

## Art therapy with children with Autism Spectrum Disorders: A review of clinical case descriptions on ‘what works’



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### ARTICLE INFO

#### Article history:

Available online 23 October 2014

#### Keywords:

Art therapy  
Autism Spectrum Disorder  
Children  
Review

### ABSTRACT

Well-ordered empirical information on ‘what works’ in art therapy with children diagnosed with Autism Spectrum Disorders (ASD) hardly exists. For that reason a systematic review was undertaken covering the period 1985–2012. Our study explored academic and practice-based sources with the aim to identify core elements of art therapy for normal/high intelligent target group children up to 18 years. Eighteen descriptive case-studies were found and analyzed according to the Context Outcomes Art Therapy (COAT) model. The results indicate that art therapy may add to a more flexible and relaxed attitude, a better self-image, and improved communicative and learning skills in children with ASD. Art therapy might be able to contribute in mitigating two main problem areas: social communicative problems, and restricted and repetitive behavior patterns. Typical art therapeutic elements such as sensory experiences with sight and touch may improve social behavior, flexibility and attention-abilities of autistic children. Considering the limited evidence that was found, primarily existing of elaborated clinical case descriptions, further empirical research into the process and outcomes of art therapy with ASD children is strongly recommended.

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### Introduction

In a survey among 541 members of the American Art Therapy Association (AATA) nearly 10% of the respondents considered themselves specialized in autism (Elkins & Deaver, 2010). Although exact numbers are lacking in the Netherlands children with Autism Spectrum Disorder (ASD) are often referred to art therapy (Teeuw, 2011). There is some evidence that art therapy applied to ASD diagnosed children in special education, contributes to a positive change in their social behavior and their focus of attention (Pioch, 2010). However, the study of Pioch does not give insight into typical elements of art therapy – like, for instance, touching and handling art materials or looking and evaluating the development of the visual artwork – that might explain these changes. Gilroy (2006) suggests in general terms that art therapy with autistic children might be effective in long term treatment in groups or individually, because the process of art making stimulates cognitive and

emotional development, enables relationships, and leads to a decrease of destructive behavior. Gilroy based her suggestion on a number of publications about art therapy with autistic children. In a qualitative study based on experiences of Dutch art therapists with ASD children, the therapists described the effects of art therapy on those children as being able to develop their competencies to direct attention, to improve flexibility, to behave in a more structured way, and to verbally express their experiences (Schweizer, 2014). Moreover, there seems to be a transfer of these developments to the home situation and the classroom (Pioch, 2010; Schweizer, 2014). This suggests that art therapy might play a role in the treatment of children diagnosed with ASD.

The new classification scheme of the DSM-5 (APA, 2013) does not classify anymore the ASD-subtypes Pervasive Developmental Disorder, not otherwise specified (PDDnos) and Asperger like the DSM IV did (APA, 2000). This implies that all the subtypes mentioned in this review, are indicated as ‘ASD’. Another subtype, not mentioned in DSM-5, is High Functioning Autism (HFA). The distinction is based on subtle differences in neuropsychological functioning but the children show comparative behavior (Buma & Van der Gaag, 1996; Klin, Volkmar, Sparrow, Cicchetti, & Rourke, 1995). This review focuses at children diagnosed with ASD implying restricted possibilities in social communication, and repetitive

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and obsessive behaviors. Those children have special ways of information processing (APA, 2013; De Bildt et al., 2010).

For children in general it is in accordance with their age and it is also a safe and natural way to express themselves through drawing as a way to cope with the world around them. Children move their fingers in sand or in porridge as soon as they realize that their movements leave traces (Kellog, 1970; Rutten-Saris, 2002). Several studies describe the positive value on children of making drawings, making things and playing to better cope with their problems (Kramer, 1971; Lowenfeld & Brittain, 1964; Meyerowitz-Katz, 2003; Waller, 2006).

Art therapy is based on experiences and theories assuming that the creative process involved in artistic self-expression supports people to handle their problems. As a consequence the most often described aims of art therapy are: increasing self-esteem and self-awareness, developing coping skills, supporting bereavement and acceptance, achieving insight, structuring behavior, reducing stress, and developing interpersonal skills (American Art Therapy Association, 2014; Case & Dalley, 1992; Malchiodi, 2003; Schweizer et al., 2009). Art therapy is an *experiential therapy* that provides a variety of sensory stimulation in a safe organized environment by offering art materials and techniques (such as paint, crayons, clay, wood, textile, etc.). The art therapist invites the client to experience and express him or herself during the process of creating art. The art shaping stimulates development of ideas, motor skills, task orientation, cause and effect links, spatial insight, shape recognition, the experience of yourself in the space around, and the development of eye contact (Gilroy, 2006; Haeyen, 2011; Hinz, 2009; Malchiodi, 2003). These tactile and visual experiences are supposed to stimulate change of behavior and integration of cognitive-, sensoric- and kinesthetic experiences and behaviors (Bergs-Lusebrink, 2013; Case & Dalley, 1990; Gilroy, 2006; Hinz, 2009; Malchiodi, 2003).

Children diagnosed with ASD show skills for detailed perception and drawing of objects, but they do have problems with drawing human expressions (Lee & Hobson, 2006; Selfe, 1983). One of the most well known treatments is TEACCH (Treatment and Education for Autistic Children and Children with Communicative Handicaps) (Schopler & Mesibov, 1995). This program uses images in a well structured way, to train communication skills. Ozonoff and Cathcart (1998) found significance about improvement of social and communication skills of young children diagnosed ASD after participating in TEACCH.

This implies that art therapy offers opportunities to support and treat children with ASD, because the attention of the child is directed to art making while the art therapist is attuning to the art shaping process of the child. For children with problems in communication, which strongly characterizes ASD diagnosed children, this might be an opportunity to develop new skills. After all, communication with the therapist through art is described as a safe opportunity to stimulate change (Schweizer, 2014). However, the evidence base for this line of thinking is still lacking.

Based on former work of the first author (Schweizer, 2014) a tentative framework has been designed to organize the main components of an art therapeutic intervention. This model is visualized in Fig. 1 and covers four areas of operation: (1) art therapeutic (AT) means and forms of expression; (2) therapists' behavior (including interactions with the client and handling of materials); (3) context (setting, reason for referral, duration of therapy, concurrent treatment); and (4) intended outcomes (including short- and long-term goals). The framework is named the *Context Outcomes Art Therapy (COAT) model*, suggesting the centrality of the 'art area' and the indispensability of the other three 'circles of influence'; without these layers one cannot speak of an *art therapeutic* intervention.

The purpose of this paper is to systematically review the scientific literature concerning the role art therapeutic elements and conditions play in the treatment of normal to high intelligent ASD

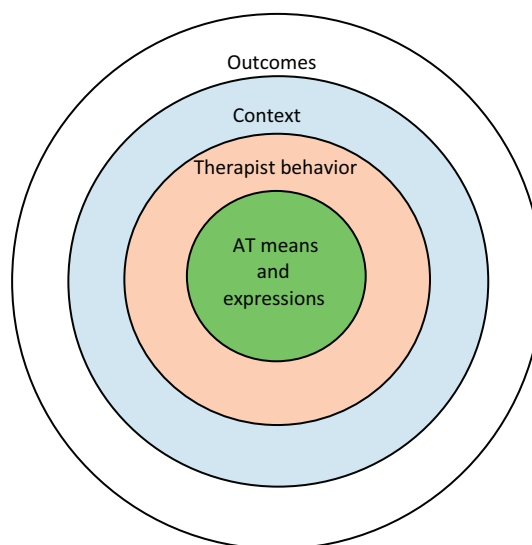


Fig. 1. Context Outcomes in Art Therapy (COAT) model.

diagnosed children. Based on this review the COAT-model will be further elaborated with the aim to construct a well-founded base for clinical and evaluative use in art therapy with ASD children. As a guideline in this review the following four research questions will be addressed.

1. What AT-means and forms of expression contribute to the treatment of children with ASD?
2. What specific art therapeutic behavior contributes to the treatment of children with ASD?
3. What AT contextual conditions contribute to the treatment of children with ASD?
4. What outcomes of AT as a treatment for children with ASD are being strived for and realized in the treatment setting and in daily life?

## Method

Several studies on the outcomes of usual treatments on adults as well as on children with ASD showed only thin evidence (CVZ, 2010; Schothorst et al., 2009). A study on the efficacy of art therapy, with all kind of children's and adults' problems (Slayton, D'Archer, & Kaplan, 2010), lacked data about art therapy with autistic children and adults. Despite these not very exciting results we decided to systematically disclose the literature for reasons of completeness by searching for studies using Randomized Controlled Trial (RCT) designs, quasi-experimental designs (no random control group), one group pre-test post-test designs (no control group), and practice-based change studies including case studies (with well-defined intervention protocols). As a final step also studies of practice examples of art therapy in journals, handbooks and theses were included in the search.

Electronic searches were performed for the period 1985–2012 including Dutch as well as English literature. The consulted databases were Cochrane, Medline, PubMed, PsychINFO, Picarta, Eric, Google, and the website of the AATA. In addition, the following journals were manually searched: *Tijdschrift Vaktherapie* (formerly: *Tijdschrift Creatieve Therapie*); *Wetenschappelijk Tijdschrift Autisme*; *International Journal of Art Therapy* (formerly: *Inscape*); *The Arts in Psychotherapy*; *American Journal of Art Therapy*. Finally, correspondence with two art therapy researchers was used. The following search terms were used, solely and in combination: art, art

**Table 1**  
Number of suitable studies found by search methods.

Search results	Unselected of electronic searches	Selected of electronic searches	Results of hand search
Art AND/OR art therapy AND/OR Autism Spectrum Disorder AND/OR Pervasive Development Disorder not otherwise specified	146	6	12
Art AND/OR art therapy AND/OR Autism Spectrum Disorder AND/OR Pervasive Development Disorder not otherwise specified AND effect OR outcome	0	0	0
Art therapy AND outcome OR effects	0	0	0

therapy, autism spectrum disorder, children, effect, outcome. Studies were included in which

- children up to 18 with normal and high intelligence with ASD were subject of research<sup>1</sup>;
- art therapeutic interventions with the aim to stimulate change in behavior and skills of children diagnosed with ASD;
- art as a means of expression was described in relation to a change in behavior or skills of children diagnosed with ASD.

Excluded from this review were interventions of music-, drama- and dance movement therapy because art therapy has the focus on art, and especially on the visual and tactile experiences of clients with ASD.

Each study was examined in line with the four main categories of the COAT-model: context, outcomes, therapeutic behavior and art therapeutic means and forms of expression. The more specific variables were mapped by qualitative content analysis (Krippendorff, 2004; Strauss & Corbin, 1990; Weber, 1990). These variables concern:

- Author, year of publication;
- Type of study design, including sample size;
- Context I (info on participants): gender, age, diagnosis;
- Context II: setting, duration of treatment, reasons for referral;
- Therapeutic behavior (like [non]verbal interventions, attitude, psycho-education) and background theory;
- Art means and expressions (like materials, shapes, themes, interaction during art making);
- Outcomes: treatment goals and realized outcomes.

## Results

The electronic search in databases, the 'hand search' in journals, reference lists, grey literature, and the correspondence with art therapy researchers, resulted into 18 relevant studies (see Table 2). Only six studies were included by the electronic search (Table 1). Most studies were found in reference lists and via personal contacts with other researchers. All studies were qualitative, mostly case descriptions in a theoretical framework of developmental psychology, art theory, and psychotherapy theory.

As expected we did not find any study involving an experimental or quasi-experimental design. Two one group studies were found: one qualitative inquiry of a summercamp with children diagnosed ADHD and ASD ( $n = 25$ ) with examples of art therapeutic interventions with one boy with ASD<sup>[10]</sup>; the other containing a qualitative

study of sandplay therapy with children diagnosed ASD – individually and in groups up to seven children (total  $n = 25$ ).<sup>[13]</sup> One grounded theory study upon practices from eight art therapists was included.<sup>[17]</sup> Furthermore, one case study, only describing treatment method and practice, was found.<sup>[12]</sup> Fifteen studies described practice examples in a theoretical frame, of which six described art therapy practice on a more general level.<sup>[8,9,14,15,17,18]</sup> The other nine publications showed details of art therapy treatments of in total 18 participating children diagnosed ASD.<sup>[1–7,11,16]</sup>

In the next part an overview of findings (Table 2) is given based on 18 case descriptions from 12 publications, respectively six general descriptions of art therapeutic interventions from six publications.

The results mirror a mixture of practice examples from 4 girls and 14 boys. The girls were between 8 and 18 years of age; one was diagnosed Asperger, the other three were mentally retarded. The boys were between 6 and 17 years; one of them was diagnosed PDDnos, four HFA/Asperger, nine ASD with normal intelligence, and one ASD with mental retardation. There was no information reported about verbal IQ and performal IQ.

During art therapy sometimes developments in diagnostic information appeared. One girl was firstly diagnosed with a social phobia and later as HFA/Asperger. One boy was firstly diagnosed with mental retardation and during art therapy appeared to show normal intelligence.

The relevant aspects of art therapy for children belonging to the target group are categorized in Fig. 2 according to the four clusters of the COAT-model. Per cluster the results will be described. To prevent too detailed information in the results, data found in only one or two studies will not be discussed.

### AT means and forms of expression

Children with ASD show a wide range of possibilities for expression, developmental levels, shapes, themes and interests. This cluster can be divided in four topics: experiences with art materials; shapes and themes; development of personal artwork; and verbal and non-verbal communication.

### Experiences with art materials

Most children are not explorative and flexible in the beginning of the art therapy treatment. During art therapy the child becomes more explorative, flexible and expressive.<sup>[1–18]</sup> Two types of preference for art materials appeared. Children aimed at symbolic expression, mostly use drawing materials such as crayon, paint and water, and (later in the therapy process) clay.<sup>[1,3,4,6,11,12]</sup> The other group works with all kinds of materials, offering varied tactile and kinesthetic experiences to evoke sensory awareness and expression.<sup>[2,3,5–9,13–17]</sup>

<sup>1</sup> Studies are also included when concerning art therapy with also non-verbal – and mentally retarded children diagnosed with ASD, combined in one study with ASD children with normal and high intelligence.

**Table 2**  
Overview of 18 studies on art therapy with children with Autism Spectrum Disorders.

Author, year	Type of study	Gender	Age	Diagnosis	Setting	Duration of treatment	Reasons for referral	Aims	Therapeutic behavior/theoretical background	Art means and expressions	Outcomes
1. Bragge and Fenner, 2009	Theoretical study (art therapy theory and a model to evaluate practice). Examples from two cases	M <sup>a</sup>	7.5	HFA <sup>a</sup>	School for special education Individual art therapy Melbourne, Australia	15 weeks, weekly sessions	Likely to benefit from art making as stimulation of developmental delay and expression Behavioral problems	Benefit from a visual approach and/or tactile stimulation Development of communication skills	Following the child Offering new sensory and symbolic experiences Verbal directions Communication in art / Art-psychotherapy, play therapy, early developmental psychology, client centered psychology	Stereotyped images Representative images Broadening interests by exploring drawing and painting materials: animals, landscape Sharing art experiences	Improved communication skills/social behavior Improved self-image Transfer is not described
		F <sup>a</sup>	12.5	ASD <sup>a</sup> non-verbal	School for Special Education Individual art therapy Melbourne, Australia	Unknown	Likely to benefit from art making as stimulation of developmental delay and expression Behavioral problems	Benefit from a visual approach and/or tactile stimulation Development of communication skills	Following the child Offering new sensory experiences Communication in art / Early developmental psychology, client centered psychology, art-psychotherapy	Scribbling Kinesthetic and sensory tactile play Sharing art experiences	Improved communication skills/social behavior Explored art materials Transfer is not described
2. Elkis-Abuhoff, 2008	Case example with short theoretical founding	F	18	Before AT <sup>a</sup> : social phobia After AT: Asperger	Private practice Individual art therapy USA	7 months; once a week	Ineffective other treatments Likely to benefit from art making as stimulation of developmental delay and expression Behavioral problems Affective problems Social-communicative problems	Benefit from a visual approach and/or tactile stimulation Development of communication skills Improvement of recreation skills	Following the child Directive and structuring approach Offering new sensory and symbolic experiences Sensory regulation Verbal directions / Early developmental psychology, art psychotherapy	Representative images Exploring a diversity of materials Tactile and playful experiences Themes from daily life, emotions Sharing art experiences Talking about the artwork is talking about her own functioning	Improved communication skills/social behavior Improved self-image Improved learning skills

Table 2 (Continued)

Author, year	Type of study	Gender	Age	Diagnosis	Setting	Duration of treatment	Reasons for referral	Aims	Therapeutic behavior/theoretical background	Art means and expressions	Outcomes
3. Emery, 2004	Case example in theoretical frame	M	6	ASD, normal intelligence	Setting unknown Individual art therapy California, USA	7 months; frequency unknown	The art therapist observed: Social-communicative problems Behavior problems	Aims unknown	Following the child Directive and structuring approach Offering new sensory and symbolic experiences Verbal directions / Early child developmental psychology, attachment/object constancy theory, client centered psychology	From kinesthetic and pre-representative experiences, to representative drawing of people and daily life, including talking about it Sharing art experiences Also drawing at home and better eye contact	Improved communication skills/social behavior Improved learning skills
4. Etherington, 2012	Chapter in a book about assessment in art therapy. Practice example	M	6	Asperger	Private practice Great Britain	Unknown	Social-communicative problems	Benefit from a visual approach and/or tactile stimulation Development of communication skills	Following the child Offering new sensory and symbolic experiences Sensory regulation	From pre representative and fragmented drawing and painting, to representative human figure Becoming more personal Shared experiences. Talking about the work	Improved communication skills/social behavior
5. Evans, 1998	Practice-oriented and theoretical research with examples from practice	M	6	ASD, verbal and non-verbal	School for autistic children Individual art therapy Great Britain	Treatment of 2 years; frequency unknown	Unknown	Benefit from a visual approach and/or tactile stimulation Development of communication skills Development of learning skills	Following the child Directive and structuring approach Following the child Offering new sensory and symbolic experiences Sensory regulation / Early developmental psychology (Stern, 1985)	From stereotype representative drawing to kinesthetic and sensory experiences with materials Becoming more personal Sharing art experiences	Improved communication skills/social behavior More flexible behavior Development of learning skills

Table 2 (Continued)

Author, year	Type of study	Gender	Age	Diagnosis	Setting	Duration of treatment	Reasons for referral	Aims	Therapeutic behavior/theoretical background	Art means and expressions	Outcomes
6. Evans and Dubovsky, 2001	Book about Art Therapy and children with diagnosis ASD; case examples in theoretical frame [i.e., early developmental psychology (Stern, 1985)]	F	8	ASD, non-verbal	School for children diagnosed ASD, working together with 'a multi-disciplinary staff' Great Britain	55 sessions; frequency unknown	Unknown	Benefit from a visual approach and/or tactile stimulation Development of communication skills	Following the child Offering new symbolic experiences Communication in art / Early developmental psychology (Stern, 1985)	Drawing, painting, pre-representative scribbles Sharing art experiences	Improved communication skills/social behavior No transfer of results mentioned
		M	9	ASD, verbal	School for children diagnosed ASD, working together with 'a multi-disciplinary staff' Great Britain	Unknown	Unknown	Benefit from a visual approach and/or tactile stimulation Development of communication skills Development of self-image Improvement of flexibility	Following the child Offering new symbolic experiences Verbal directions Communication in art / Early developmental psychology (Stern, 1985)	Representative drawing, painting animals, people Sharing art experiences Talking about the artwork	More attention, more playful, use more space in his paintings, more tolerance for new experiences Greater insight and understanding of his own autism Improved self-image Transfer of results is not mentioned
		M	7	ASD, non-verbal	Residential facility, working together with 'a multidisciplinary staff' Great Britain	2 years; frequency is not mentioned	Unknown	Benefit from a visual approach and/or tactile stimulation Development of communication skills Development of learning skills Improvement of flexibility	Following the child Offering new sensory and symbolic experiences Communication in art	Pre-representative scribbling Kinesthetic and sensory play in the space and with crayon, paper and water Sharing art experiences	Hardly any development Developed new play with water Great need of governing the situation No transfer mentioned

Table 2 (Continued)

Author, year	Type of study	Gender	Age	Diagnosis	Setting	Duration of treatment	Reasons for referral	Aims	Therapeutic behavior/theoretical background	Art means and expressions	Outcomes
7. Evans and Rutten-Saris, 1998	Chapter in book about art therapy with children with developmental problems. Examples from three cases in theoretical frame [i.e., early developmental psychology (Stern, 1985)]	M	10	ASD	School for autistic children Great Britain	Unknown	Likely to benefit from art making as stimulation of developmental delay and expression Behavioral problems Social-communicative problems	Benefit from a visual approach and/or tactile stimulation Development of communication skills Development of self-image Improvement of flexibility	Following the child Directive and structuring approach Following the child Offering new sensory experiences Sensory regulation Communication in art / Early developmental psychology (Stern, 1985)	Representative drawing with increased control and awareness Pencils, crayons, paint, paper, water Animals, human figures Sharing art experiences	Improved communication skills/social behavior Improved self-image Better regulation of anxiety and anger
		M	8	ASD	School for multi-disabled children Great Britain	Unknown	Likely to benefit from art making as stimulation of developmental delay and expression Behavioral problems Social-communicative problems	Benefit from a visual approach and/or tactile stimulation Development of communication skills Development of self-image Improvement of flexibility	Following the child Directive and structuring approach Following the child Offering new sensory experiences Sensory regulation Communication in art / Early developmental psychology (Stern, 1985)	Pre-representative scribbles Stockmar wax crayons, paper Kinesthetic and sensory experiences Sharing art experiences	Improved communication skills/social behavior Improved self-image More quality of life
		M	6–8	ASD	Slovenia	Unknown	Likely to benefit from art making as stimulation of developmental delay and expression Behavioral problems Social-communicative problems	Benefit from a visual approach and/or tactile stimulation Development of communication skills Development of self-image Improvement of flexibility	Following the child Directive and structuring approach Offering new sensory experiences Sensory regulation Communication in art / Early developmental psychology (Stern, 1985)	Pre-representative scribbles Stockmar wax crayons, paper Kinesthetic and sensory experiences Sharing art experiences	Improved communication skills/social behavior Improved self-image Improved learning skills

Table 2 (Continued)

Author, year	Type of study	Gender	Age	Diagnosis	Setting	Duration of treatment	Reasons for referral	Aims	Therapeutic behavior/theoretical background	Art means and expressions	Outcomes
8. Gabriels, 2003	Chapter in Handbook Art Therapy; theoretical overview with general practice examples	–	–	All types	–	Unknown	Likely to benefit from art making as stimulation of developmental delay and expression Behavioral problems Social-communicative problems	Benefit from a visual approach and/or tactile stimulation Development of communication skills Improvement of flexibility	Being aware of the child's response Verbal directions Communication in art	A diversity of art media, tools and activities Sensory and kinesthetic experiences Shared experiences	Improved communication skills/social behavior Better regulation of anger and anxiety Improved learning skills
9. Goucher, 2012	Chapter in a book about play based interventions for children with ASD	M	13 up to 17 years	Asperger	Non-public school for special education Individual art therapy as a start, group art therapy later (psycho educational) USA	Group: 2 years	Likely to benefit from art making as stimulation of developmental delay and expression Behavioral problems Social-communicative problems	Benefit from a visual approach and/or tactile stimulation Development of communication skills Improvement of recreation skills Improvement of quality of life	Directive and structuring approach Offering new sensory and symbolic experiences Verbal directions Communication in art	Representative drawing and writing Broadened interests from stereotyped interests Expressed and talked about his insecurities and fears which diminished Sharing art experiences	Improved communication skills/social behavior Improved self-image Increased flexibility Awareness of pleasure Reduced anxiety
		M	13 up to 17 years	ASD	Non-public school for special education Individual art therapy USA	Several years	Likely to benefit from art making as stimulation of developmental delay and expression Behavioral problems Social-communicative problems	Benefit from a visual approach and/or tactile stimulation Development of communication skills Improvement of recreation skills Improvement of quality of life	Directive and structuring approach Following the child Offering new sensory and symbolic experiences Verbal directions Communication in art	Representative shaping with a variety of art materials Increased differentiation of images and symbols. From rainbows to animals, to portraits Sharing art experiences	Improved communication skills/social behavior Improved self-image More control over art materials and more self-control



Table 2 (Continued)

Author, year	Type of study	Gender	Age	Diagnosis	Setting	Duration of treatment	Reasons for referral	Aims	Therapeutic behavior/theoretical background	Art means and expressions	Outcomes
10. Henley, 1999	A qualitative group study of 5 years of Art Therapy Summer Camps with 25 children with ASD and ADHD	M	Group: 6–12 Case: 7	ASD/ADHD	Group activities and individual art therapy USA	5 weeks, daily program	Likely to benefit from art making as stimulation of developmental delay and expression Behavioral problems Social-communicative problems	Benefit from a visual approach and/or tactile stimulation Development of communication skills Improvement of recreation skills Improvement of quality of life	Directive and structuring approach Offering new sensory and symbolic experiences Verbal directions Communication in art	Representative and expressive play. Animals Every facet of the daily camp experience is a potential creative therapeutic experience Sharing art experiences with other children	Improved communication skills/social behavior Improved self-image Transfer: many children behaved better at home
11. Isserow, 2008	Theoretical study (art therapy theory; joint attention theory; psycho-analytical points of view). Examples from two cases	F	17	ASD non-verbal	Child, adolescent and family consultation service Great Britain	7 months AT, weekly sessions	Behavioral problems Social-communicative problems	Benefit from a visual approach and/or tactile stimulation Development of communication skills Improved self-awareness	Following the child Offering new sensory and symbolic experiences Verbal directions Verbal attempts to make contact / Early developmental psychology Client-centered psychology Art psychotherapy	Pre-representative sensory and kinesthetic experiences Own saliva, water and paint Slightly awareness of materials and the other	Slightly more aware of the (verbal) other and of the material
		M	12	ASD high intelligence	School for children with ASD AT as part of family treatment Great Britain	Unknown	Behavioral problems Social-communicative problems	Unknown	Following the child Offering new sensory experiences Verbal directions / Early developmental psychology Client-centered psychology Art psychotherapy	Representative and expressive shaping Claying a portrait with scared eyes Talking about experiences in art and in daily life	Improved communication skills/social behavior Improved self-image Reduced anxiety

Table 2 (Continued)

Author, year	Type of study	Gender	Age	Diagnosis	Setting	Duration of treatment	Reasons for referral	Aims	Therapeutic behavior/theoretical background	Art means and expressions	Outcomes
12. Kornreich and Schimmel, 1991	Case study	M	11	DSM III: early infantile Autism with schizophrenic features and functional mental retardation	Out-patient community-based child guidance clinic. Mother receives instructions in remedial parenting USA	2 years, once a week	Ineffective other treatments Likely to benefit from art making as stimulation of developmental delay and expression Behavioral problems Affective problems Social-communicative problems	Benefit from a visual approach and/or tactile stimulation Development of communication skills Development of learning skills Improvement of flexibility	Directive and structuring approach Offering new sensory and symbolic experiences Verbal directions	Representative stereotype figures are becoming more personal with drawing and painting materials, water clay and tissue paper Themes from the world around him: family members, animals, landscape seen from the window Talking about drawings and daily life	Improved communication skills/social behavior, also at home and in school Better regulation of anger and anxiety Improved learning skills Improved self-image
13. Lu et al., 2010	Action research and theoretical frame of Jungian sandplay therapy. Case vignettes illustrating descriptions of development of play skills	2 girls, 23 boys	7–12	ASD at different levels of functioning	Special education school Canada	10 weeks intervention, once a week 60 min, 5–10 min Opening and closing rituals Both individually and in small groups	Likely to benefit from art making as stimulation of developmental delay and expression Behavioral problems Social communicative problems	Benefit from a visual approach and/or tactile stimulation Development of communication skills Development of learning skills Improvement of flexibility	Following the child Directive and structuring approach Offering new sensory and symbolic experiences Sensory regulation Verbal directions Communication in art / Play therapy Jungian psychology	Sensoric and symbolic experiences in sandtray with sand and colorful figurines and building materials, water Stimulating sensory play and symbolic expression Sharing art experiences	Improved communication skills/social behavior Better regulation of anger and anxiety More flexible behavior Improved learning skills

Table 2 (Continued)

Author, year	Type of study	Gender	Age	Diagnosis	Setting	Duration of treatment	Reasons for referral	Aims	Therapeutic behavior/theoretical background	Art means and expressions	Outcomes
14. Martin, 2009a	Qualitative study. Theory and practice based	Unknown	Unknown	ASD at different levels of functioning	Unknown	Unknown	Likely to benefit from art making as stimulation of developmental delay and expression Behavioral problems Social-communicative problems	Benefit from a visual approach and/or tactile stimulation Development of communication skills Development of learning skills Improvement of flexibility Improvement of self-awareness Improvement of recreation skills	Following the child Directive and structuring approach Offering new sensory and symbolic experiences Sensory regulation Verbal directions / Developmental/behavioral, psychotherapeutic, eclectic theories	The whole range of expressive materials and possibilities to stimulate sensory and expressive experiences	Unknown
15. Martin, 2009b	Practice based and theory based.	Numerous examples from practice experiences	≥2	ASD at different levels of functioning	Art studio Art courses for young children, and young children with their parents USA	?	Likely to benefit from art making as stimulation of developmental delay and expression Behavioral problems Social-communicative problems Developmental possibilities	Benefit from a visual approach and/or tactile stimulation Development of communication skills Development of learning skills Improvement of flexibility Improvement of self-awareness Improvement of recreation skills	Following the child Directive and structuring approach Offering new sensory and symbolic experiences Sensory regulation Verbal directions	Often pre-representative stadium and kinesthetic stimulus Diversity of painting materials, drawing materials, clay, textile, found objects	Improved communication skills/social behavior Improved learning skills More flexible behavior Better self-image

Table 2 (Continued)

Author, year	Type of study	Gender	Age	Diagnosis	Setting	Duration of treatment	Reasons for referral	Aims	Therapeutic behavior/theoretical background	Art means and expressions	Outcomes
16. Schweizer, 1997	Case examples in theoretical frame [i.e., early developmental psychology (Stern, 1985)]	M	8	PDDnos <sup>a</sup>	Residential child psychiatric hospital Art therapy as part of multi-disciplinary team The Netherlands	1½ year 2× weekly treatment	Behavioral problems Social-communicative problems Developmental possibilities	Benefit from a visual approach and/or tactile stimulation Development of communication skills Development of learning skills Improvement of flexibility Improvement of self-awareness	Following the child Directive and structuring approach Offering new sensory and symbolic experiences Verbal directions Communication in art / Early developmental psychology (Stern, 1985)	Representative images: drawing stereotyped figures from his own scary fantasy world to a more crafts-like shaping Experiences with different art materials to a safer symbolic work Talking about the techniques and safety here and now	Improved communication skills/social behavior Improved self-image More flexible behavior Better regulation of anger and anxiety
17. Schweizer, 2014	Theory based on interviews with eight art therapists about their practice examples	M, F	6 up to 12 years	ASD	Private practice. School for special education In- and out-patient child psychiatric hospital The Netherlands	Unknown	Not ASD only, but problems at home Social-communicative problems Behavioral problems	Benefit from a visual approach and/or tactile stimulation Development of communication skills Development of learning skills Improvement of flexibility Improvement of self-awareness	Follow the child Directive and structuring approach Offering new sensory and symbolic experiences Verbal directions Communication in art	Representative and pre-representative expressions Thematic/symbolic expressions Sensory experiences Broad diversity of materials, techniques and expressions Sharing art experiences	Improved communication skills/social behavior Improved self-image Better regulation of anger and anxiety More flexible behavior Showing the child's art to enjoy life Better planning skills

Table 2 (Continued)

Author, year	Type of study	Gender	Age	Diagnosis	Setting	Duration of treatment	Reasons for referral	Aims	Therapeutic behavior/theoretical background	Art means and expressions	Outcomes
18, Van Zweden-Van Buren, 2007	MA thesis, based on literature comparing art therapy with art education as interventions for children with ASD. Recommendations for art therapy	Un-known	Un-known	ASD at different levels of functioning	Art/art therapy in schools The Netherlands	Unknown	Likely to benefit from art making as stimulation of developmental delay and expression Behavioral problems Social-communicative problems Developmental possibilities	Benefit from a visual approach and/or tactile stimulation Development of communication skills Development of learning skills Improvement of flexibility Improvement of self-awareness Improvement of recreation skills	Following the child Directive and structuring approach Starting point is the clients' question for help and his/her problems A supportive, directive and structuring attitude seems to be recommended	Expressive materials are used to develop varied and deeper experiences and understanding of body and inner world	Improved self-image More flexible behavior Better regulation of anger and anxiety Improved communication skills/social behavior

<sup>a</sup> Explanation of abbreviations: M = male; F = female; HFA = High Functioning Autism; ASD = Autism Spectrum Disorder; PDDnos = Pervasive Developmental Disorder, not otherwise specified; AT = Art Therapy.

*Shapes and themes*

One general characteristic that appears in the art work is the stereotype way of making images.<sup>[1,5,14–16]</sup> Even with a sensory and kinesthetic approach – as in symbolic work – children are mainly not explorative in the beginning of the art therapy (although ‘becoming more explorative and expressive’ is an important aim). Children differ in the ability to make realistic drawings. The so-called ‘pre-representative drawings’<sup>[6,7,11,14,15]</sup> not always seem connected with a low intelligence profile.<sup>[3,4,7,15]</sup> Often the realistic drawings are stereotyped figures from comics, films, or computer games.<sup>[1,5,6,12,16]</sup> The images at the beginning of the treatment are often scary.<sup>[9–12,16]</sup> If children are able to profit from support the symbols in the drawings become more safe.

*Development of personal artwork*

During the art therapy process, express their fears, and make more detailed connections with their daily life.<sup>[1–3,5–7,9–15]</sup>

*Verbal and non-verbal communication*

Concerning the communicative characteristics of art expressions our sources indicate that art supports expressiveness and art is another language to share experiences.<sup>[1–3,5–7,9–11,17]</sup> Art therapy is described as an alternative way of communicating, because the art stands between the child and the therapist. This creates a safe environment for the child to focus attention and to develop skills and expressiveness.<sup>[1,2,6,10]</sup> Children make contact during art making with the therapist and with other children, and develop their communication skills.<sup>[1,2,5,7,8–13]</sup> Some children profit more from body language and playful interactions with the art materials, than from spoken words.<sup>[5–7,11–13,15]</sup> Although therapy is mostly non-verbal, many children start to talk about their experiences with materials and the symbols they make.<sup>[1–4,6,9–12,16]</sup>

*Therapeutic behavior*

Therapeutic behavior concerns an active attitude as well as a non-directive approach. It is about *what* the art therapist is offering verbally and non-verbally, and also about *how* the art therapist approaches the client. In 16 of 18 practice examples theoretical backgrounds have been described. Besides five characteristics of therapeutic behavior emerged: attunement to clients’ needs; stimulating visual- and tactile sensory experiences; supporting the shaping process; verbal directions; and sharing experiences.

*Attunement to clients’ needs*

The art therapist facilitates the child to learn in a non-conventional, nonverbal, and comprehensive and expressive language<sup>[2,14,15,18]</sup> with both non-directive and directive attitudes.<sup>[1,3,7,13–17]</sup> The art therapist attunes to individual needs and possibilities of the child<sup>[1,4,5,7,13–16]</sup> indicating that attunement to the child supports his or her development.<sup>[6,7,16–18]</sup> The child may follow its own needs, choose its own subjects, and follow its own interests.<sup>[3,4,11,12,14–15]</sup> The art therapist offers encouragement and direction,<sup>[5,7,9,18]</sup> and structures and facilitates the process with materials,<sup>[9,10,12,16,17]</sup> ‘safe’ art forms and techniques.<sup>[3,9–11,13–18]</sup>

*Supporting visual- and tactile sensory experiences*

Visual- and tactile sensory experiences are facilitated, stimulated and regulated by evoking expression with tactile materials,<sup>[2,5,7,13–15]</sup> structuring imaginative themes,<sup>[4,9,13,16]</sup> gradually introducing new materials and directions,<sup>[5,7,13,16]</sup> and assisting the child in maintaining these new experiences.<sup>[5,7,16]</sup>

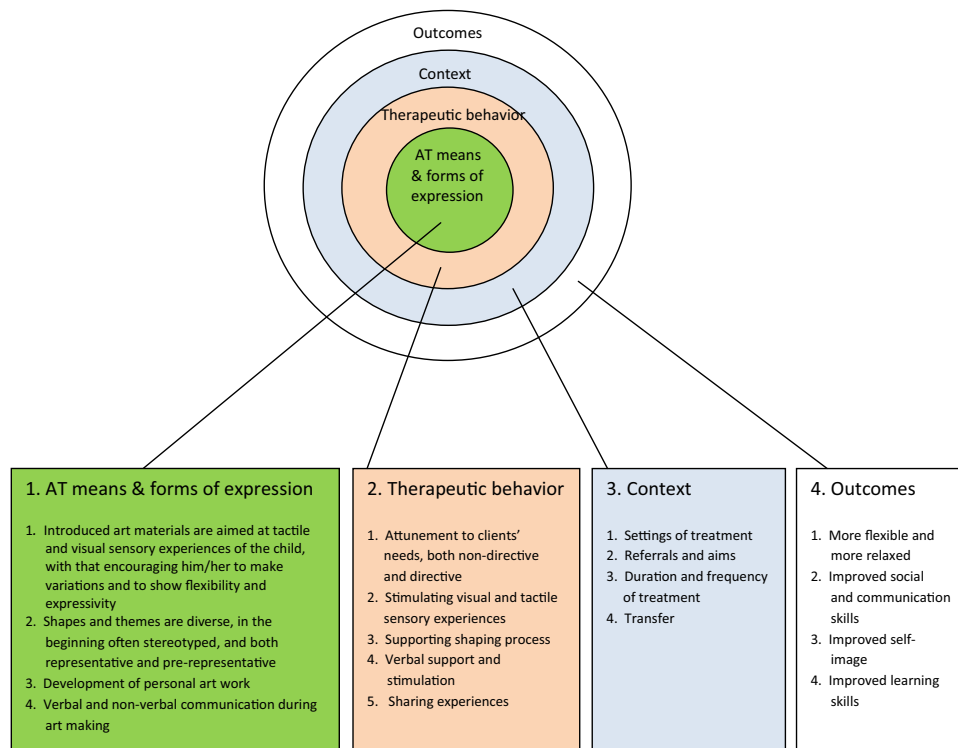


Fig. 2. COAT-model concerning children diagnosed ASD.

#### Supporting the shaping process

In all case examples<sup>[1–18]</sup> the art therapist offers 'new experiences' like visual and tactile sensory experiences and symbolic images, since the child is inclined to hold on its own well-known habits. Also the art therapist offers technical support for a 'good result' as art work.<sup>[14–16]</sup>

#### Verbal directions

Verbal directions are varied and include supporting, structuring, and playing about the shaping process<sup>[1,2,8,10–13]</sup>; communicating in a sensitive way when anxiety increases<sup>[13–16]</sup>; stimulating to draw more in details, draw or paint how you feel now, draw or paint things in the room, about daily life<sup>[1–3,9–12,14]</sup>; talking about art work (reflecting)<sup>[3,10–14]</sup>; and psycho-education.<sup>[8,14,15]</sup>

#### Sharing experiences

Interactions between the art therapist and the child happen through art materials/images. The art therapist recognizes and communicates through art in early developmental stages and 'vitality effects' (Stern, 1985).<sup>[6–8]</sup> The art therapist offers contact through materials<sup>[1,6,8,16]</sup> and supports communication with others through art making.<sup>[9,10,12]</sup>

#### Theoretical background

Therapeutic behavior is nearly always described related to psychological theoretical principles, sometimes as a combination of theories. Six theoretical frames were mentioned: early developmental psychology (cf. Stern, 1985),<sup>[1,3,5–7,11,16]</sup> client-centered psychology,<sup>[1,3,11]</sup> art psychotherapy,<sup>[1,2,11]</sup> play therapy,<sup>[1,13]</sup> Jungian psychology,<sup>[13]</sup> and art education.<sup>[8,9,14,15,18]</sup>

#### Context

This category concerns four items: settings; referrals and aims; duration and frequency of treatment; and transfer.

#### Settings

In about 60% the treatment setting is a school. This concerns schools for autistic children,<sup>[5–7,11]</sup> schools for special education,<sup>[1,9,13]</sup> and schools for multi-disabled children.<sup>[7]</sup> The other settings are: residential care,<sup>[16]</sup> outpatient child guidance clinic,<sup>[11–12]</sup> private practice,<sup>[2]</sup> art studio,<sup>[14–15]</sup> and summer camp.<sup>[10]</sup>

#### Referrals and aims

Seven reasons for referral were mentioned in at least three studies. These were: social communicative problems (living in their own world, problematic social interactions),<sup>[1–18]</sup> affective problems,<sup>[2,12,14]</sup> behavioral problems (anger outbursts<sup>[1,10,12,17]</sup> and anxiety<sup>[9–12,14]</sup>), restricted interests, activities and behaviors,<sup>[1,2,5–7,9–18]</sup> attention problems,<sup>[1,3,5–7,10,11,16–18]</sup> specific developmental problems,<sup>[5–8,13,15–18]</sup> and 'likely to benefit from art making to stimulate development and expression'<sup>[1,2,4,7,9,15,17]</sup> or 'likely to benefit from a visual approach and/or tactile stimulation'.<sup>[1–18]</sup>

Six topics appeared in the literature as aims of treatment: communication, sensory stimulation, self-awareness, flexibility, learning skills, and other aims. Communication aims were characterized by the development of interaction possibilities and/or communication skills,<sup>[5–11,13,15,18]</sup> or were directed to the child to become more expressive and playful (in art and in behavior),<sup>[1–3,5,8,9,11,13–15,18]</sup> to develop a higher sensitivity towards symbolic information,<sup>[7,13,14,18]</sup> and to develop the sharing of experiences.<sup>[11,12,15]</sup> The aim of sensory stimulation was mainly to explore materials.<sup>[9,14,15,18]</sup> Self awareness concerned the improvement of self-esteem.<sup>[7,10–12,16]</sup> The aim of flexibility was mainly connected to diminishment of anxiety, anger and stress with the child.<sup>[2,5,6,10,12]</sup> Learning skills was about the development of learning skills.<sup>[5,12–16]</sup> Finally, there were two other aims in several studies: development of recreation skills<sup>[2,9,10,15]</sup> and improving quality of life of the child.<sup>[9,13,16,18]</sup>

### *Duration and frequency of treatment*

In 67% of the case examples the duration and frequency of the art therapy is unknown. The reported treatment periods differ from ten weeks to many years. Forty weeks or longer is more often mentioned than shorter treatment periods.

### *Transfer*

Development of the ability to draw about daily life aspects is described in connection with increasing communication skills with others in daily life.<sup>[2,3,8,9]</sup> In a number of cases it is indicated that communication outside the art therapy situation has to be (and actually was) improved.<sup>[2,8–10,12,13]</sup> Sometimes parents or teachers were involved in the art therapy treatment.<sup>[2,9,15]</sup>

### *Outcomes*

From all practice examples and general descriptions, four types of art therapy outcomes were reported: ASD children got more flexibility and relaxation, improved their social and communication skills, improved their self-image, and improved their learning skills. Note that these observations are qualitative observations. Some 2/3 of the outcomes were described in terms of improved behavior; the other 1/3 in terms of improved behavior in connection with developments in art making.<sup>[2–8,11–13,16]</sup>

### *More flexibility and relaxation*

This result concerns qualitative observations about more flexibility in thinking and handling of the child,<sup>[9,13,15–18]</sup> more relaxation at school and at home,<sup>[9,12,15]</sup> improved sensory and emotional regulation,<sup>[8,15,18]</sup> and less anxiety and anger.<sup>[9,11,12,17,18]</sup>

### *Improved social and communication skills*

In the studies a wide range of improved social behavior was reported: more engagement in contacts,<sup>[3,7,12,13,15,17]</sup> sharing sensitive interactions during art making,<sup>[1,5–7,13]</sup> more awareness of the other,<sup>[1,7,11,13,16,17]</sup> increased tolerance for interactions,<sup>[5,9,12,17]</sup> improved social behavior at home and at school,<sup>[2,4,7,10,12,13,15–17]</sup> increased expressivity,<sup>[2–8,11–13,16]</sup> increased verbal expressivity,<sup>[2,11–13]</sup> sharing experiences with the therapist by drawing about daily life,<sup>[2,3,12,17]</sup> and easier to live with.<sup>[4,10,12,15,16]</sup>

### *Improved self-image*

According to three studies all kind of playful experiences contribute to improving self-esteem and social skills.<sup>[9,10,13]</sup> In a lot of studies the children are qualitatively evaluated as to have improved their self-esteem, self-concept, and sense of self,<sup>[3,5–9,16]</sup> and/or to have gained more self-confidence.<sup>[1,2,5–13,15–18]</sup> In addition, other results are described in terms of like: gaining insight and understanding of one's own autism,<sup>[2,5,6]</sup> being more personal,<sup>[1,11–16]</sup> experiencing more pleasure,<sup>[3,9,15–16]</sup> and experiencing a better quality of life.<sup>[3,6,9,10,13]</sup>

### *Improved learning skills*

Here it concerns the development of attention/task orientation,<sup>[7,8,13,15,18]</sup> an easier way of coping with new information,<sup>[15–18]</sup> and the enhancement of symbolic thinking and the development of imagination.<sup>[7,8,13,15,18]</sup>

## **Discussion**

### *Summary and reflection*

All 18 relevant studies were qualitative descriptions, involving ASD children who received some type of art therapy during some

period of time. To systematically analyze and categorize the information in these studies, the COAT-model of Schweizer (2014) was applied.

The results of the qualitative analyses suggest that art therapy may contribute to a more flexible and relaxed attitude, a better self-image, and improved communicative and learning skills in children diagnosed ASD. Art therapy might be able to have a positive contribution to both problem areas of ASD children, as defined in DSM-5 (APA, 2013): the social communicative problems and the restricted and repetitive behavior patterns.

In "Introduction" it was noticed that there was some evidence that typical art therapeutic elements such as sensory experiences with sight and touch, may improve social behavior, flexibility and attention-abilities of autistic children. This review confirms these indications and provides more insight in art therapeutic elements, art therapists' behavior, the therapeutic context, and outcomes strived for with children diagnosed ASD. Regarding the behavior of the therapist – a key factor in treatment processes (Duncan, Miller, Wampold, & Hubble, 2010) – the most often reported elements were attunement to children's needs, supporting them in getting sensory experiences, supporting their art shaping process, giving them verbal direction, and sharing experiences with them. Considering the wide variation in art therapy practices that we found findings of this review should be interpreted with caution.

Further research, which we strongly recommend, can help to clarify the meaning of therapists' input and the other factors in the COAT-model, and might indicate the status of art therapy as an additional or alternative intervention for usual treatment approaches for children with ASD, such as cognitive behavioral therapy or social behavior training (Schothorst et al., 2009).

The evidence we gathered was almost exclusively based on clinical case descriptions. The methodological quality of the included studies is, generally speaking, weak. All included studies report on single practice examples from authors who were also participating themselves as art therapists. This might create a publication bias in the data (Song, Hooper, & Loke, 2013); only successful treatments from these professionals were described, excluding their less positive cases. In addition, information on longer term results is missing so even in these well-described cases crucial feedback is lacking on what came out at the end. Anyway, this is the state of affairs in many domains of child and youth treatment research (Knorth, Knijff, & Roggen, 2008).

One of the reasons why there is such a shortage of research is proposed by Gilroy (2006); she suggests that art therapists get uncomfortable from empiricism and turn away from it because of the gap between the varied art therapy practices and the uniformity that is required in outcome studies. Without a certain degree of 'manualization' of art therapies it is very hard to detect common elements in practice that can explain for the difference between the more and less successful art therapeutic cases (Wilson, 2007). In this context Gilroy (2006) stresses the need to further develop the profession of art therapy, based on research- and practice-based evidence.

### *Recommendations*

To uplevel the evidence on art therapy regarding children with autism, more research is needed. We propose some focus points.

First, there is a need for defining core concepts in art therapy with children diagnosed ASD such as 'sensory experiences', 'expressivity', 'personal art work', 'flexible behavior', 'social-communicative behavior' or 'learning skills'. Although practitioners undoubtedly know how to use these labels and what is meant by such expressions, more precise definitions are wanted. As long as concepts like these are used as ill-defined indicators of what is going on in art therapy, progress in our knowledge base is hard to reach

(Malchiodi, 2012). Research on therapists' own conceptualizations and experiences could support the process of clarification (Teeuw, 2011).

Second, a more standardized treatment program should be articulated, based on a relevant change theory (Malchiodi, 2005; Waller, 2006), in combination with practice-based evidence as, for instance, forwarded in this review. Only art therapeutic work that is the expression of a replicable approach with articulated principles, methods and techniques can be researched on its treatment integrity and outcomes (Yeaton & Sechrest, 1981).

Third, attention should be paid not only to successful treatments but also to less successful or failing cases. Since no child with ASD is the same, it is plausible that there are 'failing' treatments. By including therapeutic endeavors that 'don't work' we might learn what should be avoided, i.e., how to strengthen our work for the benefit of vulnerable children and their parents or caretakers (Kingdon, Hansen, Finn, & Turkington, 2007; Rizvi, 2011; Whipple et al., 2003).

Fourth, monitoring of art therapies in practice should be conceived of a qualifying characteristic of the profession. A systematic registration of client characteristics, main therapeutic activities, and outcomes – the last ones on the short and the longer term – will help to level up the art therapeutic discipline (Van Yperen, 2013). Systematic delivrance of this kind of feedback is the only way to discover 'what works' in art therapy with ASD diagnosed children (cf. Reese, Norsworthy, & Rowlands, 2009; Sapyta, Riemer, & Bickman, 2005). Different research designs can be applied, varying from wide-scale AT-program evaluations (Harinck, Smit, & Knorth, 1997) to piled  $N=1$  studies (Spren, 2013); the last ones being especially attractive for care workers/therapists in daily practice, also because of the intrinsic educational and training impact they might have for them (Van Yperen, 2013).

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