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EFFICACY OF ART THERAPY IN INDIVIDUALS WITH PERSONALITY DISORDERS CLUSTER B/C: A RANDOMIZED CONTROLLED TRIAL

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Multidisciplinary treatment programs for patients with personality disorders (PDs) often include art therapy, but the efficacy of this intervention has hardly been evaluated. The objective of this study is to evaluate the effects of an art therapy intervention on psychological functioning of patients with a PD. In this randomized controlled trial, 57 adult participants diagnosed with a PD cluster B/C (SCID-II) were randomly assigned to either weekly group art therapy (1.5 hours, 10 weeks) or a waiting list group. Outcome measures OQ45, AAQ-II, and SMI were assessed at baseline, at post-test (10 weeks after baseline), and at follow-up (5 weeks after post-test). The results show that art therapy is an effective treatment for PD patients because it not only reduces PD pathology and maladaptive modes but it also helps patients to develop adaptive, positive modes that indicate better mental health and self-regulation.

Multidisciplinary treatment programs for patients with personality disorders (PDs) often include art therapy. Art therapy is an experiential intervention that focuses on individual treatment goals by the therapeutic use of personal expression through art materials (e.g., clay, drawing and painting material, wood, metal). In art therapy, patients examine feelings without words, preverbally and sometimes less consciously (Eisdell, 2005; Haeyen, 2007, 2011; Johns & Karterud, 2004; McMurray & Schwarz-Mirman, 2001; Milia, 1998; Springham, Findlay, Woods, & Harris, 2012). Art materials and art-making appeal to both bodily sensations and emotional responses. Art therapy is often seen as a more direct and less cognitive therapeutic entrance compared with

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verbal therapies for exploring dysfunctional patterns in managing emotions (Bernstein, Arntz, & de Vos, 2007; Haeyen, van Hooren, & Hutschemaekers, 2015; Horn et al. 2015; Levine, Marziali, & Hood, 1997; Linehan & Heard, 1992; Westen, 1991).

Despite the frequent use of art therapy for PD patients, its efficacy has hardly been evaluated. The available studies show promising results, but their number is very small; moreover, most of the studies do not isolate effects of art therapy. For example, in a recent pilot study, patients with PD showed significantly healthier emotional states in art therapy sessions than in verbal psychotherapy (van den Broek, Keulen-de Vos, & Bernstein, 2011). Karterud and Pedersen (2004) have shown that more severely disturbed patients with PD favor the "pretend mode" of art group therapy as a safe method of exploring the mind in the presence of mentalizing self-objects (Bateman & Fonagy, 1999, 2004). The benefit of the art therapy group correlates significantly with the overall benefits (Karterud & Pedersen, 2004). Similar positive results, such as decreased destructive behavior, better global and social functioning, improved distress tolerance, emotional regulation, and a reduction in scores on positive symptoms, have also been found in other small studies, mostly without a control group or using a qualitative design (Eren et al., 2014; Franks & Whitaker, 2007; Gatta, Gallo, & Vianello, 2014; Green, Wehling, & Talsky, 1987; Springham et al., 2012). According to PD patients themselves, art therapy offers corrective (emotional) experiences and promoted such effects as sensory perception, personal integration, emotion awareness and emotion regulation, behavior change and insight, and comprehension (Haeyen, 2007; Haeyen et al., 2015; Rankanen, 2014). Thus, existing studies show beneficial effects, but do not provide decisive evidence. Therefore, in this study, we examine the effects of art therapy on the psychological functioning of PD patients cluster B/C using a randomized controlled trial (RCT). We focus on psychological flexibility, mental health problems, and schema modes because we expect that art therapy could have effects on these aspects.

METHOD

DESIGN

In this RCT, patients with PD were assigned randomly to an experimental group (receiving art therapy) or a control group (waiting list with no intervention). Both groups were assessed at baseline (pre-test), immediately after the intervention at 10 weeks (post-test), and after another 5 weeks (follow-up; 15 weeks after baseline). The trial was registered and approved by the Medical Ethics Committee of Radboud University, Nijmegen, The Netherlands (METC).

PROCEDURE

Participants were recruited from a waiting list of patients targeted for PD treatment in a specialized outpatient treatment unit for personality disorders. Inclusion criteria were: adults (18+ years) with a primary diagnosis of at least

one Axis II Personality Disorder cluster B and/or C or a personality disorder not otherwise specified (American Psychiatric Association, 2013), an IQ > 80, and an adequate mastery of the Dutch language. Exclusion criteria were acute crisis, psychosis, actual and serious suicidal behavior and/or thought, and/or severe brain pathology. The required minimum sample was calculated based on the power of .80 and 5% α level. The expected effect size (d = 1.91) is based on a study by Gratz and Gunderson (2006), who studied individuals with personality disorders with the Acceptance and Action Questionnaire (AAQ-II) in an RCT design. With this expected effect size, we needed a sample size of 25 persons (rounded up to a full number). Perry, Banon, and Ianni (1999) suggested that we could expect a dropout rate of 22%. Based on this percentage, the number of participants had to be 62. Therefore, our sample size had to be 31 per group, instead of 25. For more information, see our research protocol (Haeyen, van Hooren, & Hutschemaekers, 2013).

Patients on the waiting list were invited by letter to participate only if they were expected to fit the inclusion criteria. The letter mentioned, among others, ethical aspects, such as voluntary participation, withdrawal during the research, and time to rethink. One week after the letter was sent, patients were approached by telephone. Patients who agreed to participate signed the informed consent form approved by the Medical Ethics Committee of Radboud University and were assigned randomly to either the experimental or the control group, using dice. Patients in the experimental group started with the treatment, while patients on the waiting list did not receive treatment during the RCT. After a patient agreed to participate, the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II, Dutch version by Weertman, Arntz, & Kerkhofs, 2000) was administered.

PARTICIPANTS

The flowchart (Figure 1) provides an overview of the RCT. In total, 113 patients were selected from the waiting list. However, 39 patients refused to participate or had to be excluded for the following reasons: acute crisis, other treatment started, not the right primary diagnosis, fear of loss of control, rejection of group therapy, and other reasons. The remaining 74 participants filled in the questionnaires at pre-test, 63 patients at post-test, and 57 patients at follow-up. Reasons for dropout at post-test and follow-up were physical problems, mourning, fear of travel, crisis (psychological/drugs/alcohol), work-related, and unknown or no contact.

MEASURES

Psychological flexibility is measured with the AAQ-II (Jacobs, Kleen, de Groot & A-Tjak, 2008). The AAQ-II consists of 10 items (e.g., “I’m afraid of my feelings” or “I am in control of my life”) that are scored on a 7-point scale ranging from 1 (never true) to 7 (always true). The reliability of the Dutch version of the AAQ-II is good (Bond et al., 2011; Fledderus, Oude Voshaar, Ten Klooster, & Bohlmeijer, 2012; Jacobs et al., 2008).

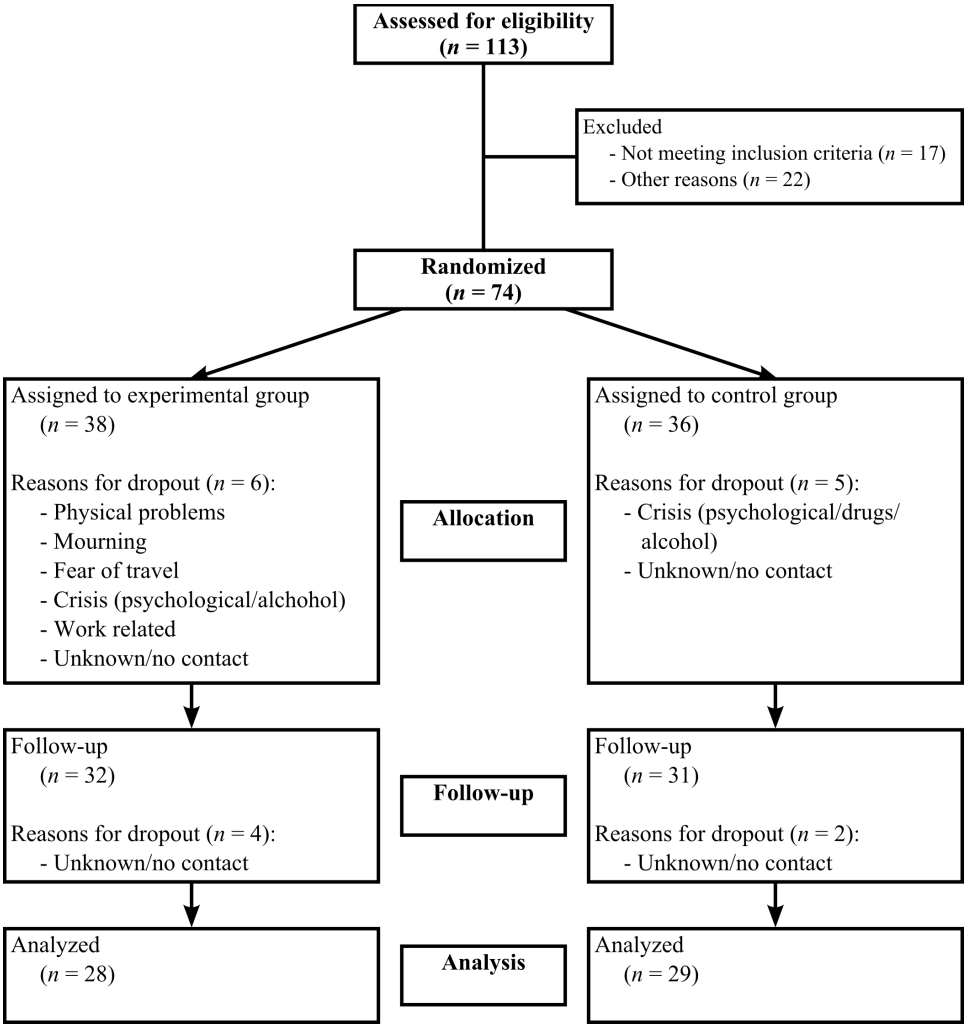

FIGURE 1. Patient flowchart.

Global subjective mental functioning is measured with the Outcome Questionnaire 45 (OQ45; De Jong et al., 2007; Lambert et al., 1996). This questionnaire measures a total score and three subdomains: Symptom distress, Interpersonal relations, and Social role. The OQ45 consists of 45 items (e.g., "I get along well with others" or "I blame myself for things") that are scored on a 5-point scale ranging from 0 (never) to 4 (always). The reliability and validity of the Dutch version are good (De Jong & Nugter, 2004; De Jong et al., 2007).

The schema modes are measured with the Schema Mode Inventory (SMI version 1.1; Young et al., 2007), which are based on schema-focused therapy

for personality problems (Young, Klosko, & Weishaar, 2003). The SMI measures 14 different schema modes. Each mode represents a state of mind that a patient may experience for a shorter or longer period, for example, the vulnerable child, the raging child, the compliant surrenderer, the punitive parent, and the healthy adult. The inventory contains 124 items (e.g., "I often feel alone in the world" or "I feel listened to, understood, and validated") that are scored on a 6-point scale ranging from 0 (never or almost never) to 5 (always). The reliability of the Dutch version is good (Lobbestael, van Vreeswijk, Spinhoven, Schouten, & Arntz, 2010).

THE INTERVENTION: ART THERAPY

We designed a protocol for 10 weekly art therapy sessions (1.5 hours each) in which the content of each session is described. This structured art therapy intervention protocol for patients with personality disorders can be requested from the first author (SH). The intervention protocol consisted of specific art assignments extracted from the workbook *Don't Act Out but Live Through Art Therapy for Personality Disorders* (Haeyen, 2007) and were aimed at improving mindfulness, self-validation, emotion regulation skills, interpersonal functioning and insight, and comprehension. The utilized art assignments consisted of individual, dual, and group components. Each session started with some minutes for tuning in and explaining the experiential assignment and the goals for the session. The sessions ended with discussion and reflection with the therapist together with the whole group, based on the art process and art product. This art therapy protocol made use of theoretical elements of dialectical behavior therapy (DBT) (Linehan, 1996), schema-focused therapy (SFT) (Young, 1994; Young et al., 2003), gestalt art therapy (Rhyne, 1970, 1973a, 1973b), creative problem solving (Osborn, 2011), and the expressive therapies continuum (Hinz, 2009; Schweizer et al., 2009). The protocol was designed for an open group with a maximum of nine participants, meaning that participants could start at different times but always participated in a cycle of 10 sessions. The number of participants for each session varied. Participants who finished the protocol always had 10 sessions in 10 to 13 weeks, and absence from the sessions was 8.57%. A senior art therapist and an art therapy student carried out the protocol.

DATA ANALYSIS

Data were analyzed with IBM SPSS 22 (IBM Corp., 2013). First, we evaluated the randomization by comparing the experimental and control group at pre-test. Second, we evaluated whether dropout was random, by comparing (future) dropouts with completers at pre-test. Finally, we tested whether art therapy is effective, using the general linear model (GLM) repeated measures procedure. In addition to the GLM, we also computed Cohen's *d* effect size to assess the effect of art therapy across time. Following Cohen (1988), effect sizes around .20 are small, effect sizes around .50 are medium, effects sizes around .80 are large, and everything larger than 1.30 is very large.

RESULTS

RANDOMIZATION

We compared demographic and clinical characteristics of the experimental and control groups. The difference in age in the experimental group (M = 36.82, SD = 8.92) and the control group (M = 38.14, SD = 11.97) was not significant, $t(72) = -.54$, $p > .05$. The difference in gender distribution in the experimental group (71.1% women) and the control group (69.4% women) was not significant, $X^2(1, n = 74) = .54$, $p > .05$. The descriptive statistics for the clinical characteristics are presented in Table 1. The main PD diagnoses (in contrast to secondary diagnosis) have the same distribution in both groups, $X^2(6, n = 74) = .76$, $p > .05$. The distribution of cluster B/C personality disorders is the same for both groups, $X^2(5, n = 74) = .23$, $p > .05$. The number of PD diagnoses that patients have (one versus two or more) is not significantly different in both groups, $X^2(2, n = 74) = .84$, $p > .05$. And finally, the difference in OQ45 Total scores was not significant, $t(72) = 2.10$, $p > .01$. There are no significant differences between the experimental and control groups, which is an indication that the randomization has worked.

DROPOUT

Dropout must be analyzed to make sure that the results of the GLM repeated measures are not an artifact of a special type of patient quitting the intervention. There were 17 (23%) patients who quit and 57 (77%) who completed the intervention. We compared future dropouts with completers using observations from the pre-test. Dropouts did not significantly differ from completers on age, dropouts M = 40.35, SD = 10.03; completers M = 36.6, SD = 10.52, $t(72) = 1.31$, $p > .05$; gender, dropouts 58.8% women, completers 73.7%

TABLE 1. Descriptive Statistics for Clinical Characteristics at Pre-test

	Experimental group (n = 38), %	Control group (n = 36), %
Paranoid personality disorder	2.6	2.8
Narcissistic personality disorder	2.6	0
Borderline personality disorder	36.8	27.8
Obsessive compulsive personality disorder	10.5	8.3
Dependent personality disorder	13.2	8.3
Avoidant personality disorder	15.8	25.0
Unspecified personality disorder	18.4	27.8
Cluster B	36.8	27.8
Cluster C	23.7	36.1
Cluster not otherwise specified	18.4	27.6
1 personality disorder	71.1	75.0
2 or more personality disorders	23.7	22.2

women, $X^2(1, n = 74) = 1.38$, $p > .05$; number of PD diagnoses, dropouts 76.5% 1 PD, 17.6% 2 PDs, completers 71.9% 1 PD, 24.6% 2 PDs, $X^2(2, n = 74) = .49$, $p > .05$; the distribution of cluster B/C personality disorders, dropouts 41.2% B, 23.5% C, 17.6% Nos, completers 29.8% B, 31.6% C, 24.6% Nos, $X^2(5, n = 74) = 2.92$, $p > .05$; and the OQ45 Total score, dropouts $M = 84.41$, $SD = 16.73$, completers $M = 86.33$, $SD = 22.46$, $t(72) = .33$, $p > .05$. These results indicate that dropout can be considered random and thus will not bias the conclusions.

REPEATED MEASURES ANALYSES

We analyzed the following outcome measures, AAQ-II, OQ45, and the SMI, as well as three subdimensions of the OQ45 and 14 modes of the SMI. The means and standard deviations of all outcomes are presented in Table 2. Overall, the change in the means indicates that patients improve during treatment; however, patients on the waiting list deteriorate over time on most outcomes.

TABLE 2. Means and Standard Deviation (in Parentheses) of Outcomes Across Time

	Experimental group (n = 28)			Control group (n = 29)		
	Pre-test	Post-test	Follow-up	Pre-test	Post-test	Follow-up
AAQ-II						
Total	30.5 (9.5)	41.61 (4.8)	40.57 (7.34)	35.4 (8.45)	43.52 (3.81)	30.93 (7.16)
OQ45						
Total	91.52 (23.61)	67.74 (18.39)	67.52 (19.61)	81.86 (20.99)	90.34 (17.96)	93.28 (18.11)
Symptom Distress	54.36 (16.13)	38.86 (12.49)	38.54 (13.38)	50.45 (13.98)	54.79 (13.35)	56.27 (13.33)
Interpersonal Relations	20.67 (6.72)	15.85 (4.78)	15.93 (5.09)	19.03 (6.61)	21.48 (5.12)	22.59 (5.55)
Social Role	17.61 (3.84)	13.68 (3.84)	13.75 (3.80)	14.07 (5.48)	15.93 (5.06)	16.24 (5.01)
SMI maladaptive modes						
Vulnerable Child	3.78 (.98)	2.81 (.79)	2.85 (.85)	3.20 (.96)	3.37 (.94)	3.45 (.93)
Angry Child	3.25 (.82)	2.68 (.64)	2.71 (.62)	2.93 (1.09)	3.18 (1.06)	3.21 (1.07)
Enraged Child	1.84 (.65)	1.48 (.51)	1.48 (.51)	1.59 (.53)	1.75 (.70)	1.77 (.71)
Impulsive Child	3.06 (.85)	2.15 (.58)	2.12 (.55)	2.45 (.72)	2.72 (.71)	2.85 (.75)
Undisciplined Child	3.13 (.89)	2.92 (.86)	2.90 (.82)	2.86 (.80)	2.97 (.77)	3.02 (.74)
Compliant Surrender	3.57 (.75)	2.93 (.72)	2.93 (.71)	3.14 (.97)	3.47 (.86)	3.56 (.90)
Detached Protector	3.07 (.85)	2.21 (.63)	2.24 (.61)	2.83 (.90)	3.06 (.97)	3.18 (.97)
Detached Self-Soother	3.62 (.94)	2.95 (.70)	2.97 (.72)	3.17 (.97)	3.52 (1.00)	3.60 (.99)
Self-Aggrandizer	2.89 (.76)	2.42 (.66)	2.37 (.63)	2.39 (.66)	2.57 (.77)	2.64 (.75)
Bully And Attack	1.99 (.65)	1.77 (.42)	1.75 (.41)	1.77 (.51)	1.91 (.52)	1.91 (.52)
Punitive Parent	2.81 (.84)	2.08 (.61)	2.07 (.63)	2.48 (.77)	2.70 (.78)	2.77 (.83)
Demanding parent	4.19 (.89)	3.63 (.78)	3.61 (.78)	3.46 (.86)	3.72 (.85)	3.75 (.81)
SMI adaptive modes						
Happy Child	2.75 (.84)	3.64 (.67)	3.63 (.69)	3.07 (.93)	2.78 (.77)	2.69 (.73)
Healthy Adult	3.61 (.65)	4.33 (.57)	4.29 (.58)	3.77 (.80)	3.47 (.67)	3.39 (.67)

To test whether there is an effect of art therapy, we analyzed the data with GLM repeated measures. Time is the within-subject variable (pre-test, post-test, follow-up) and group is the between-subject variable (art therapy, waiting list). The results of the GLM are presented in Table 3; degrees of freedom were adjusted if the Mauchly's test indicated that the assumption of sphericity had been violated. Table 3 also contains the standardized mean differences (SMDs); however, they were computed in a separate analysis. The effect of time is significant for AAQ-II-Total score, $F(1.2, 64.4) = 11.09$, $p < .001$; OQ45-Total score, $F(1.3, 69.2) = 12.18$, $p < .001$, OQ45-Symptom Distress, $F(1.3, 71.4) = 18.88$, $p < .001$; OQ45-Social Role, $F(1.6, 86.2) = 3.63$, $p < .05$; SMI-Vulnerable Child, $F(1.3, 76.8) = 30.25$, $p < .001$; SMI-Angry Child, $F(1.3, 69.4) = 6.50$, $p < .05$; SMI-Enraged Child, $F(1.1, 61.0) = 5.20$, $p < .05$; SMI-Impulsive Child, $F(1.2, 66.4) = 16.71$, $p < .001$; SMI-Compliant Surrender, $F(1.2, 64.0) = 3.78$, $p < .05$; SMI-Detached Protector, $F(1.2, 64.6) = 20.39$, $p < .001$; SMI-Self-Aggrandizer, $F(1.2, 64.2) = 6.93$, $p < .01$; SMI-Punitive Parent, $F(1.2, 64.2) = 16.12$, $p < .001$; SMI-Demanding Parent, $F(1.2, 63.6) = 4.44$, $p < .05$; SMI-Happy Child, $F(1.2, 64.1) = 18.09$, $p < .001$; and SMI-Healthy Adult, $F(1.5, 80.6) = 11.17$, $p < .001$. The overall effect of group is not as omnipresent; there is a significant effect of group on the AAQ-II-Total, $F(1, 55) = 5.35$, $p < .05$; OQ45-Total, $F(1, 54) = 6.78$, $p < .05$; OQ45-Symptom Distress, $F(1, 55) = 8.15$, $p < .01$; OQ45-Interpersonal Relations, $F(1, 55) = 6.38$, $p < .05$; SMI-Detached Protector, $F(1, 55) = 5.92$, $p < .05$; SMI-Happy Child, $F(1, 55) = 6.26$, $p < .05$; and SMI-Healthy Adult, $F(1, 55) = 10.18$, $p < .01$. We are interested mostly, however, in the effect of the interaction between time and group. The effect of time and group is significant for all outcome measures: AAQ-II, $F(1.2) = 71.63$, $p < .001$; OQ45-Total, $F(1.3) = 70.22$, $p < .001$; OQ45-Symptom Distress, $F(1.3) = 72.42$, $p < .001$; OQ45-Interpersonal Relations, $F(1.2) = 41.50$, $p < .001$; OQ45-Social Role, $F(1.6) = 34.97$, $p < .001$; SMI-Vulnerable Child, $F(1.3) = 74.90$, $p < .001$; SMI-Angry Child, $F(1.3) = 47.18$, $p < .001$; SMI-Enraged Child, $F(1.1) = 39.41$, $p < .001$; SMI-Impulsive Child, $F(1.2) = 77.80$, $p < .001$; SMI-Undisciplined Child, $F(1.4) = 8.98$, $p < .01$; SMI-Compliant Surrender, $F(1.2) = 53.04$, $p < .001$; SMI-Detached Protector, $F(1.2, 64.6) = 81.34$, $p < .001$; SMI-Detached Self-Soother, $F(1.2) = 41.47$, $p < .001$; SMI-Self-Aggrandizer, $F(1.2) = 43.76$, $p < .001$; SMI-Bully and Attack, $F(1.2) = 23.54$, $p < .001$; SMI-Punitive Parent, $F(1.2, 64.2) = 67.60$, $p < .001$; SMI-Demanding Parent, $F(1.2) = 37.66$, $p < .001$; SMI-Happy Child, $F(1.2) = 89.82$, $p < .001$; and SMI-Healthy Adult, $F(1.5) = 85.46$, $p < .001$. To understand the interaction, we inspect the development of the means of the outcome variables in Table 2. The patients in the experimental group improve from pre-test to post-test, and they remain stable from post-test to follow-up. This pattern is about the same for all outcome variables. For the patients in the control group, the pattern is not the same for all outcome variables: sometimes patients deteriorate between pre-test and post-test, and sometimes they improve. Between post-test and follow-up, the pattern is again the same for all patients: they deteriorate. If we ignore the post-test to simplify the interpretation, then patients in the experimental group improve over time, while patients in the control group deteriorate.

EFFECT SIZES

To get an idea about the magnitude of the effect of the art therapy across time, we computed the change of the effect size (Δd) between the effect size at post-test and the effect size at pre-test. All effect sizes are SMDs (Lipsey & Wilson, 2001). Table 3 shows all the effect sizes between the experimental and control groups at pre-test as well as at post-test. Cohen's *d* at pre-test should be small for all outcome variables because of the randomization. However, the patients in the control group have better scores than patients in the experimental group. At post-test, the situation is reversed; moreover, for all outcome variables, the effects are larger. The change in Cohen's *d*, an indication of the effect of art therapy across time, is small to medium for the following outcome variables: AAQ-II-Total (Δd = .11), SMI-Undisciplined Child (Δd = –.38) and SMI-Bully and Attack (Δd = –.68). The change in Cohen's *d* is very large for the OQ45-Total score (Δd = –1.67) and its subscales OQ45-Symptom Distress (Δd = –1.94), OQ45-Interpersonal Relations (Δd = –1.39) and OQ45-Social Role (Δd = –1.25). The effect of art therapy on the adaptive schema modes is large to very large: SMI-Vulnerable Child (Δd = –1.24), SMI-Angry Child (Δd = –.90), SMI-Enraged Child (Δd = –.86), SMI-Impulsive Child (Δd = –1.66), SMI-Compliant Surrender (Δd = –1.18), SMI-Detached Protector (Δd = –1.31), SMI-Detached Self-Soother (Δd = –.82), SMI-Self-Aggrandizer (Δd = –.91), SMI-Punitive Parent (Δd = –1.29), and SMI-Demanding Parent (Δd = –.94). The effect of art therapy on the maladaptive modes is, as expected, in the opposite direction: SMI-Happy Child mode (Δd = 1.55) and SMI-Healthy Adult (Δd = 1.60).

DISCUSSION

This efficacy trial has shown that art therapy effectively reduces pathology of personality disorders cluster B/C and general mental health symptomatology. The presence of early maladaptive schema modes typical for personality disorders has decreased (less impulsivity, detachment, vulnerability, and punitive behavior), and adaptive modes have strengthened (pleasant feeling and self-regulation). In addition, unpleasant inner experiences, such as thoughts, feelings, and physical sensations, are more easily accepted.

To what degree are our results in line with other comparable outcome studies? An unambiguous answer is difficult, because studies differ concerning patient population, kind of treatment, and design. We first compare our results with studies with exactly the same target group, that is, the same specific population of cluster B/C patients and comparable outpatient psychological treatment programs, with the same duration (3 months) and the same intensity of weekly sessions. Horn and colleagues (2015) found medium effect sizes on general psychiatric symptomatology with short-term inpatient psychotherapy based on transactional analysis, compared with a control group (nonrandomized) consisting of "other psychotherapies." van Vreeswijk, Spinhoven, Eurelings-Bontekoe, & Broersen (2014) studied a short-term group schema

TABLE 3. Results of the GLM Repeated Measures Analyses and Cohen's *d* Effect Sizes

	Time		Time × Group		Group		Cohen's *d*[a]		
	F	(df1, df2)	*F*	(df1, df2)	*F*	(df1, df2)	*d* (95% CI). Pre-test	*d* (95% CI) Post-test	Δ*d*
AAQ-II									
Total Score[b]	11.09***	(1.2, 64.4)	71.63***	(1.2, 64.4)	5.35*	(1, 55)	–.55 (–1.07, –.02)	–0.44 (–.97, .08)	.11
OQ45									
Total Scorec	12.18***	(1.3, 69.2)	70.22***	(1.3, 69.2)	6.78*	(1, 54)	.43 (–.90, .96)	–1.24 (–1.81, –.68)	–1.67
Symptom Distress[c]	18.88***	(1.3, 71.4)	72.42***	(1.3, 71.4)	8.15**	(1, 55)	.26 (–.26, .78)	–1.23 (–1.80, –.67)	–1.94
Interpersonal Relations[c]	2.84	(1.2, 67.1)	41.50***	(1.2, 67.1)	6.38*	(1, 55)	.25 (–.28, .77)	–1.14 (–1.70, –.58)	–1.39
Social Role[b]	3.63*	(1.6, 86.2)	34.97***	(1.6, 86.2)	.13	(1, 55)	.75 (.21, 1.28)	–0.50 (–1.03, .03)	–1.25
SMI 1 maladaptive modes									
Vulnerable Child[c]	30.25***	(1.3, 76.8)	74.90***	(1.3, 76.8)	.69	(1, 55)	.60 (.07, 1.13)	–0.64 (–1.18, –.11)	–1.24
Angry Child[c]	6.50*	(1.3, 69.4)	47.18***	(1.3, 69.4)	.94	(1, 55)	.33(–.19, .85)	–0.57 (–1.10, –.04)	–.90
Enraged Child[c]	5.20*	(1.1, 61.0)	39.41***	(1.1, 61.0)	.44	(1, 55)	.42 (–.10, .95)	–0.44 (–.97, .09)	–.86
Impulsive Child[c]	16.71***	(1.2, 66.4)	77.80***	(1.2, 66.4)	1.80	(1, 55)	.78 (.24, 1.31)	–0.88 (–1.42, –.33)	–1.66
Undisciplined Child[c]	.51	(1.4, 75.7)	8.98**	(1.4, 75.7)	.03	(1, 55)	.32 (–.20, .84)	–0.06 (–.58, .46)	–.38
Compliant Surrender[c]	3.78*	(1.2, 64.0)	53.04***	(1.2, 64.0)	1.41	(1, 55)	.50 (–.03, 1.02)	–0.68 (–1.21, –.15)	–1.18
Detached Protector[c]	20.39***	(1.2, 64.6)	81.34***	(1.2, 64.6)	5.92*	(1, 55)	.27 (–.25, .80)	–1.04 (–1.59, –.48)	–1.31
Detached Self-Soother[c]	3.10	(1.2, 63.9)	41.47***	(1.2, 63.9)	1.25	(1, 55)	.47 (–.06, 1.00)	–0.35 (–.87, .18)	–.82
Self-Aggrandizer [c]	6.93**	(1.2, 64.2)	43.76***	(1.2, 64.2)	.02	(1, 55)	.70 (.17, 1.24)	–0.21 (–.73, .31)	–.91
Bully And Attack[c]	1.63	(1.2, 65.9)	23.54***	(1.2, 65.9)	.06	(1, 55)	.38 (–.15, .90)	–0.30 (–.82, .23)	–.68
Punitive Parentc	16.12***	(1.2, 64.2)	67.60***	(1.2, 64.2)	2.98	(1, 55)	.41 (–.12, .94)	–0.88 (–1.43, –.34)	–1.29
Demanding Parent[c]	4.44*	(1.2, 63.6)	37.66***	(1.2, 63.6)	.59	(1, 55)	.83 (.29, 1.38)	–0.11 (–.63, .41)	–.94
SMI 1 adaptive modes									
Happy Child[c]	18.09***	(1.2, 64.1)	89.82***(a)	(1.2, 64.1)	6.26*	(1, 55)	–.36 (–.88, .16)	1.19 (.63, 1.75)	1.55
Healthy Adult[c]	11.17***	(1.5, 80.6)	85.46***(a)	(1.5, 80.6)	10.18**	(1, 55)	–.22 (–.74, .30)	1.38 (.80, 1.96)	1.60

[a]A standardized mean difference (SMD) effect size, computed with David Wilson's web-based effect-size calculator (https://www.campbellcollaboration.org/escalc/html/EffectSizeCalculator-Formulas.php). [b]Sphericity rejected, used Huynh–Feldt correction. [c]Sphericity rejected, used Greenhouse–Geisser correction. *$p < .0$. **$p < .01$. ***$p < .001$.

cognitive behavioral therapy, and Renner and colleagues (2013) studied a short-term schema cognitive behavioral group therapy; both report medium to large effect sizes using a pre–post-test design with only an intervention group (no control). In comparison with these studies, our results are at least equal but most of the time even higher. This is remarkable, given our more demanding design. In our second comparison group, studies are included with the same RCT design but a more restricted group of patients with borderline personality disorder (BPD). Stoffers and colleagues (2012) report two RCTs fitting our criteria (3 months, weekly sessions), the first on DBT skills training (Soler et al., 2009) and the second on emotion regulation group training (Gratz & Gunderson, 2006), both with "treatment as usual" (TAU) as the control group. In these studies, the effect sizes on total BPD symptom severity are large to very large. Finally, a third study, an RCT with psychoeducation compared with a waiting list condition (Zanarini & Frankenburg, 2008), showed only small to medium effects. Taken together, we conclude that our findings are worthwhile and underpin the potential of art therapy as an effective treatment option (e.g., van den Broek et al., 2011).

How can we explain these remarkable effects of art therapy? Literature provides us with a number of possible explanations of the value of art therapy. Frequently mentioned is its experiential character and its focus on emotions (positive as well as negative). In art therapy, the experience of art materials and art-making appeals to bodily sensations and emotional responses, using imagination (Haeyen et al., 2015; Pénzes, van Hooren, Dokter, Smeijsters, & Hutschemaekers, 2014; Schweizer et al., 2009). The experience takes place in the here-and-now, which strengthens awareness. The results of the present study show that experiential and emotional processes are addressed in art therapy with effects on a wide range of schema modes and on reduction of the phenomenon "experiential avoidance" (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). The focus on emotions (positive as well as negative) can be especially suitable for PD patients, because they tend to avoid emotional experiences and may have missed experiencing joy and play as key ingredients of their childhood (Lockwood & Shaw, 2012). Further, art therapy is developed as a bottom-up strategy for emotion regulation, starting with experiences through actions using mental images and then aimed at behavior change and insight. In contrast, verbal therapy often has a complementary top-down strategy, by starting with cognitions to get a grip on emotional experiences. Mental images, increasingly regarded as central in the development and maintenance of different psychological disorders, could be targeted using experiential strategies to change negative emotions related to aversive childhood memories (Brewin, Gregory, Lipton, & Burgess, 2010).

Art therapy has a possible differential effect in multidisciplinary treatment programs. The argument for the use of art therapy or other experiential therapies in multidisciplinary programs is often that these therapies are perceived as better entrances for many patients to explore their dysfunctional patterns compared with the more cognitive verbal therapies (Horn et al., 2015). In most current multidisciplinary treatment programs for PD patients, verbal therapies and art therapies are integrated and based on recent psychotherapeutic PD intervention theories but without an explicit causal evidence base (Haeyen,

2007, 2015; Heckwolf, Bergland, & Mouratidis, 2014; Horn et al., 2015; Springham et al., 2012; van den Broek et al., 2011; van Vreeswijk, Broersen, Bloo, & Haeyen, 2012; Verfaille, 2016). Nowadays, experiential techniques are also more incorporated into cognitive behavioral therapies (e.g., schema therapy, acceptance and commitment therapy, and compassion-focused therapy) but mainly in a supplementary way to a base of verbal interventions, while in art therapy, these experiential techniques are central. According to Arntz (2011, 2012), these techniques hold promise for modifying mental images but still need to undergo systematic empirical evaluation to test their effectiveness and to unravel underlying mechanisms of change.

Given the large effect sizes, it is important to keep in mind the limitations of this study. An important limitation could be the nature of the control. First, the control group was a waiting list group receiving no intervention. Therefore, effects in the experimental group could be due to non-specific therapeutic factors. Second, patients on the waiting list had to wait quite a long time (between 5 and 7 months), and this may have affected the decrease of outcomes over time in this group. However, this is the first RCT that we know of on art therapy in patients with PD; thus, in the design we used, we wanted to examine efficacy of this intervention with specific as well as non-specific factors within. It would be an interesting next step to compare TAU with and without art therapy. Despite this limitation, to our knowledge, this is the first study to report on the results of art therapy in terms of improvement by using measures of symptom severity and demographic and clinical characteristics of patients, and the findings are largely consistent with the studies referred to earlier on short-term treatments for this population.

A second limitation is that the group of respondents may have been selective in terms of motivation/willingness and treatment access and that this might have colored the results to some extent. Generalization to the wider population of personality-disordered patients should be handled with caution. RCTs are generally criticized for their limited external validity because of the strictly controlled or experimental circumstances (e.g., Hodgson, Bushe, & Hunter, 2007), and for this reason, they can overestimate an intervention's effect when implemented in clinical practice (Singal, Higgins, & Waljee, 2014). Hence, we recommend effectiveness research on art therapy in everyday clinical practice to investigate whether the effects we found can be confirmed. This could be complicated by the complexity of isolating art therapy results. A third limitation is that we used a rather short follow-up period (5 weeks post intervention) due to logistic and ethical reasons; a longer follow-up would imply longer waiting time to start regular treatment.

A strength of the present study is that it is carried out among the intended target group. Demographic analysis showed that there were no significant differences between basic aspects of participants who dropped out and those who completed the protocol. Therefore, we can assume that the results were not interfered with by differences between the two groups.

This study showed some overall effects for PD patients cluster B/C, but it would be interesting to distinguish which patients would benefit most. Future research should investigate which patients this treatment form best complements or for which it is most needed. Based on the results of the SMI

in the present study, PD patients who are vulnerable, emotionally detached, and self-critical could possibly benefit most.

CONCLUSION

Art therapy is effective for PD patients cluster B/C. Art therapy not only decreases symptoms of psychopathology of PD, maladaptive schema modes, and experiential avoidance but also increases mental health functioning on positive measures of acceptance and adaptive schema modes; this means a more optimal personal performance, increased autonomy, and self-acceptance. Compared with studies on other interventions with the same duration and intensity on the same population, we found effect sizes in the same or higher range in the present study on this art therapy intervention. The value of art therapy could be the experiential character, the here-and-now awareness, and the addressed emotional process (positive as well as negative). There is still a considerable need for research on art therapy. It would be interesting to replicate and validate current findings in everyday clinical practice and to examine which patients would benefit most from art therapy.

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