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Evaluation of 'Images of Self,' an art therapy program for children diagnosed with autism spectrum disorders (ASD)

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ABSTRACT

The art therapy (AT) program for children diagnosed with Autism Spectrum Disorders (ASD), 'Images of Self', has been evaluated with repeated single case studies ($n = 12$) in a mixed-methods design. The program focuses on children's difficulties with their 'sense of self', 'emotion regulation', 'flexibility' and 'social behavior'. Parents, teachers and art therapists scored the BRIEF and CSBQ, instruments for rating child behavior. Children filled out the SPPC, a self-image scale. To evaluate the quality of the program, therapists used a child observation scale (OAT-A) and a therapists' self-evaluation scale (EAT-A). All instruments were applied three to five times per case, depending on the corresponding measurement objectives: one week before the start of the program (T0), during session 3 (T1), session 8 (T2), session 15 (T3), and 15 weeks after termination of the treatment (T4). Parents and teachers were invited to complete a form for qualitative comments which was structured around the four problem areas. Therapists video-recorded three sessions and evaluated these with parents and - during training sessions - with the principal investigator. At the end of the treatment parents, teachers and art therapists gave a rating for their overall satisfaction with the treatment. Main improvements after treatment were seen in children's flexible and social behavior. Overall satisfaction regarding the program showed averages between 7.1 and 7.7. Implications of our study for the AT-practice and future research are discussed.

1. Introduction

'Images of Self' is a recently developed art therapy (AT) treatment program for children with problems related to Autism Spectrum Disorders (ASD). The program is designed on the basis of a series of practice-based studies (Schweizer, Knorth, & Spreen, 2014; Schweizer, Spreen, & Knorth, 2017; Schweizer, Knorth, Van Yperen, & Spreen, 2019a, 2019b). In this series, consensus was reached among 32 art therapists and 28 referrers about what they considered to be typical elements of AT for children with ASD. Two instruments (I. Observation of a Child with ASD in Art Therapy: OAT-A; II. Evaluation of the Art Therapist working with a child with ASD: EAT-A) were also developed to enable program evaluation, including studying the treatment integrity of the art therapist (Schweizer et al., 2019b).

Children diagnosed with ASD are characterized by their restricted social and communicative skills and repetitive and obsessive behaviors (APA, 2013). In AT, children's experiences during the art-making processes and the 'art product' they create are assumed to reduce or stabilize problematic behavior and/or support children in dealing with and accepting these problems (Malchiodi, 2003; Rubin, 2001;

Schweizer, Haeyen, Henskens, Rutten-Saris, & Visser, 2009). Art therapists facilitate the emotional, social, physical and creative processes in a systematic cycle of observing, formulating treatment aims, treating and evaluating children's progress (Smeijsters, 2008; Visser, 2009). A defining characteristic of this experiential way of treatment is the so-called *triangular relationship*; communication between therapist and client goes indirectly via the art-making. This way of treatment provides opportunities for fresh experiences and for the development and training of new skills for children with communication problems. Working with art materials offers a focus on tactile and sensory motor experiences. Such a process may contribute to new behavior (Bergs-Lusebrink, 2013; Case & Dalley, 1990; Gilroy, 2006; Hinz, 2009; Malchiodi, 2003). For example, a child with ASD often has difficulties with perceiving his/her own feelings and experiences. During art-making, the child may explore and develop preferences and new skills, based on a better processing of feelings and experiences (Ben Itzhak, Abutbul, Bela, Shai, & Zachor, 2016; Betts, Harmer, & Schmulevich, 2014; Martin, 2009).

Four main problem areas of children with ASD in AT were defined. These were 'sense of self', 'emotion regulation', 'flexibility', and 'social

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Fig. 1. Hypothetical influence from art therapy on the behavior of the child with autism.

communication' problems (Schweizer et al., 2019b). Development of *sense of self* starts with a focus on personal experiences, i.e. the child's self-perception (what do I feel, like or dislike?) (Schweizer et al., 2019a). A better self-perception and awareness of success during art-making are expected to contribute to an improved self-image and self-concept. Greater self-esteem is considered to be a final result of these developmental stages of 'sense of self' (cf. Stern, 1985). Problems with *emotion regulation* are related to a strong or weak reactivity and can appear as anger outbursts (Konstantareas & Stewart, 2006; Samson et al., 2013). *Flexibility* problems appear as difficulties that arise because of the child's rigid behavior patterns (APA, 2013). *Social communicative behavior* problems often manifest themselves as troubles of the child with adaptation to other people and new situations, and as difficulties with expressing themselves verbally (APA, 2013). Fig. 1 shows how the 'Images of Self' program is assumed to contribute to change in these problem areas of the child.

The central aim of this study was the evaluation of the 'Images of Self' AT-program for children with ASD. This involved monitoring the child during the therapy sessions, at school, and at home. The contribution of the art therapist was also monitored. Desired outcomes included changes in children's 'sense of self', 'emotion regulation', 'flexibility' and 'social behavior', thereby showing a movement in the direction of behavior that is better accommodated to the child's social environment; behavior that helps the child to function better in his/her social environment (Boer & Van der Gaag, 2016; Van der Doef, 1992).

1.1. The program

The 'Images of Self' program consists of 15 weekly, individual AT sessions (each lasting 45 min) and is standardized as much as possible. It is to be executed in accordance to the child's preferences in themes, type of art materials, skills, techniques and individual needs, thereby taking into account the variety of problems for each individual child with ASD (Fein, 2011; Feinstein, 2010; Waterhouse & Gillberg, 2014). A prerequisite for conducting the program is that the AT room must offer a quiet safe space with a broad spectrum of art materials that offer opportunities to vary with different experiences. The art therapist must take an active and supportive role in creating a safe and inviting place, so the child is stimulated to express him/herself through art. The first three sessions are focused on getting used to the situation and exploring the preferences and resistances of the child relating to the type of art materials and the art therapist. The child is stimulated and supported to

create art products which make him/her happy and which generate success experiences. In the next 12 sessions, the child is stimulated to vary experiences and develop different skills, to become more aware of experiences, preferences and resistances, and to connect words to these experiences. For instance, a boy who participated in this study was referred to art therapy with a very negative self-image. He created a bird house with support from the art therapist and sawed, hammered, painted and made a cosy place with soft fabric inside the little house. Every new technique was a real challenge for him. In the beginning he told the art therapist several times that he was not skilled enough to create anything. Over time he began to express anger during hammering, enjoyed the smell of the wood, and he caressed the fabric for the nest. With help from the art therapist he practiced to stop telling that he wasn't able to make anything and he began talking about what he liked about creating the bird house. During these activities he also began telling about his difficulties at school with other children and with his teacher who didn't understand him. Meanwhile, at home and at school, he began expressing what was on his mind.

The therapist records the sessions through video, and watches and evaluates the recordings afterwards with the parents. In addition, parents are offered a psycho-education training to improve their understanding of ASD. Parents who did not receive this training had their child treated in a special educational setting.

2. Method

The program was evaluated with a sample of 12 single case studies in a pretest–posttest design. At five specific moments in time, members of the child's network (i.e., parents, teacher, art therapist), completed several questionnaires (Fig. 2). Possible change in behavioral aspects of 'sense of self', 'emotion regulation', 'flexibility' and 'social communication' were measured with these questionnaires. Additional comments were noted during the same five measuring moments by the network members in an evaluation form and during training sessions with the art therapists and the principal investigator. This mixed-methods design provides a multiple perspectives approach of quantitative and qualitative data, leading to an improved understanding of the topic being studied (Creswell, 2015; Tashakkori and Teddlie, 2010).

The study design was approved by the METC, the Dutch Medical Ethical Assessment Committee (Centrale Coördinatie Mensgebonden Onderzoek – CCMO) in 2017.

Fig. 2. Measurements.

2.1. Participants

Included were children diagnosed with ASD between the ages of 6–12 years and having an IQ ≥ 80 . Children were signed up through the usual referral procedures from the collaborating organizations, i.e. the art therapists employed there ($N = 7$). Based on the professional judgements of these therapists, children were excluded if they were evaluated as showing too much resistance to or fear of art-making. With the help of the collaborators, initially 15 children were found who fulfilled the inclusion criteria. However, three children dropped out before session 8 because of a highly problematic and disturbing school situation. As a result, 12 children fully participated in this study.

Seven art therapists finally joined the study. All participating therapists had a Bachelor's degree in art therapy, which is the general professional qualification in the Netherlands. They had at least two years' experience of working in AT with the target group. They were included with the help of *convenience sampling* (Lavrakas, 2008), i.e. by using newsletters from professional organizations, Facebook, and word

of mouth. As a result, initially 17 art therapists signed up. During preparation in the training phase, 10 of them decided not to join the research because it appeared to be too time consuming. Moreover, for eight of them who worked in a private practice, it was an unpaid work.

Both parents and teachers of the included children contributed to the evaluation of 'Images of Self' by filling out questionnaires, observing the child's daily behavior, and reporting possible behavior changes. Further participation of parents was achieved by discussing and evaluating video recordings from selected sessions with the art therapist.

2.2. Instruments

The parents and the teachers completed two questionnaires. The first instrument was the (Dutch version of the) Behavior Rating Inventory of Executive Functioning (BRIEF; Gioia, Isquith, Guy, & Kenworthy, 2000; Huizinga and Smids, 2012), measuring executive functioning of children. Consistency and test-retest reliability for

parents and teachers (in the Dutch version) are high (Cronbach's α 0.78-0.97). Content and construct validity are well established. The 75 items of the BRIEF are rated on a 3-point scale ranging from 1 (never) to 2 (sometimes) or 3 (often).

The second questionnaire was the Children's Social Behavior Questionnaire (CSBQ), in a Dutch version (VSK), which measures social behavior of children with ASD (Hartman, Luteijn, Serra, & Minderaa, 2006; Hartman, Luteijn, Moorlag, De Bildt, & Minderaa, 2007). Internal consistency of this questionnaire is sufficient (Cronbach's $\alpha \geq 0.70$) for descriptive and research aims. The 49 items in the CSBQ are rated with a 3-point scale ranging from 0 (never) to 1 (sometimes) or 2 (often).

The children completed the Dutch version (CBSK) of the Self-Perception Profile for Children (SPPC; Harter, 2012; Veerman, Straathof, Treffers, Van den Bergh, & Ten Brink, 2004). This instrument measures self-perception and has 36 items with four rating options. Cronbach's α for internal consistency of the subscale 'behavior attitude' is poor (Cronbach's $\alpha \leq 0.70$). The subscales 'social acceptance' and 'self-esteem' show a Cronbach's $\alpha \geq 0.70$, which is acceptable. Test-retest reliability of the scales 'social acceptance' and 'self-esteem' are acceptable (Cronbach's $\alpha > 0.70$); that of the subscale 'behavior attitude' is poor ≤ 0.70 .

Expected behavioral changes were measured with subscales in the following questionnaires:

- 'Self-perception' was measured by the 'evaluation of behavior' (BRIEF), and 'behavior attitude' and 'self-esteem' subscales (SPPC).
- 'Emotion regulation' was measured by the 'emotion regulation' subscale (BRIEF).
- 'Flexibility' was measured by the 'flexibility' (BRIEF), and 'stereotype behavior' and 'resistance for change' subscales (CBSQ).
- 'Social behavior' was measured by the 'not attuned', 'diminished contact' and 'social understanding of problems' (CBSQ), and 'social acceptance' subscales (SPPC).

The art therapists evaluated the progress of the child during treatment with the 'Observation in Art Therapy of a child diagnosed with ASD' (OAT-A, Schweizer et al., 2019b). This instrument has 22 items covering four subscales: 'sense of self', 'emotion regulation', 'flexibility' and 'social behavior'.

The therapeutic behavior of the art therapist was evaluated with the 'Evaluation of the actions of the Art Therapist working with a child diagnosed with ASD' (EAT-A, Schweizer et al., 2019b). This instrument has 24 items and measures the professional behavior of the art therapist when working with a child. The four subscales are 'supporting the development of sense of self', 'supporting the improvement of flexibility', 'stimulating emotion regulation' and 'stimulating social behavior'. Both instruments were tested on interrater reliability and showed moderate to substantial reliability¹ with art therapists being trained in their use (Schweizer et al., 2019b).

Parents, teacher and art therapists indicated their satisfaction with the treatment using a rating scale ranging from 1 (completely unsatisfied) to 10 (completely satisfied).

Additional comments were noted by parents, teachers and art therapists in an evaluation form and during training sessions with the art therapists and the researcher. They were invited to briefly write down their comments about (intermediate) results and expectations concerning the child's behavior. The researcher extracted extra information from the art therapists about the treatment and evaluation moments with the parents and teachers, during training sessions (see below).

2.3. Procedure

The first measurements (T0) were planned one week before the actual treatment program for a child began. The parent/s and teacher of the child completed two questionnaires at T0: BRIEF and CSBQ. At session 3 (T1) the art therapist completed OAT and EAT, while the child completed SPPC. From the viewpoint of the art therapist this was before 'real treatment', because the first three sessions were for observation. i.e. to get a first impression of developmental opportunities in art-making and the behavior of the child. At session 8 (T2), the art therapist again completed OAT-A and EAT-A and made a video recording to be watched and evaluated with the parents. After session 15 (T3), the parents and the teacher completed the BRIEF and CSBQ, the child the SPPC, and the art therapist the OAT and EAT. Also in session 15, the art therapist made a video recording and selected representative parts to watch and evaluate with the parents. In addition, all participants were asked for an overall satisfaction rating (scale 1–10) of the whole treatment program. The follow up (T4) was 15 weeks after terminating the treatment. This art-making session was again recorded by video and evaluated, and afterwards the relevant questionnaires were completed by all participants. At all five timepoints (T0–T4), parents, teachers and art therapists completed an evaluation form to collect more detailed qualitative data on processes at home, at school and during treatment.

To support and control the research process, small groups of three or four art therapists were trained by the PI (who is also an experienced art therapist). This training comprised five meetings: one before the treatment, and four during and after treatment. During the training sessions, the treatment and research procedures were discussed, and video fragments of 'old cases' were watched and evaluated with OAT-A and EAT-A. This was done to enhance the reliability of the 'real' scoring later on (Schweizer et al., 2019b).

2.4. Data analysis

Severity of ASD-related problem behaviors were calculated based on norms in the BRIEF-, CSBQ- and SPPC-Manuals. To detect whether a single child had improved, the Reliable Change Index (RCI) (Jacobson & Truax, 1991; Veerman & Bijl, 2017; Wise, 2004) was computed between T0 and T3 and between T0 and T4. Criteria to assess meaningful change between two measurements are: strong improvement: $RCI \geq 1.96$; some improvement: $1.65 \leq RCI < 1.96$; stable: $1.65 > RCI > -1.65$; some decline: $-1.65 \geq RCI > -1.96$; strong decline: $RCI \leq -1.96$.

Qualitative data from the evaluation form filled out by parents, teachers and art therapists were analyzed according to the four outcome domains (Fig. 1). Next, they were organized in two categories: 'reasons for referral' and 'treatment results'.

Art therapists' comments were noted by the researcher during training sessions. These were then grouped under the following topics: a) How is the child's behavior at home, in the classroom, and in AT related to the outcome domains? b) (How) does watching a video recording with the parents contribute to (a better) understanding of the child by the art therapist and the parents? c) (How) does the use of the instruments OAT and EAT contribute to (a better) understanding of the child? d) What are the art therapist's most noticeable and hardly seen actions? e) (How) does the training contribute to the art therapist's understanding and performance during AT? Qualitative data analysis was checked by and discussed with a peer researcher.

3. Results

Table 1 gives an overview of some characteristics of the children and their context at the beginning of the treatment process, including the reasons for referral to AT. In addition, some facts on the engaged therapists are provided.

Some children not only showed ASD-symptoms, but also had to cope

¹ Moderate interrater reliability means: $0.40 < \kappa \leq 0.60$; substantial interrater reliability means: $0.60 < \kappa \leq 0.80$.

Table 1
Overview of participating children, art therapists, treatment settings, reasons for referral, use of medication, and context information.

Child	Gender	Age	Art Therapist	Experience of art therapist (years)	Treatment setting	Reason for referral	Medication	Context information
1	F	6	1	13	Ambulant mental health care organization	Not going to school at start AT.Heavy emotion regulation problems and inflexible behavior in classroom.	Vitamin B injections	After eight weeks she is part-time visiting school. Mother tells that the teacher does not understand her child.
2	F	9	2	40	(Semi)residential psychiatric center for children and youth education	Social communication problems: isolated; what is she thinking / feeling?	No	Philippine background with Asian values about behavior and education. Mother has a burn-out and is in a divorce.
3	F	12	3	8	School for special education	Emotion regulation problems in classroom (crying); negative self-image;Oversensitivity.	Methyl phenidate for oversensitivity	Extra psycho- education for child, to improve her understanding of ASD.
4	M	10	4	13	(Semi)residential psychiatric center for children and youth education	Child shows severe depressed feelings at home. Negative self-image.Emotion regulation problems in classroom (anxiety problems and anger outbursts).	Methyl phenidate	Parent training to improve understanding of ASD.
5	F	11	5	40	School for special education	Negative self-image.Severe depressed feelings at home.Emotion regulation problems in classroom (anxiety problems).Social communication problems at home and in school (hardly talks).	No	At the end of AT she went to a lower class grade.
6	M	9	5	40	School for special education	Negative self-image.Emotion regulation problems at home and in classroom (anxiety problems and anger outbursts).	Yes, for the anxiety and emotion regulation, but no specific information what it is.	After 10 weeks, mother severely ill. Child has problems with teacher.
7	M	10	5	40	School for special education	Negative self-image.Flexibility problems at home.	No	
8	M	12	6	20	(Semi)residential psychiatric center for children and youth education	Negative self-image.Flexibility problems. Social communication problems (what is she thinking / feeling?).Anxiety problems.	No	Parent training to improve understanding of ASD.
9	M	12	6	20	(Semi)residential psychiatric center for children and youth education	Negative self-image.Emotion regulation problems at home and in classroom (anger outbursts).	No	Parent training to improve understanding of ASD.Stop-think-do method is used in school.
10	M	11	1	13	Ambulant mental health care organization	Negative self-image.Emotion regulation problems at home (anger outbursts).Social communication problems (what is he thinking / feeling?).	No	Parent training to improve understanding of ASD.
11	F	11	7	9	Ambulant mental health care organization	Negative self-image.Social communication problems.	Methyl phenidate for ADHD	
12	M	12	1	13	Ambulant mental health care organization	Negative self-image. Very depressed feelings.Social communication problems (what is he thinking / feeling?).	No	Parent training to improve understanding of ASD.Divorce of parents during treatment.

Table 2

Overview of Reliable Change indexes (RCIs) regarding BRIEF-, CSBQ-, and SPPS-scores of parents, teachers and children (N = 12 children).

Outcomes: Concepts and Scales	Case 1		Case 2		Case 3		Case 4		Case 5		Case 6		Case 7		Case 8		Case 9		Case 10		Case 11		Case 12	
	Measuring moment																							
	T3	T4	T3	T4	T3	T4	T3	T4	T3	T4	T3	T4	T3	T4	T3	T4	T3	T4	T3	T4	T3	T4	T3	T4
Sense of self																								
BRIEF Beh. Eval. (parent)	-0,88	2,64	3,09	4,41	2,2	0	2,64	4,41	0	1,76	0	-0,88	0,44	1,32	0,88	0	1,32	1,76	-1,76	-1,76	1,32	1,32	0	0
BRIEF Beh. Eval. (teacher)	0,44	0,44	1,32	0,44	-0,44	0,88	1,76	0,88	-1,32	-0,88	0,44	0	0	0,88	0,88	0,88	0	-2,64	-1,32	-3,97	0,40	-3,97	-7,49	-6,17
SPPC Beh. Att. (child)	1,3	0,87	-2,61	0,87	-0,87	1,3	1,63	1,09	1,3	2,17	1,84	0,54	-0,54	-0,54	-0,43	-0,43	-0,43	-1,3	0,54	0	-0,87	-1,74	5,44	5,44
SPPC Self-Est. (child)	0,46	0,46	0	3,64	0	0	1,22	0,41	1,37	0,46	0,41	-0,41	-0,81	-1,62	0	0	-2,28	-2,73	1,21	1,21	-1,37	-3,64	0,41	0
Emotion regulation																								
BRIEF Emo. Reg. (parent)	0,94	1,88	1,41	-3,76	2,35	1,41	1,41	1,41	0,47	0,47	-0,47	0,47	0,47	0,47	0,47	0,47	3,76	3,76	-0,94	-0,47	2,82	2,82	1,41	1,41
BRIEF Emo. Reg. (teacher)	0	-0,47	2,82	3,29	-0,47	0,94	0,47	1,41	-3,76	-1,41	-0,94	-0,94	-0,47	0,47	1,41	0,94	0,47	-0,94	-0,47	0,47	-0,47	0,47	-4,7	-2,35
Flexibility																								
BRIEF Flexibility (parent)	1,5	4,01	5,51	4,51	2,5	2,5	3	3	-4,01	-4,51	1,5	0,5	-1,5	0,5	1	0,5	2,5	2	0,5	1	0,5	0,5	0,5	0,5
BRIEF Flexibility (teacher)	1	2	3,51	4,51	-2,5	-4,01	2	2,5	0	-2	2	3,51	2	0,50	0	2	0	2	-1	1	-0,5	1	-3	-1,5
CSBQ Ster. Beh. (parent)	-0,82	2,47	-0,82	0	9,91	3,71	-0,69	0	-2,99	0	2,75	0	3,44	4,12	0	4,95	3,71	2,48	-1,24	-1,68	6,19	6,19	-3,71	-1,24
CSBQ Ster. Beh. (teacher)	1,65	0,82	-2,47	0	1,24	-1,24	0	0,69	-1	-3,98	-2,06	0	1,37	1,37	2,48	2,48	0	1,24	-2,48	0	0	2,48	1,24	2,48
CSBQ Res. to Ch. (parent)	0	1,47	0	1,47	-9,5	1,9	2,51	1,25	-4,42	-4,42	0	1,25	0	0	3,8	5,7	5,7	0	1,29	0	0	0	1,9	1,9
CSBQ Res. to Ch. (teacher)	2,95	4,42	5,89	5,89	0	-5,7	0	1,25	0	-1,47	0	0	3,76	3,76	1,9	1,9	0	0	0	-3,8	1,9	0	1,9	1,9
Social behavior																								
CSBQ Social Att. (parent)	-3,82	1,09	0	-0,55	-1,59	-1,59	4,98	2,49	1,53	1,53	0,5	0	1	0,50	-1,06	2,65	5,82	5,82	-1,59	1,06	3,17	5,29	3,7	3,7
CSBQ Social Att. (teacher)	-1,64	-1,09	0,55	0,55	2,65	3,17	-0,5	2,99	2,05	-2,56	-4,7	-7,97	1	0,50	1,06	1,06	0	-0,53	1,06	1,06	0	-1,06	1,06	6,35
CSBQ Social Int. (parent)	1	3,98	-1	-1	3,36	0	4,79	4,79	3,78	0	0	-2,05	0,68	2,05	0,84	1,68	-3,36	2,52	0	-1,68	-2,52	5,04	-4,2	-4,2
CSBQ Social Int. (teacher)	1,99	1	2,99	4,98	0,84	3,36	-1,37	0	4,73	-0,95	6,16	9,59	0,68	0,68	4,2	6,72	0	-4,2	-2,52	-5,04	0,84	4,2	4,2	4,2
CSBQ Social Und. (parent)	-3,57	-0,71	0,71	0	0	-0,65	1,68	1,68	-3,92	-2,35	-5,6	-2,24	-0,56	1,12	0	-1,29	1,29	3,23	0,65	1,29	1,94	5,16	-1,29	1,29
CSBQ Social Und. (teacher)	0	-0,71	0	-0,71	-2,58	-6,46	-2,8	-1,12	0	-0,78	-2,06	0	2,24	2,80	1,29	0	0	-0,65	-0,65	-0,65	-1,29	1,94	1,29	1,29
SPPC Social Acc. (child)	-0,77	-0,77	-1,92	-1,15	-0,38	-1,53	-1,02	-2,04	-1,92	-2,3	1,02	1,7	-0,34	-1,36	0,38	0	-0,77	-0,77	-0,68	-0,68	-1,92	-3,45	0,68	0

Note:

RCI: meaningful change between T0 and T3, and T0 and T4, respectively	BRIEF Beh. Eval.: Behavior Evaluation	CSBQ Ster. Beh.: Stereotype Behavior
strong improvement: $RCI \geq 1.96$	BRIEF Emo. Reg.: Emotion Regulation	CSBQ Res. to Ch.: Resistance to Change
some improvement: $1.65 \leq RCI < 1.96$		CSBQ Social Att.: Social Attitude
stable: $-1.65 \leq RCI < 1.65$	SPPC Beh. Att.: Behavior Attitude	CSBQ Social Int.: Social Interaction
some worsening: $-1.95 \leq RCI < -1.65$	SPPC Self-Est.: Self-Esteem	CSBQ Social Und.: Social Understanding
strong worsening: $RCI < -1.95$	SPPC Social Acc.: Social Acceptance	
Negative RCI-scores for SPPC mean: improvement		

with other issues like anxiety problems, depressed feelings, oversensitivity, and ADHD. Looking at the standards for problematic behavior of the BRIEF, nearly all included children ($n = 11$) showed high scores in severity of problems regarding 'emotion regulation', 'flexibility' and 'behavior evaluation' (T-scores > 60) at the start of the treatment. Also, the CSBQ data show high scores in severity of problems of the child, particularly in the areas of 'social acceptance', 'self-esteem' and 'behavior-attitude' (generally, scores are very high according to the

norms of a child psychiatric population). According to the professional judgments of the art therapists, all children had varied problems with 'self-perception', 'flexibility', 'emotion regulation', and 'social behavior'.

The overview in table 2 shows the degree of improvement according to the RCIs computed between T0-T3 and T0-T4.

Strong improvement is visible in cases 1, 2, 4, 7, 8, 9 and 11 ($n = 7$), specifically at T4 in the areas of 'flexibility' and 'social

Table 3

Overview of OAT-A and EAT-A difference scores by art therapists, indicating a change between T1 and T3, and between T1 and T4 respectively (N = 12 children).

Difference scores: Concepts and Scales	Case 1		Case 2		Case 3		Case 4		Case 5		Case 6		Case 7		Case 8		Case 9		Case 10		Case 11		Case 12	
	Measuring moment																							
	T3	T4	T3	T4	T3	T4	T3	T4	T3	T4	T3	T4	T3	T4	T3	T4	T3	T4	T3	T4	T3	T4	T3	T4
Sense of self																								
OAT (mean)	0	0	0	0	0	0	0	+	+	++	+	0	0	+	+	+	+	+	+	++	+	+	0	0
EAT (mean)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	+	-
Emotion regulation																								
OAT (mean)	0	+	++	++	0	0	+	-	++	++	+	+	0	0	+	+	+	+	+	0	0	+	0	+
EAT (mean)	+	++	+	0	++	0	0	+	++	++	+	+	0	0	+	+	+	+	0	+	0	+	+	0
Flexibility																								
OAT (mean)	0	0	+	+	+	0	0	-	-	-	-	-	+	+	++	++	+	+	+	+	-	0	++	+
EAT (mean)	0	+	+	+	0	++	0	0	-	+	0	-	0	0	-	0	0	0	+	++	0	+	+	0
Social behavior																								
OAT (mean)	++	++	+	+	0	0	0	+	0	+	0	+	0	+	++	++	0	0	0	0	+	+	+	+
EAT (mean)	0	+	0	+	-	0	+	+	+	+	0	+	+	+	+	+	+	+	0	0	0	0	0	+

Note: TX means: T3 Or T4

substantial increase	++	(TX-T1) = 3 Or 4
small(er) increase	+	(TX-T1) = 1 Or 2
n0 difference	0	(TX-T1) = 0
small(er) decrease	-	(TX-T1) = -1 Or -2
substantial decrease	--	(TX-T1) = -3 Or -4

behavior'. A (strong) decline is visible in cases 5, 6 and 10, mainly in the areas of 'flexibility' and 'social behavior'. Cases 3, 5, 6, and 12 show mixed results of strong improvement and (strong) decline spread over different outcome measures. Notably, all cases show items with stable RCI's, and on closer examination, the majority of these 'stable' results appeared to show some improvement.

T3 scores are often equal to T4 scores. In five cases (1, 2, 7, 8, 12) T4 scores are mainly higher than T3 scores. In nearly all cases (except case 2 and 6) the SPPC child scores have improved during the follow up (T4). T4 scores in cases 2, 3, 5, 6 and 10 are less favorable for 'flexibility' and 'social behavior'.

Scores from teachers are often different from those of the parents. Sometimes there is more behavioral change observed in the school situation, sometimes more at home.

Scores of cases with RCIs that indicate strong improvement are accompanied by positive OAT-A scores, especially for an improved 'sense of self' and 'social behavior' (Table 3).

Case 8 improved on all outcomes of the OAT-A. Improvement at T4 regarding 'sense of self' is observed in cases 4, 5, 7, 8, 9, 10, 11 (n = 7), regarding 'emotion regulation' in cases 1, 2, 5, 6, 8, 9, 11, 12 (n = 8), regarding 'flexibility' in cases 1, 2, 3, 8, 9, 10, 12 (n = 7), and regarding 'social behavior' in cases 1, 2, 4, 5, 6, 7, 8, 11, 12 (n = 9). Decline regarding 'flexibility' at T4 is observed in cases 4, 5 and 6.

The EAT-A results are showing a stable behavioral pattern of the art therapists in 'supporting development of sense of self' (n = 11). Increased 'stimulation emotion regulation' by the art therapist at T4 can be reported in cases 1, 4, 5, 6, 8, 9, 10 and 12 (n = 8); increased 'stimulating flexibility' is observed in cases 1, 2, 3, 10, and 11 (n = 5); increased 'supporting social behavior' is seen in cases 1, 2, 4, 5, 6, 7, 8, 9 and 12 (n = 9).

Parents scored the highest average rating for *overall satisfaction* of the treatment: 7.7 (min 6, max 10). The teachers' average was 7.2 (min 5, max 9), and the art therapists' average was 7.1 (min 6, max 8). Three parents commented spontaneously: "If my child was asked to score, this would have been a 10." Art therapists reported that all parents were motivated to join the research. For teachers, it was sometimes hard to find time for scoring the tests, due to a heavy workload. Teachers scored lower when having a problematic relationship with the child.

In all cases (except case 11), parents, teachers and art therapists wrote comments about main improvements in the areas of 'self-esteem' and 'social behavior' at T4. Children were perceived as happier and more stable, and more able to give words to their experiences. Improvements in 'emotion regulation' were also reported in eight cases (1, 3, 4, 5, 8, 9, 10, 12) and improvements in 'flexibility' in four cases (4, 8, 11, 12). In addition, it was reported by parents that 'over-sensitivity' decreased (cases 1 and 3), and that some children showed 'anxieties' (cases 4, 5, 6 and 8).

For parents and art therapists, watching videos was an extra way in which to improve their understanding of their child's behavior. Parents evaluated this as supportive; they were relieved and content to see their child functioning in such a positive way.

A combination of quantitative results and qualitative comments provided a better understanding of scores but also generated questions. Cases with the highest scores seemed to have quite stable situations at home and a good working relationship with the teacher. Problems at home (divorced parents and/or illness of the mother) seemed to have a negative impact for cases 6 and 12 (see BRIEF and CSBQ scores at T3). The same seemed true regarding problems at school (a poor match between child and teacher) for cases 5, 6 and 12. Case 10 was remarkable: comments by parents and the art therapist regarding the less positive development of the child are contrary to the (positive) RCIs. The video at T4 also shows a happy, self-confident and relaxed boy.

'Sense of self' items in the SPPC (scored by the child) are not showing strong improvement in most cases. But 'social acceptance' at

T4 for cases 4, 5, 9 and 11 shows improvement regarding 'self-esteem'. Decreased scores are remarkable because in the qualitative comments from *all participants* it was reported that children are happier and more stable after completing the treatment. OAT-A results supported the outcomes obtained from the SPPC, and in most cases particularly showed improvement in the areas of 'sense of self' and 'emotion regulation'. However, the improvement in the OAT-A 'sense of self' scores (inside the AT-setting) was not always in agreement with the BRIEF and CSBQ results (observations at home and in the classroom).

4. Discussion

Results from our treatment evaluation indicate that 'Images of Self' is partly helpful for children suffering from ASD related problems (Barlow, Nock, & Hersen, 2009). In the majority of children (58%), the expected improvements (according to Fig. 1) were confirmed by the measurements with BRIEF and CSBQ regarding 'flexibility' and 'social behavior'. Positive change in the direction of behavior that is more socially acceptable in the child's social environment was also described in the comments of teachers, parents, children and therapists after terminating the program: the children were more able to communicate, to ask for help, and they showed more self-confidence. In the qualitative comments, it appeared that children were happier and more stable (n = 11) and had an improved 'sense of self' (n = 9) and were better at 'emotion regulation' (n = 8). Involvement of parents and psychoeducation were recognized as valuable building blocks in 'Images of Self' (cf. Van Rooyen & Rietveld, 2017).

Our positive results are confirmed by a very recently published experimental study about effects of AT with children diagnosed with ASD (Koo & Thomas, 2019); five out of nine children in that study improved significantly in cognitive, motor and social skills. A positive development was also assessed in their drawings.

There are some noticeable differences in reasons and aims for referral (Table 1) and treatment outcomes: the main reasons for referral to AT were a 'negative self-image', 'emotion regulation problems' and 'social behavior problems' in the children, while main positive results from the measurements were improvement of children's 'flexibility' and 'social behavior'. All children were referred with 'self-image' problems. To understand the relatively low SPPC child-scores in the 'sense of self' area – which are contrary to the reported positive comments about improvement in 'sense of self' from parents, teachers, and art therapists (n = 11) – it could be hypothesized that children scored their self-image more 'realistically' after treatment. This may indicate that AT had contributed to an improved but not necessarily more positive 'sense of self'.

In one case (10) it was difficult to understand why the scores on BRIEF and CSBQ did not improve, because the video observations and the additional comments of the child, the parents and the teacher were positive. The art therapist presumed that this could be related to a more valid understanding of the ASD related problems, expressed by parents, teacher and the child in standardized instruments.

It is striking that in some cases that seem to benefit from the AT-program (1, 2, 6 and 12) there were substantial problems in the child's personal context (like divorce of the parents, illness of the mother, and problems at school). Contrary to our expectations, this did not seem to influence the scores in a negative direction.

A combination of results in Table 2 (BRIEF, CSBQ and SPPC) and Table 3 (OAT-A and EAT-A) supports insights in behavioral changes at home and at school and in AT. It is plausible to assume that the AT situation offers other opportunities for the child's development than daily life situations. Differences in the results in Tables 2 and 3 indicate differences in the child's behaviors during art-making processes on the one hand and the child's behaviors in daily life and at school on the other hand.

4.1. Strengths and limitations

Strengths. This study concerns a first evaluation of the 'Images of Self' AT program for children diagnosed with ASD. 'Images of Self' seems promising for these children showing problems with 'sense of self', 'emotion regulation', 'flexibility' and 'social behavior'. We believe our study has generated a valuable contribution to scientific evidence by combining results from daily practices about various problems of ASD diagnosed children in AT at home, at school and in different settings (American Psychological Association, 2006; Chambless et al., 1998).

In our study, the repeated single case study methodology facilitated a focus on individual children, thereby using the perspectives of multiple informants (Bartholomew et al., 2012; Spek, 2012; Spreen, 2009, 2013). The Cochrane Collaboration regards outcomes from single case designs as contributing to research evidence if a RCT is not relevant or not (yet) doable for evaluating practice (Higgins & Green, 2011). The approach offered opportunities to explore, develop and map insights in the progress and development of a sample of children in their personal situations on a detailed level (Reeves, Deeks, Higgins, & Wells, 2008; Fein, 2011; Kern Koegel & Brown, 2007; Snir & Regev, 2013; Aalbers, Spreen, Bosveld-Van Haandel, & Bogaerts, 2017).

According to the multiple informants' approach, parents and teachers of the children were involved in the research procedure. From a research perspective, the involvement of parents by watching and discussing videos from AT sessions might also be interpreted as a form of action research at a micro-level (Reason & Bradbury, 2006). From a treatment perspective, the involvement of parents is strongly recommended (Steiner, Koegel, Koegel, & Ence, 2012). Their engagement and the joint forces of therapist, teacher and parents contribute to an improved level of care (cf. Hurt et al., 2017; Schothorst et al., 2009).

Our design enabled comparison of data gathered from different sources. In the majority of cases, results were (rather) consistent; in a minority they were not always. It stimulated us to explore reasons behind these differences and contributed to a deeper understanding of the results of the 'Images of Self' program.

Validity and reliability of the BRIEF, CSBQ and SPPC were satisfactory to good; reliability of the OAT-A and EAT-A was moderate to substantial with trained raters. We therefore believe the results do represent the reality fairly well.

Limitations. There were also some limitations. In this study, we applied a 'convenience sample' which, in combination with the repeated single case approach, limits the opportunity for generalization of the treatment results (Barlow et al., 2009). Exclusion of children with too high levels of fear and resistance for art-making might have created a bias in analysis of the results.

In addition, it was not possible to monitor the referred children for a longer period before treatment with the aim to assess a baseline of their functioning; their referral to AT was surrounded by a sense of urgency and following the children without treating them was not an option. However, a baseline would have enabled us to assess with more precision what the impact was for the child of starting a treatment program like 'Images of Self' (Delsing & Van Yperen, 2017).

Nearly all participating children ($n = 11$) had co-morbidity problems (Table 1). The severity of ASD-related problems scored highly on most items for most cases according to the norms of the BRIEF, CSBQ and SPPC. This may have impacted the results in a negative way. Three children dropped out before the 8th session. They also dropped out of school. Apparently 'Images of Self' did not offer enough support.

Although the treatment program was tailored to the individual clients, it was not possible to show all detailed results in this article. We focused on the behavior of the child and not on the art-making process or the behavior of the art therapist, although aspects of both were

observed with the OAT-A and EAT-A. In a further analysis of our data we will take a closer look at these aspects (see also below).

4.2. Recommendations

An analysis of more detailed results is expected to provide more insight into the opportunities 'Images of Self' can offer children with ASD. For further research, we recommend exploring treatment fidelity (King & Bosworth, 2014). This might support a deeper understanding of the outcomes. For instance, investigating the relationship between what exactly is going on during AT and how this affects the problematic behavior of children may shed further light on interaction processes and working mechanisms (McLeroy, Bibeau, Steckler, & Glanz, 1988; Bartholomew et al., 2001; Koole & Tschacher, 2016). Also, an expanded series of single case studies with micro-analyses of video-stimulated recall of art therapists while treating a child with ASD can contribute to further insight in art-making processes and results. Nearly all treated children had severe ASD related problems. It would be interesting to see what the results would be in a group of children with less severe problems. With the results of the proposed research lines, the 'Images of Self' program may be optimized further, thereby creating a solid base for experimental studies to test the effectiveness of the program (see also Betts et al., 2014; Martin, 2009).

Our results could be useful for the referral policy of professionals in the field because of the positive outcomes that were seen in the children who benefited most from the program. For AT practice, the results of the evaluation of 'Images of Self' program must be seen as a first step in providing insight into the program and its effects. It can also serve as a source of inspiration for those who have the ambition to contribute to a more evidence-based AT practice.

4.3. Conclusion

The promising results after evaluation of the 'Images of Self' AT program for children diagnosed with ASD may encourage parents, schools, child welfare agencies and mental health services to refer to and make more use of AT. Learning from the strengths and limitations of the study and following our recommendations can contribute to further improvements and implementation of the program as next steps.

CRediT authorship contribution statement

Celine Schweizer: Conceptualization, Formal analysis, Investigation, Resources, Data curation, Writing - original draft, Visualization, Project administration. **Erik J. Knorth:** Conceptualization, Writing - review & editing, Supervision. **Tom A. Yperen:** Conceptualization, Writing - review & editing, Supervision. **Marinus Spreen:** Conceptualization, Methodology, Formal analysis, Writing - review & editing, Supervision.

Declaration of Competing Interest

The authors declared that there is no conflict of interest.

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Appendix A. Supplementary material

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.childev.2020.105207>.

References

- Aalbers, S., Spreen, M., Bosveld-van Haandel, L., & Bogaerts, S. (2017). Evaluation of client progress in music therapy: An illustration of an N-of-1 design in individual short-term improvisational music therapy with clients with depression. *Nordic Journal of Music Therapy*, 26(3), 256–271. <https://doi.org/10.1080/08098131.2016.1205649>.
- American Psychiatric Association (2013). *Diagnostic and Statistical Manual of mental disorders* (fifth edition). Arlington, VA: American Psychiatric Publishing.
- American Psychological Association (2006). Evidence-based practice in psychology. APA Presidential task force on evidence-based practice. *The American Psychologist*, 61(4), 271–285. doi:10.1037/0003-066X.61.4.271.
- Barlow, D. H., Nock, M. K., & Hersen, M. (2009). *Single case experimental designs. Strategies for behavior change* (third edition). Boston-Sydney: Pearson Education Inc.
- Bartholomew, L. K., Parcel, G. S., Kok, G., & Gottlieb, N. (2001). *Intervention mapping. Designing theory- and evidence-based health promotion programs*. New York, NY: McGraw-Hill.
- Ben Itzhak, E., Abutbul, S., Bela, H., Shai, T., & Zachor, D. A. (2016). Understanding one's own emotions in cognitively-able preadolescents with autism spectrum disorder. *Journal of Autism and Other Developmental Disorders*, 46(7), 2363–2371. <https://doi.org/10.1007/s10803-016-2769-6>.
- Bergs-Lusebrink, V. (2013). *Imagery and visual expression in psychotherapy*. Heidelberg/Berlin: Springer.
- Betts, D. J., Harmer, R., & Schmulevich, G. (2014). The contributions of art therapy in treatment, assessment, and research with people who have autism spectrum disorders. In V. Hu (Ed.). *Frontiers in autism research: New horizons for diagnosis and treatment* (pp. 627–654). Hackensack, NJ: World Scientific.
- Boer, F., & Van der Gaag, R. J. (2016). Ontwikkeling: Een levenslang proces - de principes [Development: A lifelong process - the principles]. In W. Staal, J. Vorstman, & R. J. van der Gaag (Eds.). *Leerboek ontwikkelingsstoornissen in de levensloop: Een integrale medische en psychologische benadering* (pp. 15–27). Utrecht, the Netherlands: De Tijdstroom.
- Case, C., & Dalley, T. (1990). *Working with children in art therapy*. London/New York: Routledge.
- Chambless, D. L., Baker, M. J., Baucom, D. H., Beutler, L. E., Calhoun, K. S., Crits-Christoph, P., ... Woody, S. R. (1998). Update on empirically validated therapies. II. *The Clinical Psychologist*, 51(1), 3–16.
- Creswell, J. W. (2015). A concise introduction to mixed methods research. Los Angeles / London / New Delhi / Singapore / Washington DC: Sage Publications Inc.
- Delsing, M., & Van Yperen, T. (2017). Wat werkt voor wie? De kracht van N=1 onderzoek [What works for whom? The power of N=1 studies]. In T. A. van Yperen, J. W. Veerman, & B. Bijl (Eds.). *Zicht op effectiviteit. Handboek voor resultaatgerichte ontwikkeling van interventies in de jeugdsector* (pp. 331–356). Rotterdam: Lemniscaat.
- Fein, D. A. (Ed.). (2011). *The neuropsychology of autism*. Oxford / New York: Oxford University Press.
- Feinstein, A. (2010). *A history of autism. Conversations with the pioneers*. London: Wiley-Blackwell.
- Gilroy, A. (2006). *Art therapy, research and evidence-based practice*. London/Thousand Oaks/New Delhi: Sage Publications Ltd.
- Gioia, G. A., Isquith, P. K., Guy, S. C., & Kenworthy, L. (2000). *Behavior Rating Inventory of Executive Function*. Lutz, FL: Psychological Assessment Resources Inc.
- Harter, S. (2012). *Self-Perception Profile for Children: Manual and Questionnaires (Grades 3–8)*. Denver, CO: University of Denver.
- Hartman, C. A., Luteijn, E., Moorlag, H., De Bildt, A., & Minderaa, R. B. (2007). Vragenlijst voor Inventarisatie van Sociaal gedrag van Kinderen (VISK). Handleiding. [Questionnaire for Mapping of Social behavior of Children (VISK). Manual]. Amsterdam: Boom.
- Hartman, C. A., Luteijn, E., Serra, M., & Minderaa, R. (2006). Refinement of the Children's Social Behavior Questionnaire (CSBQ): An instrument that describes the diverse problems seen in milder forms of PDD. *Journal of Autism and Developmental Disorders*, 36(3), 325–342. <https://doi.org/10.1007/s10803-005-0072-z>.
- Higgins, J. P. T., & Green, S. (Eds.). (2011). *Cochrane Handbook for Systematic Reviews of Interventions*. Version 5.1.0. The Cochrane Collaboration. Available from: <https://training.cochrane.org/handbook/current>.
- Hinz, L. D. (2009). *Expressive therapies continuum. A framework for using arts in therapy*. New York/London: Routledge.
- Huizinga, M., & Smids, D. P. (2012). *BRIEF. Vragenlijst executieve functies voor 5- tot 18-jarigen. Handleiding [Behavior Rating Inventory Executive Functions for 5–18 year olds. Manual]*. Amsterdam: Hogrefe Publishers.
- Hurt, L., Langley, K., North, K., Southern, A., Copeland, L., Gillard, J., & Williams, S. (2017). Understanding and improving the care pathway for children with autism. *International Journal of Health Care Quality Assurance*, 32(1), 208–223. <https://doi.org/10.1108/IJHCQA-08-2017-0153>.
- Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology*, 59(1), 12–19. <https://doi.org/10.1037/0022-006X.59.1.12>.
- Kern Koegel, L., & Brown, F. (2007). Autism spectrum disorders: Trends, treatments, and diversity. *Research and Practice for Persons with Severe Disabilities*, 32(2), 87–88. <https://doi.org/10.2511/rpsd.32.2.87>.
- King, H. A., & Bosworth, H. (2014). Treatment fidelity in health services research. In L. M. Hagermoser Sanetti, & T. R. Kratochwill (Eds.). *Treatment integrity: A foundation for evidence-based practice in applied psychology* (pp. 15–33). Washington, DC: American Psychological Association (School Psychology Book Series). <https://doi.org/10.1037/14275-003>.
- Konstantareas, M. M., & Stewart, K. (2006). Affect regulation and temperament in children with Autism Spectrum Disorder. *Journal of Autism and Developmental Disorders*, 36(2), 143–154. <https://doi.org/10.1007/s10803-005-0051-4>.
- Koole, S. L., & Tschacher, W. (2016). Synchrony in psychotherapy: A review and an integrative framework for the therapeutic alliance. *Frontiers in Psychology*, 7, 1–17. Open access. doi:10.3389/fpsyg.2016.00862.
- Lavrakas, P. J. (Ed.). (2008). *Encyclopedia of survey research methods*. Los Angeles / London / New Delhi / Singapore / Washington DC: Sage Publications Inc.
- Malchiodi, C. A. (2003). *Handbook of art therapy*. New York/London: Guilford Press.
- Martin, N. (2009). Art therapy and autism: Overview and recommendations. *Art Therapy*, 26(4), 187–190. <https://doi.org/10.1080/07421656.2009.10129616>.
- McLeroy, K. R., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education Quarterly*, 15(4), 351–377. <https://doi.org/10.1177/109019818801500401>.
- Reason, P., & Bradbury, H. (Eds.). (2006). *Handbook of action research*. London / Thousand Oaks / New Delhi: Sage Publications.
- Reeves, B. C., Deeks, J. D., Higgins, J. P. T., & Wells, G. A. (2008). Including non-randomized studies. In J. P. T. Higgins, & S. Green (Eds.). *Cochrane handbook for systematic reviews of interventions (chapter 13)*. Chichester: John Wiley & Sons Ltd.
- Rubin, J. A. (Ed.). (2001). *Approaches to art therapy: Theory and technique*. New York, NY: Taylor & Francis.
- Samson, A. C., Phillips, J. M., Parker, K. J., Shah, S., Gross, J. J., & Hardan, A. Y. (2013). Emotion dysregulation and the core features of Autism Spectrum Disorder. *Journal of Autism and Developmental Disorders*, 44, 1766–1772. <https://doi.org/10.1007/s10803-013-2022-5>.
- Schothorst, P. F., Van Engeland, H., Van der Gaag, R. J., Minderaa, R. B., Stockmann, A. P. A. M., Westermann, G. M. A., De Bildt, A. A., & Ketelaars, C. E. J. (2009). *Richtlijn diagnostiek en behandeling van Autisme Spectrum Stoornissen [Directions for diagnosis and treatment of Autism Spectrum Disorders]*. Utrecht, the Netherlands: De Tijdstroom.
- Schweizer, C., Haeyen, S., Henskens, B., Rutten-Saris, M., & Visser, H. (2009). *Handboek beeldende therapie. Uit de verf [Handbook art therapy. Painted out]*. Houten, the Netherlands: Bohn Stafleu van Loghum.
- Schweizer, C., Knorth, E. J., & Spreen, M. (2014). Art therapy with children with Autism Spectrum Disorders: A review of clinical case descriptions on 'what works'. *The Arts in Psychotherapy*, 41(5), 577–593. <https://doi.org/10.1016/j.aip.2014.10.009>.
- Schweizer, C., Knorth, E. J., Van Yperen, T. A., & Spreen, M. (2019a). Consensus-based typical elements of art therapy with children with Autism Spectrum Disorders. *International Journal of Art Therapy*, 24(4), 181–191. <https://doi.org/10.1080/17454832.2019.1632364>.
- Schweizer, C., Knorth, E. J., Van Yperen, T. A., & Spreen, M. (2019b). Evaluating art therapeutic processes with children diagnosed with Autism Spectrum Disorders: Development and testing of two observation instruments for evaluating children's and therapists' behavior. *The Arts in Psychotherapy*, 66, 1–9. <https://doi.org/10.1016/j.aip.2019.101578>.
- Schweizer, C., Spreen, M., & Knorth, E. J. (2017). Exploring what works in art therapy with children with autism: Tacit knowledge of art therapists. *Art Therapy*, 34(4), 183–191. <https://doi.org/10.1080/07421656.2017.1392760>.
- Smeijsters, H. (2008). *Handboek creatieve therapie [Handbook on arts therapies]*. Bussum, the Netherlands: Coutinho.
- Snir, S., & Regev, D. (2013). Art therapy for treating children with Autism Spectrum Disorders (ASD): The unique contribution of art materials. *Academic Journal of Creative Art Therapies*, 3(2), 251–260.
- Spek, A. (2012). Diagnostiek bij (jong) volwassenen met een autismespectrumstoornis [Assessment with (young) adults with an autism spectrum disorder]. *Tijdschrift voor Orthopedagogiek*, 51, 377–385.
- Spreen, M. (2009). De meerwaarde van een N=1 benadering (lectoraatsrede) [The surplus of a N=1 approach (inaugural speech)]. In A. Schokker (Ed.). *De systemische N=1: Verkenningen in de praktijk* (pp. 12–27). Leeuwarden, the Netherlands: Stenden University of Applied Sciences Retrieved from: https://www.researchgate.net/publication/308267483_De_Systemische_N1_Enige_praktijkverkenningen_Uitgave_Lectoraat_Social_Work_Arts_Therapies_Stenden_Hogeschool.
- Spreen, M. (2013). Gestapelde N=1 onderzoeken in de vaktherapie: Trending topic (Stacked N=1 studies in expressive therapy: Trending topic). *Tijdschrift voor Vaktherapie*, 3, 19–22.
- Steiner, A. M., Koegel, L. A., Koegel, R. L., & Ence, W. A. (2012). Issues and theoretical constructs regarding parent education for Autism Spectrum Disorders. *Journal of Autism and Other Developmental Disorders*, 42(6), 1218–1227. <https://doi.org/10.1007/s10803-011-1194-0>.
- Stern, D. (1985). *The interpersonal world of the infant. A view from psychoanalysis and developmental psychology*. New York, NY: Basic Books.
- Tashakkori, A., & Teddlie, C. (Eds.). (2010). *Sage handbook of mixed methods in social and behavioral research*. Second edition. Los Angeles / London / New Delhi / Singapore / Washington DC: Sage Publications Inc.
- Van der Doef, P. L. M. (1992). Four features of child psychopathology: An interdisciplinary model of classification and treatment. In J. D. van der Ploeg, P. M. van den Bergh, M. Klomp, E. J. Knorth, & M. Smit (Eds.). *Vulnerable youth in residential care. Part II: Clients, staff and the system* (pp. 19–27). Leuven, Belgium: Garant

- Publishers.
- Van Rooyen, K., & Rietveld, L. (2017). *Jeugd en autisme. Wat werkt? [Youth and autism. What works?]*. Utrecht: Nederlands Jeugdinstituut (NJI).
- Veerman, J. W., & Bijl, B. (2017). Methoden voor het kwantificeren en toetsen van effecten [Methods for quantifying and testing of effects]. In T. A. van Yperen, J. W. Veerman, & B. Bijl (Eds.). *Zicht op effectiviteit. Handboek voor resultaatgerichte ontwikkeling van interventies in de jeugdsector* (pp. 419–438). Rotterdam: Lemniscaat.
- Veerman, J. W., Straathof, M. A. E., Treffers, Ph. D. A., Van den Bergh, B. R. H., & Ten Brink, L. T. (2004). *CBSK Competentie BelevingsSchaal voor Kinderen. Handleiding [CBSK Experience of Competence Scale for Children. Manual]*. Amsterdam: Pearson.
- Visser, H. (2009). Geschiedenis van het beroep [History of the profession]. In C. Schweizer, (Ed.). *Handboek beeldende therapie. Uit de verf* (pp. 30–43). Houten, the Netherlands: Bohn Stafleu van Loghum.
- Waterhouse, L., & Gillberg, C. (2014). Why autism must be taken apart. *Journal of Autism and Developmental Disorders*, 44(7), 1788–1792. <https://doi.org/10.1007/s10803-013-2030-5>.
- Wise, E. A. (2004). Methods for analyzing psychotherapy outcomes: A review of clinical significance, reliable change and recommendations for future directions. *Journal of Personality Assessment*, 82(1), 50–59. https://doi.org/10.1207/s15327752jpa8201_10.