Furthermore, developing personalized treatment plans tailored to individual differences among children will be crucial for maximizing therapeutic outcomes.

6. Conclusion

Art therapies present diverse pathways for enhancing nonverbal communication and social skills in children with ASD. By comparing the three primary forms—music, painting, and drama—this paper highlights their respective strengths and limitations in supporting emotional expression, social interaction, and communication skills development. To leverage these therapeutic effects effectively, selecting the most appropriate art form should be based on each ASD child's unique needs, interests, and functional capabilities. While music therapy is broadly suitable across age groups, painting and drama therapies are particularly advantageous for older children who may benefit more from their structured, expressive frameworks.

References

- [1] Lord, C., et al. (2020). Autism spectrum disorder. *Nature Reviews Disease Primers*, 6(1), 1-23.
- [2] Martínez-Vérez, V., Gil-Ruiz, P., & Domínguez-Lloria, S. (2024). Interventions through Art Therapy and Music Therapy in Autism Spectrum Disorder, ADHD, Language Disorders, and Learning Disabilities in Pediatric-Aged Children: A Systematic Review. *Children*, 11(6), 706.
- [3] Brondino, N., et al. (2015). Complementary and alternative therapies for autism spectrum disorder. *Evidence-Based Complementary and Alternative Medicine*, 2015(1), 258589.
- [4] LeClerc, S., & Easley, D. (2015). Pharmacological therapies for autism spectrum disorder: a review. *Pharmacy and Therapeutics*, 40(6), 389.
- [5] Bruscia, K. E. (1989). Defining music therapy.
- [6] Davis, W. B. (2012). The First Systematic Experimentation in Music Therapy: The Genius of James Leonard Corning. *Journal of Music Therapy*, 49(1), 102-117.
- [7] Mastnak, W. (2015). The Evolution of Music Therapy. *Musik-, Tanz- und Kunsttherapie*, 26(4), 207-221.
- [8] Koelsch, S. (2009). A Neuroscientific Perspective on Music Therapy. *Annals of the New York Academy of Sciences*, 1169(1), 374-384.
- [9] Geretsegger, M., et al. (2022). Music therapy for autistic people. *Cochrane Database of Systematic Reviews*, 2022(5).
- [10] Ke, X., et al. (2022). Effectiveness of music therapy in children with autism spectrum disorder: A systematic review and meta-analysis. *Frontiers in Psychiatry*, 13, 905113.
- [11] Amirah, S., et al. (2023). Music therapy improves social interaction and verbal communication skill among children with autism spectrum disorder: A systematic review and meta-analysis. *Narra X*, 1(2).
- [12] Bieleninik, L., et al. (2017). Effects of improvisational music therapy vs enhanced standard care on symptom severity among children with autism spectrum disorder: The TIME-A randomized clinical trial. *JAMA*, 318(6), 525-535.
- [13] Kim, J., Wigram, T., & Gold, C. (2009). Emotional, motivational and interpersonal responsiveness of children with autism in improvisational music therapy. *Autism*, 13(4), 389-409.
- [14] Mayer-Benarous, H., et al. (2021). Music therapy for children with autistic spectrum disorder and/or other neurodevelopmental disorders: a systematic review. *Frontiers in Psychiatry*, 12, 643234.
- [15] Livengood de Sanabria, M. d. I. Á. (2022). Musicoterapia en infantes: funciones cognitivas y emociones. *Revista Cubana de Pediatría*, 94(2).
- [16] Guanoluisa, M. L. R., Baño, E. L. T., & Barragán, M. F. C. (2023). Estrategias para niños con problemas en el desarrollo del lenguaje. *Dilemas Contemporáneos: Educación, Política y Valores*.

- [17] Driessen, M. T., et al. (2010). The effectiveness of physical and organisational ergonomic interventions on low back pain and neck pain: a systematic review. *Occupational and Environmental Medicine*, 67(4), 277-285.
- [18] Kim, J., Wigram, T., & Gold, C. (2008). The effects of improvisational music therapy on joint attention behaviors in autistic children: a randomized controlled study. *Journal of Autism and Developmental Disorders*, 38, 1758-1766.
- [19] Tsirigoti, A., & Georgiadi, M. (2024). The Efficacy of Music Therapy Programs on the Development of Social Communication in Children with Autism Spectrum Disorder: A Systematic Review. *Education Sciences*, 14(4), 373.
- [20] Pasiali, V., LaGasse, A. B., & Penn, S. L. (2014). The effect of musical attention control training (MACT) on attention skills of adolescents with neurodevelopmental delays: A pilot study. *Journal of Music Therapy*, 51(4), 333-354.
- [21] Rubin, J. A. (2012). Approaches to art therapy: Theory and technique. Routledge.
- [22] Huss, E. (2015). A theory-based approach to art therapy: Implications for teaching, research and practice. Routledge.
- [23] Kramer, E. (1971). Art as therapy with children. Schocken Book.
- [24] Bringas, M. L., et al. (2015). Effectiveness of music therapy as an aid to neurorestoration of children with severe neurological disorders. *Frontiers in Neuroscience*, 9, 427.
- [25] Huili, S., et al. (2023). Research on the design of somatosensory interactive games for autistic children based on art therapy. *Frontiers in Psychiatry*, 14, 1207023.
- [26] Hu, J., et al. (2021). Art therapy: a complementary treatment for mental disorders. *Frontiers in Psychology*, 12, 686005.
- [27] Koo, J., & Thomas, E. (2019). Art therapy for children with autism spectrum disorder in India. *Art Therapy*, 36(4), 209-214.
- [28] Schweizer, C., et al. (2020). Evaluation of 'Images of Self,' an art therapy program for children diagnosed with autism spectrum disorders (ASD). *Children and Youth Services Review*, 116, 105207.
- [29] Abdulah, D. M., Abdulla, B. M. O., & Liamputtong, P. (2023). Impact of short and intensive art-based intervention on symptomatology and social interactions among children with autism spectrum disorder. *Clinical and Experimental Pediatrics*, 66(10), 447.
- [30] Riva, M. A., Grassi, L., & Belingheri, M. (2020). Jacob L. Moreno and psychodrama – psychiatry in history. *The British Journal of Psychiatry*, 217(1), 369-369.
- [31] Johnson, D. R. (1982). Principles and techniques of drama therapy. *The Arts in Psychotherapy*, 9(2), 83-90.
- [32] Casson, J. (2000). Maxwell Jones: Dramatherapy and Psychodrama, 1942–9. *Dramatherapy*, 22(2), 18-21.
- [33] Giacomucci, S. (2021). History of Sociometry, Psychodrama, Group Psychotherapy, and Jacob L. Moreno, in Social Work, Sociometry, and Psychodrama: Experiential Approaches for Group Therapists, Community Leaders, and Social Workers (pp. 31-52). Springer Singapore.
- [34] Elbeltagi, R., et al. (2023). Play therapy in children with autism: Its role, implications, and limitations. *World Journal of Clinical Pediatrics*, 12(1), 1.
- [35] Divya, K., et al. (2023). DIR/floor time in engaging autism: a systematic review. *Iranian Journal of Nursing and Midwifery Research*, 28(2), 132-138.
- [36] Johnson, D. R., Johnson, D. R., & Emunah, R. (2009). Current approaches in drama therapy.
- [37] Rahimi Pordanjani, S. (2021). Effectiveness of drama therapy on social skills of autistic children. *Practice in Clinical Psychology*, 9(1), 9-18.