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# **Art Therapy as an Educational and Therapeutic Intervention for Children with Autism Spectrum Disorder: A Comprehensive Review of International Findings**

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**Abstract.** Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition characterized by challenges in social communication, restricted interests, repetitive behaviors, and sensory processing differences. As contemporary approaches to autism increasingly emphasize holistic, individualized, and strengths-based frameworks, the role of art therapy has received substantial attention within educational and therapeutic contexts. This article presents a comprehensive narrative review of international studies on the application of art therapy for children with ASD, drawing upon empirical, theoretical, and clinical literature published between 2014 and 2025. The review synthesizes evidence across diverse modalities including visual arts therapy, music therapy, drama therapy, and dance/movement therapy. Findings highlight consistent improvements in emotional expression, social interaction, sensory regulation, imaginative development, and adaptive behavior. Moreover, art therapy appears particularly beneficial for children with limited verbal communication, those experiencing high levels of anxiety, or those with pronounced sensory needs. Although results across studies are promising, significant methodological limitations persist, such as small sample sizes, heterogeneity of interventions, limited use of standardized assessment tools, and uneven availability of trained art therapists—especially within educational systems. The article discusses implications for inclusive education, clinical practice, and cultural accessibility, emphasizing the need for integrated, multidisciplinary approaches. Recommendations for future research include the development of standardized intervention protocols, longitudinal designs, and culturally responsive frameworks to enhance the evidence base and expand access to art therapy for autistic children worldwide.

**Keywords.** Art therapy; Autism Spectrum Disorder; inclusive education; creative arts therapies; dance/ movement therapy; drama therapy; music therapy

## **1. Introduction**

Autism Spectrum Disorder (ASD) is recognized as a neurodevelopmental condition defined by persistent challenges in social communication and interaction, alongside restricted, repetitive behaviors and atypical sensory processing (American Psychiatric Association, 2022; World Health Organization, 2022). ASD encompasses a wide range of characteristics, abilities, and developmental trajectories, reflecting its conceptualization as a spectrum (Uljarević et al., 2020). Prevalence estimates indicate that ASD affects nearly 1 in 36 children (Maenner et al.,

2023), underscoring its significance for educational systems, clinical services, and family contexts. Developmental research highlights substantial variability in cognitive profiles, language acquisition, emotional functioning, and behavioral adjustment among autistic children (Frith, 1999; Tager-Flusberg, Joseph, & Folstein, 2001). Emotional and behavioral comorbidities are frequent, with anxiety presenting in 42–79% of cases (Kent & Simonoff, 2017), and additional concerns such as depression (Brown et al., 2024), loneliness (Hymas et al., 2024), and difficulties in social participation commonly reported. The etiology of ASD is multifactorial, involving complex interactions between genetic and environmental influences (Cheroni, Caporale, & Testa, 2020). Children with ASD frequently experience sensory processing differences, challenges in emotional regulation, reduced joint attention, and limited reciprocal communication (Lord et al., 2020; Levy et al., 2009). These difficulties substantially influence functional participation in home, school, and community environments (Little et al., 2014). Consequently, interdisciplinary approaches addressing multimodal developmental domains have become essential within early intervention and special education frameworks. Increasingly, contemporary frameworks advocate for holistic, inclusive, and strengths-based approaches that emphasize individual differences, neurodiversity, and the importance of supportive environments (Donella, David, & Leary, 2012; Moat, 2013). In this context, interventions that extend beyond traditional behavioral models—such as creative arts therapies—have gained prominence. Creative arts therapies, including art therapy, music therapy, drama therapy, and dance/movement therapy, have been identified as promising pathways for fostering communication, emotional expression, sensory integration, and social development in autistic children (Evans & Dubowski, 2001; Malchiodi, 2012; Richardson, 2016). Art therapy, in particular, provides a non-verbal, multisensory, and symbolically rich medium that aligns closely with the needs and strengths of many autistic individuals. The creative process enables children to express experiences that may be inaccessible through language, to regulate sensory input through tactile and visual engagement, and to participate in meaningful relational and imaginative interactions (Kramer, 1993; Martin, 2009). Furthermore, art therapy allows for individualized and developmentally attuned interventions within educational, clinical, and community settings. The present article delivers a comprehensive synthesis of research published between 2014 and 2025, mapping therapeutic applications, documenting outcomes, identifying methodological challenges, and outlining future directions for research and practice. This introduction frames the need for robust, interdisciplinary approaches and positions art therapy as a valuable, multidimensional intervention for children and adolescents with ASD.

## **2. Literature Review**

This literature review synthesizes international studies published between 2014 and 2025 concerning the use of art therapy as an intervention for children and adolescents with ASD. The review is organized into thematic subsections reflecting major areas in which art therapy has been applied and studied: (1) conceptual foundations of art therapy; (2) ASD characteristics relevant to artistic and therapeutic engagement; (3) creative arts therapy modalities; (4) evidence for visual arts therapy; (5) evidence for music therapy; (6) evidence for drama and theatre-based interventions; (7) evidence for dance/movement therapy; (8) accessibility and inclusion in cultural settings; and (9) limitations in the existing research. Together, these subsections provide an integrated foundation for understanding the therapeutic potential and challenges of art-based interventions for autistic children.

## **2.1. Conceptual Foundations of Art Therapy**

Art therapy is grounded in psychological, developmental, and creative processes that position artistic expression as a means for emotional communication, symbolic exploration, and personal development. Historically, the work of pioneers such as Naumburg and Kramer established art therapy as both a psychotherapeutic and art-based discipline, emphasizing either symbolic communication or the inherently therapeutic nature of the creative process (Waller, 1991, 1998). Contemporary definitions, including those of the American Art Therapy Association, highlight the integration of mental health theory with creative practice to support emotional, cognitive, relational, and sensory regulation outcomes in diverse populations. The creative process facilitates communication beyond verbal limitations, enabling individuals—particularly children with developmental differences—to express complex internal states through imagery, color, form, and movement (Richardson, 2016; Kramer, 1993; Martin, 2009; Van Lith, Stallings, & Harris, 2017). Such processes align closely with the characteristics and needs of autistic children, who may experience difficulty with conventional verbal communication but demonstrate strengths in visual perception, detail-oriented processing, and non-linear expressive styles (Babaei et al., 2020). Evans and Dubowski (2001) believed that drawing on paper could help children express their inner images and thus enhance imagination and abstract thinking. Drawing can also help children with ASD express and vent negative emotions and thus have a positive emotional experience and develop self-awareness (Martin, 2009). In recent years, there has been a growing interest in alternative forms of therapy, such as creative arts, with the aim of reducing anxiety by providing stigmatized non-invasive approaches to promote the psychosocial well-being of children with disabilities. (Shaffir, 2020). Creative therapies enable people with autism of all ages to communicate and express themselves emotionally better (Moat, 2013). Herbert and Weintraub (2012) in their holistic view of the diagnosis and treatment of autism, suggest that autism is not simply a neurodevelopmental disorder of genetic origin, nor is it simply a brain problem, but concerns the whole body. For this reason, the artistic experience offered through creative arts occupies a privileged position as it simultaneously involves the mind, the brain, emotion, movement and senses (Malchioldi, 2012).

## **2.2. ASD Characteristics Relevant to Art Therapy**

ASD is characterized by persistent challenges in reciprocal interaction, social communication, sensory regulation, and flexibility in behavior. Many children on the spectrum experience heightened anxiety, difficulties in emotional expression, and limitations in symbolic or imaginative play, though recent research has illustrated substantial variability in imaginative capacities among autistic youth. The multisensory, nonverbal, symbolic, and visually oriented characteristics of art-making provide an accessible medium for children with ASD. The structured yet flexible nature of artistic activities can reduce anxiety, provide predictable routines, and create opportunities for social reciprocity. Additionally, sensory elements of art materials—such as tactile input from clay or brush textures—can support sensory integration when introduced in controlled therapeutic contexts. Several studies (Shaffir, 2020; Stallings, 2022; Fancourt & Finn, 2019; Pennisi et al., 2021) underscore that children with ASD frequently demonstrate strong preferences for artistic, musical, or creative activities, suggesting that art therapy may capitalize on existing strengths and intrinsic motivation. Such preferences have been associated with increased participation, sustained attention, and reduced avoidance behaviors during therapy. For non-verbal autistic children, visual arts or music have offered alternative communication systems (Furniss, 2008; Ockelford, 2012).

### 2.3. Creative Arts Therapy Modalities

Creative arts therapies include multiple modalities:

- Visual arts therapy (drawing, painting, collage, sculpting)
- Music therapy (rhythm, melody, improvisation, structured listening)
- Drama therapy and theatre-based interventions (role-play, sensory environments, narrative development)
- Dance/Movement therapy (movement-based expression, body awareness, rhythmic coordination)

Each modality has been applied to ASD with unique benefits. Visual arts are frequently used due to ease of implementation and adaptability. Music therapy is widely studied and particularly effective in supporting social–emotional and communicative outcomes. Drama and movement-based approaches support imaginative and embodied expression, areas often underdeveloped in ASD but shown to improve with structured practice. While these modalities differ, they share core features: non-verbal expression, multisensory engagement, symbolic processing, and relational interaction—all elements that align strongly with autism support frameworks.

### 2.4. Evidence for Visual Arts Therapy

Visual arts therapy is the most widely applied art therapy modality in ASD settings internationally. Studies reviewed describe a series of common outcomes:

#### (a) *Improvements in emotional expression and regulation*

Visual arts therapy enables children to express emotions that they cannot articulate verbally. Through drawing or painting, children externalize internal experiences, facilitating emotional processing and reducing anxiety ( Malchioldi, 2003; Rubin et al., 2001).

#### (b) *Enhancement of communication and social interaction*

Structured art sessions promote joint attention, sharing of materials, turn-taking, and collaborative creation. Case studies demonstrate that even minimally verbal children engage more readily during art-making than in purely verbal sessions.

#### (c) *Sensory regulation*

Controlled exposure to tactile materials such as clay, textured papers, or wet media supports sensory modulation and reduces aversive responses. Children gradually increase tolerance for sensory stimuli and develop more flexible patterns of engagement (Gilroy, 2006).

#### (d) *Cognitive and symbolic development*

Many children with ASD show significant improvement in symbolic thinking and imaginative capacity through artistic narratives, illustrating cognitive gains in flexibility, sequencing, and representational skills. Visual arts therapy is also adaptable to educational settings, making it a practical complement to special education programs.

### 2.5. Evidence for Music Therapy

Music therapy is one of the most empirically supported creative arts therapies for ASD. International studies describe the following core benefits:

- Enhanced social engagement through shared musical activities, call-and-response sequences, turn-taking, and group rhythm exercises.
- Improved communication, including increased vocalization, prosody, imitation, and spontaneous verbal attempts.
- Emotional regulation, as rhythmic repetition and melodic patterns support calming, predictability, and arousal modulation.

- Attention and executive functioning gains, as musical routines reinforce sequencing, memory, and sustained attention.

Children with ASD frequently demonstrate heightened responsiveness to musical cues (Gebauer et al., 2014), making music therapy an effective entry point for developing interpersonal communication and emotional awareness (Geretsegger et al., 2014).

## **2.6. Drama Therapy and Theatre-Based Interventions**

Drama therapy and sensory-rich theatre programs such as those described in recent literature involve role-play, narrative exploration, social imagination, and embodied communication. Drama therapy is a form of psychotherapy, which concerns “the intentional use of drama/theater processes to achieve psychological growth and change (Bololia et al., 2021) These interventions address core ASD characteristics:

- improved perspective-taking
- stronger narrative and imaginative skills
- increased emotional recognition
- enhanced group participation
- reduced anxiety in social contexts

The immersive nature of theatre experiences provides a structured environment in which children can safely explore emotions and social roles.

## **2.7. Dance/Movement Therapy**

Dance/movement therapy (DMT) supports the development of body awareness, motor coordination, and emotional expression through movement. Dance and Movement Psychotherapy (DMP) is a relational process in which clients and therapist use body movement and dance as a means of communication during the therapeutic process. DMP is an empathetic creative process practiced individually or in groups in clinical, community and educational settings, as well as in private practice, with the aim of helping clients express hidden emotions, encourage new behaviors, release anxiety and contribute to the integration of body, mind and spirit (Payne, 2006). Dance therapy is action-oriented, spontaneous, creative, and works with the mind, body, and spirit (Serlin, 2007). Dance therapy and ASD: A two-year study of the effects of dance therapy on social deficits in patients with ASD showed improvement in social skills (Hildebrandt et al., 2016). Another intervention used creative circle dance and the results showed improvement in social awareness. Empirical research has shown that dance therapy methods contribute to physical development and interpersonal communication (Ren et al., 2022)

The findings highlight:

- improved gross motor coordination
- increased rhythmic synchronization
- development of nonverbal communication
- reduction in self-stimulatory behaviors
- strengthening of social engagement through mirroring and group activities

Because many autistic children experience dyspraxia or motor planning difficulties, DMT offers embodied pathways to self-regulation and interpersonal connection.

## **2.8. Accessibility, Inclusion, and Cultural Participation**

The literature also addresses the importance of making cultural and artistic environments accessible to autistic individuals (Kanari et al., 2021; Lenakakis, & Kanari, 2023

). Museums, cultural centers, and community arts programs increasingly adopt sensory-friendly practices, structured visits, and inclusive design to support participation (Reich, Price, Rubin, & Steiner, 2010). Participation in cultural and artistic activities benefits both autistic children and their families—improving socialization, autonomy, and community engagement (Little, Sideris, Ausderau, & Baranek, 2014; Orsmond, Krauss, & Seltzer, 2004) —yet access remains uneven globally due to limited staff training and insufficient institutional support (Linton, 2006; Poria, Reichel, & Brandt, 2009; Reich et al., 2011).

## **2.9. Limitations in the Existing Research**

The international literature consistently notes several methodological limitations like small sample sizes in most clinical and educational art therapy studies, heterogeneity in diagnostic profiles, therapy duration, and intervention structures, lack of standardized protocols, making cross-study comparison difficult, limited longitudinal research, restricting understanding of long-term outcomes, inconsistent use of assessment tools, often combining qualitative and informal measures, unequal global access to trained art therapists, particularly in school settings. These limitations underscore the need for more rigorous, larger-scale, and standardized research to establish stronger empirical foundations for art therapy in ASD.

## **3. Methodology**

### **3.1. Research Design**

This study employed a systematic narrative literature review to examine international applications, outcomes, and methodological challenges of art therapy interventions for children and adolescents diagnosed with Autism Spectrum Disorder (ASD). The design was selected to synthesize heterogeneous empirical and theoretical contributions published within the last decade and to map trends across diverse art therapy modalities. The aim of the study was to integrate findings across multiple research traditions, including quantitative, qualitative, mixed-methods, case studies, and systematic reviews.

### **3.2. Research Aim and Questions**

The primary aim was to investigate how art therapy is applied internationally to support children and adolescents with ASD, focusing on:

1. Types of art therapy modalities used globally (visual arts, music therapy, drama therapy, dance/movement therapy).
2. Reported outcomes related to social, emotional, communication, sensory, and motor domains.
3. Methodological challenges and gaps in the existing literature.

### **3.3. Data Sources and Search Strategy**

The literature search followed a structured strategy. Academic databases reviewed included Google Scholar, Science Direct, ResearchGate, Taylor & Francis Online and PubMed. The chronological range spanned January 2014 to September 2025, capturing contemporary developments in art therapy practices internationally. Keywords used in combination included: “art therapy,” “creative arts therapies,” “visual arts,” “music therapy,” “dance/movement therapy,” “drama therapy,” “autism spectrum disorder,” “ASD,” “children,” “adolescents.” Searches were conducted in English. Only peer-reviewed literature was included.

### 3.4. Inclusion and Exclusion Criteria

#### (e) *Inclusion criteria*

Studies were included if they met all the following:

- Published between 2014–2025.
- Written in English.
- Involved children or adolescents under 19 years old diagnosed with ASD, including cases with co-occurring developmental, emotional, or learning difficulties.
- Represented one of the following research types:
  - empirical quantitative studies
  - qualitative studies
  - mixed-methods research
  - case studies
  - systematic reviews
  - theoretical or conceptual articles
- Investigated any form of art therapy or creative arts interventions (visual arts, music therapy, drama therapy, dance/movement therapy).
- Reported on outcomes related to communication, socialization, emotional expression, sensory integration, motor development, or well-being.

#### (f) *Exclusion criteria*

Studies were excluded if they:

- Focused exclusively on adult ASD populations.
- Did not include an art-based therapeutic component.
- Were dissertations, book reviews, conference abstracts without full papers, or lacked methodological transparency.
- Focused on robotics or technology-assisted art therapy.

### 3.5. Study Selection Process

The selection process occurred in three stages, following standard systematic review protocols:

#### (g) *Stage 1: Initial Screening*

Titles and abstracts were screened for relevance. Non-empirical or non-art-therapy-focused articles were removed.

#### (h) *Stage 2: Full-Text Review*

Eligible full texts were reviewed by examining methodological rigor, sample characteristics, intervention format, and reported outcomes.

#### (i) *Stage 3: Data Extraction*

Extracted data included:

- publication year
- country
- participant characteristics
- type of creative arts modality
- intervention duration and structure
- assessment tools (where applicable)
- social, emotional, communication, sensory, cognitive, or motor outcomes

The studies covered a wide geographical distribution, including Europe, North America, Asia, Australia, and South America — reflecting a multinational scope.

### **3.6. Characteristics of Included Studies**

The included literature reflects considerable heterogeneity. Art forms varied: 13 visual arts studies ( Gazeas, 2015; Round, Baker & Rayner, 2017; D' Amico & Lalonde, 2017; Durrani, 2020; Koo & Thomas, 2019; Moghaddam, Ravarian & Ershadi, 2019, Sampurno, Prabandari & Marianto, 2020; Sabet & Abadi, 2021; Kuzenko, Kuzenko, & Matsuk, 2021; Bernier et al., 2022; Vogel, Leigh Mullins & Kumar, 2024; Lopez-Escribano & Orio-Aparicio, 2024; Martinez-Verez, Gilruiz & Dominguez-Lloria, 2024), 7 dance/movement studies ( Martin, 2014; Teixeira-Machado, 2015; Aithal et al., 2021; Broupi et al., 2023; Suzuki, Lee & Rudovic, 2017; Mukherjee et al., 2023; Cortes-Vaszquez & Ballesteros- Moscosio, 2024), 8 drama therapy interventions ( Sunay Yildirim Dogru, 2015; Naniwadekar, Ravi & Sreevidya, 2016; So et al., 2019; Bololia et al., 2022; Marti-Vilar et al., 2023; Stratou et al., 2023; Kechen, Cheang & Zaina, 2024; Lopez-Escribano & Orio-Aparicio, 2024), and 6 music therapy studies ( Beer, Boren & Liles, 2016; A Blythe La Gasse, 2017; Rickson, 2021; Blauth & Oldfield, 2022; Petr, Spreen & van Yperen, 2022; Shiyu Xiao, 2025). Sample diversity existed in age, ASD severity, co-occurring conditions, and cultural context. Intervention formats ranged from individual to group sessions, school-based to clinical settings, and structured programs to open studio approaches. Outcome measures included standardized assessments, behavioral observations, therapist logs, parental reports, and qualitative interviews.

Despite methodological diversity, all included studies reported improvements in social, emotional, communication, or motor domains.

### **3.7. Data Synthesis Approach**

Given the heterogeneity of designs, populations, and assessment tools, a narrative thematic synthesis approach was adopted. This method allowed grouping studies by therapeutic modality, identifying consistent outcome patterns, mapping methodological challenges across contexts, comparing cross-disciplinary and cross-cultural applications.

The approach aligns with previous scoping and integrative reviews (e.g., Bernier et al., 2022; Bololia et al., 2022; Vogel et al., 2024)

### **3.8. Ethical Considerations**

As a literature-based study, the review did not require ethical approval. All included studies were assumed to adhere to ethical guidelines governing research with human participants, as reflected in their publication in peer-reviewed journals.

## **4. Results**

This section synthesizes findings across the 34 studies included, structured in accordance with the four core developmental domains: (1) emotional expression and regulation, (2) social communication and interaction, (3) cognitive and imaginative functioning, and (4) sensory and motor development. A final subsection addresses general behavioral and well-being outcomes, reflecting the integrative nature of art therapy interventions. The overall pattern of results indicates that all included studies reported positive developmental or emotional outcomes, despite significant heterogeneity across modalities, sample characteristics, and methodological designs.

### **4.1. Emotional Expression and Regulation**

Art therapy consistently supported improvements in emotional recognition, communication of affect, and self-regulation ( Marti-Vilar et al., 2023; Stratou et al, 2023;

Shiye Xiao,2025; D’Amico & Lalonde,2017; Aithal et al., 2021; Blauth and Oldfield, 2022; Rickson,2021), as reported across visual arts, music therapy, drama therapy, and dance/movement interventions.

**(j) Enhanced emotional expression**

Studies described children demonstrating greater willingness to express emotions symbolically through drawing, color choice, gesture, or movement ( Marti-Vilar et al,2023; Stratou et al, 2023; Shiye Xiao,2025; D’Amico & Lalonde,2017; Aithal et al., 2021; Blauth and Oldfield, 2022). These findings align with established theories that art-making facilitates the externalization of internal states.

**(k) Reduction in anxiety and distress**

Multiple interventions involving rhythmic sensory input—such as painting, clay manipulation, or structured movement—led to observable decreases in anxiety, agitation, and emotional deregulation. Sessions incorporating music or repetitive sensory elements were particularly effective.

**(l) Improved emotional awareness**

Children exhibited increased ability to identify and differentiate emotional states, reflected in therapist observations and narrative case reports. Across all modalities, art therapy offered a safe, contained environment in which children could explore intense emotions indirectly through imagery or embodied expression, supporting overall affective development.

#### **4.2. Social Communication and Interaction**

Social interaction emerged as one of the most consistently improved areas across studies (Martin, 2014; Aithal et al., 2021; Broupi et al., 2023; Mukherjee et al., 2023; Pater, La Gasse, 2017; Spreen, & van Yperen, 2022; Naniwadekar, Ravi & Sreevidya, 2016; Bololia et al., 2022; Marti-Vilar et al., 2023; Stratou et al., 2023)

**(m) Increased joint attention and shared engagement**

Group-based visual art sessions, rhythmic movement exercises, and music improvisation facilitated sustained eye contact, turn-taking, and joint attention, all of which showed measurable improvement. These positive changes were most pronounced in structured group contexts that invited cooperative art-making (Gazeas,2015; Round, Baker & Rayner, 2017; Moghaddam, Ravarian & Ershadi, 2019).

**(n) Communication gains in verbal and non-verbal forms**

Children showed increased initiation of interaction, expanded use of gestures, and in some cases improved verbal output. Music therapy and drama therapy studies demonstrated especially strong effects on communication, consistent with prior findings in the field (Kechen, Cheang & Zaina, 2024; Lopez-Escribano, Orio-Aparico, 2024) .

**(o) Strengthened relational bonds**

Both individual and group art therapy sessions enhanced the therapeutic alliance and improved peer interaction. In theatre-based interventions, sensory-friendly performance structures fostered cooperative storytelling and reciprocal communication (Sunay Yildirim Dogru, 2015; So et al., 2019). The findings document that art therapy consistently strengthens communication, social reciprocity, and relational engagement in autistic children.

#### **4.3. Cognitive and Imaginative Functioning**

Cognitive and symbolic development improved across multiple modalities.

**(p) *Enhanced symbolic thinking and imagination***

Studies documented children creating more complex drawings, narratives, and characters over the course of interventions. Theatre-based programs, in particular, produced gains in symbolic play and imaginative flexibility (Kechen, Cheang & Zaina, 2024).

**(q) *Improvements in attention, sequencing, and executive functioning***

Repeated engagement in creative processes supported memory, sustained attention, and organizational skills. Structured music therapy sessions helped children develop rhythm-based sequencing and planning abilities (Beer, Boren & Liles, 2016; Martinez-Verez, Gil-Ruiz & Dominguez-Lloria, 2024).

**(r) *Problem-solving and creative reasoning***

Visual arts and movement-based activities encouraged experimentation, risk-taking, and creative problem-solving-skills often difficult for children with ASD due to rigidity and resistance to change (Alter-Muri, 2017; Bernier et al., 2022). The results support that creativity can serve as a developmental scaffold for children with ASD, countering stereotypes about limited imaginative capacities.

#### **4.4. Sensory and Motor Development**

Given that sensory processing differences are central to ASD, findings in this domain were particularly significant.

**(s) *Improved tactile tolerance and sensory modulation***

Gradual exposure to varied textures (e.g., clay, finger paint, collage materials) increased sensory flexibility and reduced aversive responses. Dance/movement and drama therapy also contributed to improved regulation of arousal (Round, Baker & Rayner, 2017).

**(t) *Enhanced psychomotor coordination***

Fine motor skills improved through repeated visual arts tasks, while gross motor coordination benefited from structured movement, rhythm exercises, and body-awareness practices (Teixera-Machado, 2015; Martin, 2014).

**(u) *Better sensory integration***

Children demonstrated greater ability to organize sensory input across visual, auditory, and proprioceptive channels. Music therapy, in particular, facilitated cross-modal integration through coordinated sound-movement activities (Rickson, 2021). Sensory and motor development consistently improves across international studies, regardless of modality or therapeutic setting.

#### **4.5. General Behavioral and Well-Being Outcomes**

Beyond domain-specific gains, studies identified broader improvements in daily functioning and emotional well-being (Teixera-Machado, 2015).

**(v) *Reduced maladaptive behaviors***

Participants exhibited fewer episodes of self-stimulation, aggression, or withdrawal in both school and home environments following art therapy interventions (Aithal et al., 2021).

**(w) *Increased independence and adaptive functioning***

Children showed better task completion, increased initiative, and improved ability to transition between activities (Marti-Vilar et al, 2023)

***Greater motivation and engagement***

Art therapy modalities were frequently described as “highly motivating,” with children demonstrating enthusiasm, persistence, and enjoyment—factors that enhance therapeutic impact.

**(x) Positive effects on family well-being**

Parents reported improved communication with their children, decreased stress, and increased emotional connection following regular participation in art therapy programs (Yang, 2016).

**4.6. Cross-Modality Comparison**

Although all modalities produced benefits, trends emerged:

- Visual arts therapy most consistently improved symbolic expression, emotional regulation, and fine motor skills (Round et al., 2017)
- Music therapy showed strongest effects in communication and social engagement (Pater et al., 2022).
- Drama/theatre interventions enhanced imagination, emotional recognition, and peer interaction.
- Dance/movement therapy produced superior gains in body awareness, rhythmic coordination, and sensory-motor integration.

Despite these distinctions all reviewed interventions produced positive developmental outcomes, with no studies reporting negative effects.

**4.7. Difficulties in implementation**

All research emphasizes the need for individualized therapeutic interventions to address the specific needs, preferences, and interests of children with ASD. This results in the lack of a therapeutic protocol, evidence that is based on practice and that someone can follow. The lack of evidence is also due to the fact that, on the one hand, art therapists possess and use tacit knowledge to connect with the client that also depends on their character, which is difficult to measure quantitatively, and on the other hand, we have the heterogeneity of children with ASD. The decision that the therapist must make about which form of art therapy will have the best results for the specific client is also difficult. It has been reported that children with ASD have problems when using visual materials due to sensory hypersensitivity. There is no specific methodology, specific steps that are followed in therapy. The many different intervention settings and the wide variation in treatment conditions can lead to behavioral changes in children with ASD and hinder the measurement of treatment effectiveness. According to Aithal et al., 2021 while the systematic review suggests that dance and movement therapy has the potential to improve the well-being of children with ASD, the evidence for its effectiveness remains unclear due to the small number of studies. Other difficulties observed are the extensive variability in methodology, limited and inconsistent use of valid, standardized assessment tools, and the number and diagnostic range of participants. The evidence base for effectiveness is often heterogeneous due to a lack of standardization of intervention parameters and outcome measures. This requires future methodologically sound research (Vogel et al., 2024) Other difficulties according to Marti-Vilar et al., 2023 that are observed are the diversity in intervention sessions, the lack of determination of the degree of ASD of the participants, and the notable differences in the intensity of the therapy that make it difficult to generalize the results. For the reliability of the results, the use of multiple measurement tools and the involvement of multiple evaluators (parents, teachers, therapists, and the subjects of the therapy) is recommended. It is important to take into account the cultural context, which differs from country to country and certainly influences the application of art therapy in its own way.

## 5. Discussion

The findings of the 34 reviews demonstrate that art therapy constitutes a valuable, multidimensional intervention for children and adolescents with Autism Spectrum Disorder (ASD). Art therapy's capacity to address social, emotional, cognitive, and sensory domains reflects its unique alignment with the developmental profiles, communication styles, and regulatory needs characteristic of ASD. The discussion elaborates on (1) mechanisms underlying therapeutic change, (2) cross-modality contributions, (3) implications for interdisciplinary practice, and (4) methodological challenges limiting the evidence base.

### 5.1. Mechanisms Underlying Therapeutic Change

The reviewed evidence suggests that art therapy supports developmental and emotional growth in ASD through several interconnected mechanisms. Non-verbal and alternative communication pathways: Art-making provides a symbolic and sensory-based medium through which children—particularly those with limited expressive language—can communicate thoughts, emotions, and experiences indirectly (Xiao, 2025). By externalizing internal states through imagery or movement, children gain psychological distance that reduces anxiety and facilitates expression. This mechanism is repeatedly identified in visual arts, music, drama, and movement studies, all of which create opportunities for expression without relying on linguistic fluency (Malchioldi, 2003; Geretsegger et al., 2014)

Multisensory engagement and sensory regulation: Art therapy naturally incorporates tactile, visual and auditory elements that support sensory integration, a core challenge for many autistic children. Rhythmic activities in movement or music therapy contribute to arousal regulation, while graded exposure to textures in visual arts reduces sensory defensiveness (Aithal et al., 2021; Rickson, 2021; Round et al., 2017; Durrani, 2020). These sensory processes underpin improvements in emotional regulation, social readiness, and adaptive behavior. Predictable structure paired with creative freedom: Art therapy sessions often combine consistent routines with flexible creative exploration (Ke et al., 2022). This balance supports the need for predictability—an important factor for children with ASD—while encouraging imaginative risk-taking, autonomy, and adaptability. Children demonstrate greater persistence, attention, and motivation when familiar structures scaffold their creative efforts. Strength-based engagement and intrinsic motivation: The reviewed studies highlight that many autistic children exhibit strong interest in artistic activities, whether visual, musical, or movement-based. Art therapy capitalizes on these strengths, transforming intrinsic motivation into meaningful therapeutic engagement. This strength-based orientation fosters self-esteem, action, and positive identity development, countering deficit-oriented narratives about autism (Furniss, 2008).

### 5.2. Contributions Across Creative Arts Modalities

While all art therapy modalities produced positive outcomes, each contributed distinct developmental benefits.

*Visual arts therapy:* Visual arts interventions were particularly effective in fostering emotional expression, fine motor development, symbolic thinking, and sensory modulation. The tangible, controllable nature of art materials may provide a stabilizing medium that reduces anxiety and allows focused engagement.

*Music therapy:* Music therapy emerged as especially powerful for communication and social interaction. Rhythmic synchrony, musical improvisation, and shared musical structures

promote joint attention, reciprocity, and non-verbal communication. These findings align with the documented strong responsiveness of autistic individuals to musical stimuli.

*Drama therapy and theatre-based interventions:* Drama therapy supported imaginative development, emotional recognition, and perspective-taking—domains often considered challenging in ASD. Sensory-adapted theatre environments allowed children to explore social roles safely, demonstrating increased narrative engagement and cooperative interaction.

*Dance/movement therapy:* Movement-based interventions produced robust improvements in motor coordination, body awareness, and rhythm regulation. These embodied processes also enhanced social attunement through mirroring, group movement, and kinaesthetic empathy. These modality-specific strengths underscore the value of interdisciplinary and individualized approaches to art therapy in ASD.

### **5.3. Implications for Interdisciplinary Practice**

The findings highlight the potential for art therapy to serve as an integral component within multidisciplinary systems of support, including clinical, educational, and community contexts.

(y) *Educational settings:* Art therapy aligns closely with inclusive education frameworks. Its non-verbal, creative, and flexible nature supports learners with diverse developmental profiles, reduces performance anxiety, and promotes peer interaction (Deighton et al., 2018; McDonald & Drey, 2018). Schools may incorporate art therapy into individualized education plans (IEPs) (Siegel, 2016), early intervention programs, or inclusive classroom practices to enhance engagement and communication (Deboys et al., 2017).

(z) *Clinical and therapeutic contexts:* Art therapy can complement evidence-based interventions such as speech therapy, occupational therapy, and behavioral programs. Its sensory and emotional benefits are particularly relevant for children with co-occurring anxiety, emotional dysregulation, or sensory processing challenges.

(aa) *Community and cultural inclusion:* The literature also underscores the role of cultural institutions—museums, theatre organizations, community arts centers—in promoting social participation among autistic children (Lurio, 2016). Sensory-friendly programming and inclusive design broaden access to arts experiences, supporting social integration and family well-being (Leinhardt, Crowley, & Knutson, 2002; Hooper-Greenhill & Moussouri, 2002). Collectively, these interdisciplinary implementations position art therapy not merely as an adjunct intervention, but as a core developmental and expressive modality within diverse ecosystems of child support.

### **5.4. Methodological Challenges and Research Gaps**

Despite promising outcomes, the evidence base is constrained by several methodological limitations, many of which are explicitly acknowledged in the reviewed literature. Limited sample sizes: Most studies reviewed involved small numbers of participants, reducing statistical power and limiting generalizability.

*Heterogeneity of interventions:* Art therapy protocols varied widely in duration, frequency, materials, and therapeutic orientation, making cross-study comparisons difficult. This diversity reflects the adaptable nature of art therapy but complicates the establishment of standardized frameworks. Inconsistent assessment tools: Studies used a wide range of formal and informal measurement instruments, including behavioral observations, therapist reports, parent interviews, and standardized assessments. The lack of unified tools restricts the ability to synthesize findings quantitatively.

*Limited longitudinal research:* Few studies included follow-up assessments. As a result, the durability of intervention effects over time remains uncertain.

(bb) *Limited access and training disparities:* Global inequalities in the availability of trained art therapists—particularly within school systems—affect implementation consistency and limit opportunities for large-scale studies.

(cc) *Overrepresentation of certain modalities:* Visual arts and music therapy were more frequently represented, while drama and movement therapies appeared less often, indicating a need for more diversified research.

Overall, while the evidence clearly indicates positive developmental and therapeutic effects, the methodological landscape demands stronger rigor to establish art therapy as an empirically robust intervention for ASD.

### 5.5. Synthesis

Taken together, the results and literature demonstrate that art therapy offers a uniquely holistic, accessible, and developmentally attuned intervention for children with ASD. Its benefits extend beyond isolated skills, fostering integrated improvements in emotional, social, cognitive, and sensory–motor functioning. At the same time, current research requires methodological strengthening to translate promising findings into standardized, widely accessible practice frameworks.

### 6. Conclusions

This systematic narrative review demonstrates that art therapy constitutes a powerful and developmentally appropriate intervention for children and adolescents with Autism Spectrum Disorder (ASD). Across diverse international contexts, all reviewed studies—regardless of modality, setting, or design—reported meaningful improvements in emotional expression, social communication, sensory and motor functioning, imaginative development, and overall well-being. The findings confirm that art therapy leverages the strengths of autistic children—such as visual thinking, responsiveness to rhythm, sensory engagement, and creativity—while providing structured, supportive environments that reduce anxiety and enhance self-regulation. Through non-verbal communication, symbolic expression, multisensory integration, and relational attunement, art therapy offers children channels of expression and connection that are often inaccessible through purely verbal or behavioral interventions. Dance therapy contributes to the improvement of motor skills, but our findings show that research is still in its early stages. Drama therapy seems to be suitable for older children who can benefit more from its structured expressive framework. While, art therapy is suitable for school-age children. Dance therapy, music therapy and art therapy are an effective early intervention tool mainly for non-verbal children with ASD as they help them express themselves in other ways. However, music therapy can cause overstimulation in some children with ASD and to be effective it must follow the musical interests of the child. It is understandable that more research needs to be done in schools. Music therapists are the only ones who have described and conducted research on sessions that are implemented mainly at home with the aim of involving the family, making children with ASD feel more comfortable since they will be in their own environment, and generalizing the desired results to other environments. Despite heterogeneity across studies, the overall consistency of positive outcomes highlights art therapy as a valuable component of interdisciplinary ASD support frameworks. Strengthening methodological rigor and expanding access to trained practitioners will be essential to advancing this field. The international evidence reviewed here reinforces

the view that art therapy is not supplemental, but rather central to inclusive, humane, and developmentally grounded approaches to autism support.

### **7. Limitations**

This review is subject to several limitations, many of which reflect challenges inherent in the broader body of literature: First, the heterogeneity of study designs and protocols. The included studies varied substantially in methodology, intervention duration, intensity and frequency of intervention, sample size, age range of the participants, evaluation tools, therapeutic orientation and inconsistent or unclear diagnostic criteria, limiting opportunities for direct comparison. Second, the limited sample sizes. Many studies involved small cohorts, case studies, or single-case designs, restricting generalization.

*The inconsistent measurement tools:* There was variability in assessment methods—ranging from standardized instruments to informal behavioral observations— which complicated synthesis.

*Language and database restrictions:* Only English-language, peer-reviewed studies were included; relevant literature in other languages may have been omitted.

*Lack of long-term follow-up:* Few studies assessed the durability of gains after program completion.

Finally, technological/robotic arts interventions were excluded. Studies involving robotics or digital technologies were excluded; thus, emerging hybrid modalities are not represented.

These limitations underscore the need for more rigorous, replicable, and large-scale research to further substantiate the effectiveness of art therapy in ASD.

### **8. Practical Implications**

The findings of this review carry significant implications for practitioners, educators, policymakers, and cultural institutions. The positive results of art therapy interventions in the social, communicative and emotional areas lead us to think that schools should integrate art therapy as part of individualized education programs (IEPs) and early intervention plans. Art-based approaches offer inclusive opportunities for communication, sensory regulation, and social participation in mainstream and special education settings. Training teachers to collaborate with art therapists can enhance inclusive classroom environments. In addition, the joint participation of neurotypical and neurodiverse children in art, music therapy or dance therapy or drama therapy programs can contribute to the meaningful inclusion of neurodiverse children and offer a lot to neurotypicals as well. Art therapy should also be incorporated into multidisciplinary treatment frameworks alongside occupational therapy, speech therapy, and behavioral interventions. Clinicians should consider sensory-friendly, structured, yet flexible art environments to support emotional and regulatory needs. Moreover, museums, theatres, and community arts centers should continue expanding sensory-friendly, accessible programming for people with ASD. Investment in public arts programs can promote social inclusion, family well-being, and community engagement for autistic children. Last but not least, funding bodies should prioritize large-scale, longitudinal, and cross-cultural studies in art therapy for ASD. Policymakers should support training programs that increase access to certified art therapists within educational and clinical systems. The interest is intense, but appropriate training is also needed for teachers, parents, occupational therapists, speech therapists, psychologists and in general the specialists and people responsible for the education of children with ASD. It is necessary to disseminate the knowledge that art therapy can contribute to the development of

social, emotional and communication skills and generally improve the daily lives of not only children but also the people who support them. Overall, the international literature strongly supports the integration of art therapy into child mental health, inclusive education, and cultural accessibility policies.

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