Predictors of treatment outcome of Inpatient Psychotherapy for Adolescents with personality pathology

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ABSTRACT

Little is known about the effectiveness of treatment programmes for personality disordered adolescents. This study investigates the treatment outcome of Inpatient Psychotherapy for Adolescents (IPA), i.e. an intensive programme for treatment refractory adolescents with personality pathology. In addition, this study examines predictors of treatment outcome. One hundred and nine adolescents admitted for treatment of their personality problems were followed up during their stay in IPA. Axis I and Axis II disorders were measured using semi-structured interviews, and the adolescents completed several questionnaires to measure symptom severity (global indices of distress), personality styles and functioning, and quality of life at both start and 12 months after start of treatment. Patients showed improvement in level of symptom severity, personality functioning and quality of life (d ranging from 0.49 to 0.97). As for level of symptom severity, 29% of the adolescents moved into a normative range of symptom severity. Higher levels of self-criticism significantly predicted poorer outcome in terms of symptom severity. Type of personality disorder did not predict treatment outcome. IPA is a potentially effective treatment programme for (a subgroup of) treatment refractory adolescents with personality pathology. Copyright © 2013 John Wiley & Sons, Ltd.

Introduction

According to DSM-IV-TR (American Psychiatric Association, 2000), personality disorders (PDs) can be diagnosed in adolescents, but reports on effective treatment are scarce. The absence of research into effective treatment may reflect the hesitation of clinicians to diagnose PDs in this age group (Allertz & van Voorst, 2007). Nevertheless, recent studies have shown that PDs are common in adolescents (see, for example, Feenstra, Busschbach, Verheul, & Hutsebaut, 2011; Grilo et al., 1998; Johnson et al., 2000; Westen, Shedler, Durett, Glass, & Martens, 2003). An effective treatment for this group of patients is warranted because adolescents with PDs are at a greater risk for having a broad range of problems than adolescents without PDs (see, for example, Braun-Scharm, 1996; Johnson et al., 2005; Kasen et al., 2007; Lavan & Johnson, 2002; Serman, Johnson, Geller, Kanost,

& Zacharapoulou, 2002; Westen et al., 2003). Furthermore, these adolescents also have a greater risk of developing problems in adulthood (Chen, Cohen, Kasen, & Johnson, 2006; Daley et al., 1999; Daley, Rizzo, & Gunderson, 2006; Johnson, Chen, & Cohen, 2004; Johnson et al., 2005; Johnson et al., 1999; Levy et al., 1999). Finally, PDs in adolescents are associated with low quality of life and high medical costs (Feenstra et al., 2012), as is true for adults (Soeteman, Hakkaart-van Roijen, Verheul, & Busschbach, 2008; Soeteman, Verheul, & Busschbach, 2008). Thus, although the recognition of PD in adolescents is controversial, patients with such diagnoses seem to be characterized by a high need of treatment.

In a randomized controlled trial, Chanen et al. (2008) compared the effectiveness of cognitive analytic therapy (CAT) with manualized good clinical care in adolescents with symptoms of borderline personality disorder (BPD). They found a reduction of externalizing psychopathology in both groups, with some evidence that patients in the CAT group improved more rapidly. Schuppert et al. (2012) tested the effectiveness of an Emotion Regulation Training (ERT) specifically developed for adolescents with symptoms of BPD. Subjects were assigned to ERT plus Treatment As Usual (TAU) or TAU alone. In both treatment conditions, borderline symptoms reduced equally, and no significant differences were found between the two groups. In a literature review, Backer, Miller, and Van den Bosch (2009) identified seven (non-randomized) studies investigating the effectiveness of Dialectical Behaviour Therapy (DBT) in adolescents. Two of these studies confirmed the effectiveness of DBT in adolescents with symptoms of BPD: Rathus and Miller (2002) investigated the effectiveness of DBT by comparing DBT with TAU and found larger effects in the DBT group; Fleischhaker, Munz, Böhme, Sixt, and Schulz (2006) studied the effectiveness of DBT in a pre/post-test design and found that symptoms decreased during treatment. However, all these studies investigated outpatient treatment programmes. The current study is the first to investigate Inpatient

Psychotherapy for Adolescents (IPA). The choice for inpatient psychotherapy in PDs is empirically supported in adults (Bartak et al., 2010; 2011; Chiesa, Fonagy, Holmes, & Drahorad, 2004; Gabbard et al., 2000; Vermote et al., 2009) and mentioned in the Dutch Multidisciplinary Guideline for Personality Disorders (Landelijke Stuurgroep Multidisciplinaire Richtlijnontwikkeling in de GGZ, 2008).

An additional issue is to explore for whom IPA is most effective. This is relevant not only from a patient perspective but also from a societal perspective as inpatient treatments are expensive. On the basis of previous research and literature, we choose to include two theoretical variables that might predict treatment outcome for this type of inpatient treatment. First, we would expect patients high on dependency to benefit more from IPA and therefore show better outcomes than patients high on self-criticism, as the inpatient setting places much emphasis on the therapeutic relation. This would be in line with the argument of Blatt and colleagues (Blatt & Felsen, 1993) that patients with higher levels of dependency (who are more pre-occupied with establishing and maintaining interpersonal relatedness) respond more effectively to a treatment programme in which there is much room for personal interaction with the therapist. Patients with higher levels of self-criticism (patients who are pre-occupied with establishing and maintaining a consolidated and realistic sense of self), on the other hand, may have more difficulties in profiting from the therapeutic relationship, and the rules and procedures inherent to an inpatient setting might conflict with their striving for autonomy. Type of PD might be another predictor of treatment outcome. Although a study by Bartak et al. (2010) provides evidence for the effectiveness of inpatient treatment for cluster B as well as cluster C PDs, results were more convincing for cluster C PDs. The interpretation of this finding might be twofold. On the one hand, an inpatient setting might be especially effective for cluster C patients as it provides major opportunities to change the avoidant,

dependent or obsessive–compulsive patterns and experiment with new patterns of relating, behaving and experiencing within a relatively safe environment (see, for example, Muste & Thunnissen, 2003). On the other hand, an inpatient setting might be iatrogenic for severe cluster B PDs, as the high intensity and dosage might over arouse the attachment system of patient with BPD (Bateman & Fonagy, 2010). Therefore, one might assume that an inpatient setting might be especially beneficial for adolescents with cluster C personality pathology.

This study aims to investigate the treatment outcome of IPA, i.e. an intensive, 12-month programme for treatment refractory adolescents with personality pathology. In addition, this study examines two potential predictors of treatment outcome.

Method

Participants

From June 2006 until 27 January 2009, 109 adolescents were admitted to the IPA unit of the youth department of De Viersprong and enrolled in this study. De Viersprong is a highly specialized mental health care institute in the Netherlands offering outpatient, day hospital and inpatient psychotherapy for adolescents and adults with severe and complex personality pathology. In general, patients are referred to de Viersprong from all over the country because of complex pathology that appears to be refractory to outpatient treatment (mainly aimed at improving Axis I pathology). All patients underwent a standard assessment as part of the intake procedure, including semi-structured interviews to measure Axis I and Axis II disorders. Interviewers were master-level psychologists, who were trained thoroughly by the first author (Anoek Weertman) of the Dutch version of the Structured Clinical Interview for DSM-IV Axis II disorders (SCID-II). The interviewers received two-weekly booster sessions to avoid drifting from the interview guidelines. Patients were furthermore asked to complete several questionnaires at the start of treatment and at the end of their treatment 12 months later.

This study is part of the long-term outcome and process study of Treatment Refractory Adolescents with Personality Disorders. Inclusion criteria for this study and admission to the inpatient unit were the presence of severe, chronic and multiple (psychological) symptoms, leading to clinically significant distress and impaired social and school functioning, for which previous outpatient treatment has not resulted in significant improvement of functioning. Exclusion criteria were chronic psychotic disorders (e.g. schizophrenia), organic cerebral impairment and mental retardation. No patients were excluded because of the exclusion criteria. Dropout was defined as any premature termination of treatment not mutually negotiated and agreed upon by staff and patient (cf. Baruch, Gerber, & Fearon, 1998; Hatchett & Park, 2003; Richmond, 1992). Completion of treatment was defined as mutually agreed discontinuation of treatment (cf. Johnson, Mellor, & Brann, 2009).

The study was approved by the Ethical Commission of the Department of Psychology of the University of Amsterdam.

Inpatient Psychotherapy for Adolescents

IPA is an intensive treatment programme with a maximum duration of 12 months. The treatment programme is modified along the lines of a therapeutic community approach. It incorporates mainly group-dynamic and milieu therapeutic approaches. The main idea is that the adolescents are constantly confronted with their dysfunctional behaviours. By the constant presence of other patients, room is provided for confrontations with dysfunctional patterns in interaction with others. The basic technique used in IPA is helping the adolescents explore their (dysfunctional) behaviour patterns and their defence mechanisms in the here and now (dynamic focus, supportive techniques). The therapeutic community provides a safe environment to explore and to practice with new

behaviours. Safety and quality of the therapeutic community are monitored by a milieu therapist.

The main goals of IPA are to address the maladaptive components underlying personality pathology (e.g. to gain more ego-strength and better relational capacities) in order to reduce symptom severity and gain improvements in daily functioning.

Adolescents were placed in one of four groups, with a maximum of 10 adolescents per group. Each group had their own psychotherapist (licensed psychotherapist with several years of experience), who was responsible for the treatment process of that particular group. Individual psychotherapy sessions were offered once a week; group psychotherapy sessions were scheduled three times a week. The techniques used in individual and group psychotherapy were mainly psychodynamically oriented. When indicated, techniques or protocols from cognitive behavioural therapy were used as well. Furthermore, non-verbal group therapies, such as psychomotor therapy and creative therapy, were offered four times a week. Other therapies were community-based group therapies with psychosocially trained nurses. These therapies were offered three times a week. Every adolescent had a mentor in the community setting (a psychosocial nurse) with whom they had individual sessions once a week (or more frequently if necessary). Psychiatric consults were scheduled on an as needed base. Sessions with a social worker were planned for the individual adolescent (and their family) to discuss plans for resocialization. A family therapist (licensed family therapist with several years of experience) had sessions with the adolescents and their families once every 2 or 3 weeks. Once a week, there was a patient–staff meeting to talk about chores, housekeeping and others. Adolescents went to school every morning for 4 h to practice with their difficulties with going to school and to improve their occupational functioning. Every evening, there was unstructured time in which the adolescents were free to do their homework or watch television, for example. However, this time was also considered therapy time;

psychosocial nurses were there to confront adolescents with their dysfunctional behaviour when necessary. Staff meetings were planned weekly to discuss the adolescents' progress.

Measures

Anxiety and mood disorders were diagnosed using the Anxiety Disorders Interview Schedule for DSM-IV Child Version—Child interview (Adis-C; Silverman & Albano, 1996; translated by Siebelink & Treffers, 2001). The Adis-C is a semi-structured interview designed to measure anxiety and other Axis I disorders in children and adolescents. No inter-rater reliability data were collected in this study. However, research shows that the Adis-C is reliable across time, informants and in comparison with other forms of assessment. Also, inter-rater reliability appeared to be good in a sample of children and adolescents aged 7–16 years (Lyneham, Abbott, & Rapee, 2007). The Adis-C was supplemented by sections E, G and H of the Structured Clinical Interview for DSM-IV Axis I disorders (SCID-I: First, Spitzer, Gibbon, & Williams, 1997; translated by van Groenestijn, Akkerhuis, Kupka, Schneider, & Nolen, 1999) to diagnose substance-related disorders, somatoform disorders and eating disorders respectively. The SCID-I appears to have good inter-rater reliability, especially when interviewers received training (Ventura, Liberman, Green, Shaner, & Mintz, 1998).

The SCID-II (First, Spitzer, Gibbon, Williams, & Benjamin, 1996; translated by Weertman, Arntz, & Kerkhofs, 1996) was used to diagnose Axis II PDs. Criteria were scored if they were pathological, pervasive and persistent and if they were present for 1 year, according to the guideline of the DSM-IV-TR. Because DSM-IV-TR does not allow for antisocial PD to be diagnosed in adolescents younger than 18 years, this section was left out of the interview for adolescents younger than 18 years. Personality disorder not otherwise specified (PDNOS) was scored if a depressive PD or a passive–aggressive personality disorder was

present or when at least 10 PD traits from various disorders were scored without crossing the cut-off point of any formal PD. No inter-rater reliability data were collected in this study. Previous research has shown (see, for example, Maffei et al., 1997; Weertman, Arntz, Dreessen, Van Velzen, & Vertommen, 2003) that the DSM-IV version of the SCID-II has a good inter-rater reliability and test–retest reliability for the presence or absence of a PD diagnosis in adults. Although the SCID-II is primarily designed for measuring PDs in adults, previous studies including adolescent samples have shown that the SCID-II is a useful instrument in an adolescent age group (Tromp & Koot, 2010).

Symptom severity, as reported by the adolescent, was measured by the Dutch version of the Brief Symptom Inventory (BSI; Derogatis, 1975; translated by de Beurs, 2006). It consists of 53 items covering nine symptom dimensions: Somatization, Obsession–Compulsion, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic anxiety, Paranoid ideation and Psychoticism; and three global indices of distress: Global Severity Index, Positive Symptom Distress Index and Positive Symptom Total. Respondents rank each feeling item (e.g. 'your feelings being easily hurt') on a 5-point scale ranging from 0 (*not at all*) to 4 (*extremely*). Rankings characterize the intensity of distress during the past 7 days.

Personality functioning was measured by the Severity Indices of Personality Problems (SIPP-118; Verheul et al., 2008). The SIPP-118 is a dimensional self-report measure and aims to measure the core components of (mal)adaptive personality functioning. The SIPP-118 asks the respondents to think about the past 3 months and to answer the extent to which they agree with statements such as 'I frequently say things I regret later' or 'Whenever I feel something, I can almost always name that feeling'. The response categories range from 1 to 4 and are described as *fully disagree, partly disagree, partly agree* or *fully agree*. The measure comprises 16 facets; these facets are clustered into five higher-order domains named Social Concordance, Relational functioning, Self-control, Responsibility and Identity Integration. High scores in the facets indicate better adaptive functioning, whereas lower scores represent more maladaptive personality functioning. The SIPP-118 was tested in an adolescent sample, showing adequate psychometric properties (Feenstra, Hutsebaut, Verheul, & Busschbach, 2011).

Quality of life was measured using the EuroQol EQ-5D (Brooks, Rabin, & de Charro, 2003). The EQ-5D measures quality of life in five dimensions: mobility, self-care, usual activities, pain/discomfort and anxiety/depression. The dimensions are divided into three response levels: no problems, some or moderate problems and extreme problems or unable to. The combination of scores is weighted to arrive at a single index score between -0.33 (worst imaginable health state) and 1.00 (best imaginable health state). Dutch norm scores were used to calculate the mean EQ-5D index values (Lamers, Stalmeier, McDonnell, Krabbe, & Busschbach, 2005).

The Dutch short version of the Depressive Experience Questionnaire for Adolescents (DEQ-A; Luyten, Corveleyn, & Blatt, 1997) was used to measure two personality styles: Self-criticism and Dependency. The DEQ (Blatt, D'Afflitti, & Quinlan, 1976) was originally developed for adults. Items of the DEQ were rephrased to make them more appropriate for adolescents. A factor analysis showed the similar three factors (Dependency, Self-criticism and Efficacy) as in the adult sample (Blatt, Schaffer, Bers, & Quinlan, 1992). Respondents are asked to what extent they agree with the items. Responses to the DEQ-A are given on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*).

Statistical analyses

Differences between groups (treatment completers vs incomplete datasets and/or dropouts) at baseline were investigated using chi-square tests and one-way ANOVAs. To investigate treatment outcome, paired-samples *t*-tests were conducted to compare mean scores for level of symptom severity (BSI), personality functioning (SIPP-118) and quality of life (EQ-5D) at baseline and 12 months after start

of treatment. Cohen's *d* was computed, using standard deviations (SD) of the mean baseline and post-treatment score. Because of the number of paired-samples *t*-tests (7), the family wise error rate was large (0.30). We controlled for this error rate by correcting the level of significance using the Bonferroni correction. The significance level for the analyses was set on 0.007 (0.05/7).

To investigate clinically significant change in level of symptom severity, we computed the percentage of patients who achieved reliable change, the percentage who moved from a dysfunctional range to a normative range and the percentage who had both reliable change and moved into a normative range as measured by the BSI (Jacobson & Truax, 1991).

Reliable change was calculated using the following formula: $RC = 1.96 * \sqrt{2}(SE)^2$, with $SE = 0.22$, $RC = 0.62$. A cut-off point for movement into a normative range was computed using the following formula: $(SD_{normal} * M_{clinical} + SD_{clinical} * M_{normal})/(SD_{normal} + SD_{clinical})$, with $M = 0.42$ $(SD = 0.40)$ and $M = 1.21$ $(SD = 0.71)$ for the normal and clinical population respectively (de Beurs, 2006). Clinical deterioration was also computed, defined as patients whose score on the BSI increased by the reliable change index.

To investigate the predictive value of the two DEQ-A dimensions used in previous research (dependency and self-criticism; see Luyten, Blatt, & Corveleyn, 2005) on change in level of symptom severity, a linear regression analysis was conducted. Level of symptom severity at the end of treatment was entered as the dependent variable, and the two DEQ-A dimensions were entered as predictors, as well as the interaction between these dimensions. Level of symptom severity at the start of treatment was also entered as an independent variable. Next, a similar regression analysis was conducted with the level of symptom severity at the end of treatment as dependent variable and the number of PD traits per cluster (A, B, C and NOS) and their interactions as predictors. Only two-way interactions were used in the regression analyses, to facilitate interpretation. Here also, the level of symptom severity at the start of treatment was entered as an independent variable.

Results

Participants

Of the 109 adolescents admitted to IPA, 93 were female (85.3%) and 16 were male (14.7%). Participants were aged 14–19 years, with a mean age of 16.6 (SD = 1.28). Of the 109 enrolled adolescents, 51 completed treatment and had complete datasets at all time points. Fifty-eight adolescents had incomplete datasets or dropped out of treatment prematurely. Characteristics of the different groups are presented in Table 1. No significant differences between the groups were found for demographic variables or Axis I disorders. As for Axis II disorders, PDNOS was classified significantly more frequent in the treatment completers group.

In all groups, most adolescents were referred by a mental health-care centre or youth welfare. Because these settings are so-called secondary care mental health-care settings (with general practitioner as primary care), this gives some evidence for the severity of the pathology in these adolescents. All but one adolescent received treatment prior to their admission to IPA. The mean age at the onset of their problems and the mean age of seeking help are also presented in Table 1. As one can see, adolescents sought help several years prior to their admission to IPA.

Treatment outcome

One year after start of treatment, the adolescents showed improvement in terms of symptom severity (GSI), personality functioning (SIPP-118) and quality of life (EQ-5D). These results are presented in Table 2. Effect sizes range from 0.49 (medium effect; SIPP-118 Responsibility) to 0.97 (large effect; SIPP-118 Self-control).

Table 1: Baseline variables

	Dropouts and/or incomplete data	Completers and complete data
	$N = 58$	$N = 51$
Demographic variables		
Female	50 (86.2)	43 (84.3)
Age (M, SD)	16.41 (1.33)	16.73 (1.22)
Clinical variables		
Mood disorder	21 (36.2)	22 (43.1)
Anxiety disorder	26 (44.8)	20 (39.2)
Eating disorder	14 (24.1)	6 (11.8)
Somatoform disorder	1 (1.7)	1 (2.0)
Substance use disorder	4 (6.9)	4 (7.8)
Other Axis I disorder	0 (0.0)	1 (2.0)
Avoidant PD	8 (13.8)	9 (17.6)
Obsessive–compulsive PD	3 (5.2)	2 (3.9)
Borderline PD	16 (27.6)	9 (17.6)
PD not otherwise specified	2 (3.4)	9 (17.6)
Any PD	24 (41.4)	25 (49.0)
Referred by		
General practitioner	5 (8.6)	8 (15.7)
Psychiatrist or psychologist with private practice	15 (25.9)	6 (11.8)
General hospital	3 (5.2)	3 (5.9)
Mental health-care centre/youth welfare	35 (60.3)	34 (66.7)
Treatment history		
Age at onset problems (M, SD)	12.23 (2.62)	12.59 (2.85)
Age at first treatment (M, SD)	13.05 (2.67)	13.44 (2.99)

Note: Data are presented as N (%), unless otherwise specified. The sum of the number of patients in the different diagnostic groups is higher than the total number of patients because patients can have more than one (personality) disorder.

Table 2: Treatment outcome ($n = 65$–78[a])

Variable	Baseline Mean (SD)	12 months Mean (SD)	t	d
GSI	1.53 (0.62)	1.09 (0.73)	4.547**	0.65
SIPP-118 Self-control	4.14 (0.89)	5.07 (1.03)	−7.446**	0.97
SIPP-118 Social concordance	5.47 (0.74)	5.98 (0.71)	−5.699**	0.71
SIPP-118 Identity integration	3.29 (0.73)	4.02 (0.91)	−7.653**	0.89
SIPP-118 Relational capacities	3.77 (0.75)	4.23 (0.94)	−5.242**	0.55
SIPP-118 Responsibility	4.28 (0.82)	4.68 (0.84)	−3.963**	0.49
EQ-5D	0.55 (0.27)	0.70 (0.25)	−4.815**	0.58

Note: GSI, Global Severity Index (Brief Symptom Inventory); SIPP-118, Severity Indices of Personality Problems 118; EQ-5D, EuroQol EQ-5D.
[a]Because of missing values, n varies between 65 and 78.
*$p < 0.007$; **$p < 0.001$.

Clinically significant change of symptom severity

As measured by the BSI, 43.1% of the adolescents (*n* = 28 from 65) had reliable change. Twenty-nine per cent of the adolescents (*n* = 19) moved from a dysfunctional range to a normative range of symptom severity, whereas 26% demonstrated both reliable change and movement into the normative range (*n* = 17). Six adolescents (9.2%) showed clinical deterioration.

Predictors of change in level of symptom severity

Self-criticism and dependency as predictors of change in level of symptom severity. Table 3 shows the results of the regression analysis investigating the predictive value of self-criticism and dependency on change in level of symptom severity. The results show that higher levels of self-criticism at start of treatment significantly predicted less

improvement in level of symptom severity. A lower interaction term of self-criticism and dependency also predicted less improvement in level of symptom severity.

Predictive value of type of personality disorder on change in level of symptom severity. Table 4 shows the results of the regression analysis investigating the predictive value of number of PD traits per cluster on change in level of symptom severity. There were no statistically significant interaction effects; they were therefore left out of the final model. No type of PD significantly predicted change in level of symptom severity.

Discussion

In this study, we investigated treatment outcome in adolescents with personality pathology admitted to IPA. Our results indicate that these adolescents (who either completed the treatment and/or stayed in the study) show improvement in level of symptom severity 12 months after start of treatment. A medium sized effect (*d* = 0.65) was found for the total group of patients. Adolescents furthermore improved in their personality functioning (*d* ranged from 0.49 to 0.97) and quality of life (*d* = 0.58). When looking at clinically significant change, it was shown that 26% of the adolescents had reliable change and moved into a normative range of level of symptom severity. Higher levels of self-criticism significantly predicted poorer

Table 3: Predictive value of self-criticism and dependency on change in level of symptom severity (*n* = 63)

	β	*t*	*p*
Constant		−0.861	0.393
Symptom severity (start of treatment)	0.261	2.026	0.047
Self-criticism (need for establishing a consolidated sense of self)	0.632	3.056	0.003
Dependency * self-criticism	−0.533	−2.660	0.010

Table 4: Predictive value of type of personality disorder on change in level of symptom severity (*n* = 65)

	β	*t*	*p*
Constant		1.746	0.086
Symptom severity (start of treatment)	0.259	1.897	0.063
# personality disorder traits cluster A	−0.004	−0.031	0.976
# personality disorder traits cluster B	0.242	1.612	0.112
# personality disorder traits cluster C	−0.081	−0.576	0.567
# personality disorder traits NOS	0.032	0.234	0.816

Note: NOS, not otherwise specified; in this variable, only traits from depressive personality disorder and passive–aggressive personality disorder were included.

outcome in terms of symptom severity. A lower interaction term of self-criticism and dependency also predicted poorer outcome. Type of PD did not predict treatment outcome.

The results for the group of adolescents as a whole were slightly disappointing. Whereas a minority of adolescents made significant progress in terms of symptom severity, the overall progress is modest, owing to an important group of adolescents who do not change or show only little improvement in level of symptom severity. The fact that IPA was a non-manualized treatment programme might be one explanation for our modest results. There was no pronounced theoretical frame used by the therapists. Bateman and Fonagy (2004, p. 187) state that 'it is crucial to maintain consistency, constancy, and coherence of treatment because individuals with PDs detect and exploit inconsistency'. An inpatient setting such as IPA, in which multiple staff members have to work together without a manualized treatment programme, might cause more inconsistency. Adolescents who are capable of integrating different parts of the treatment programme themselves might therefore profit more from IPA than the more severely disturbed adolescents who will have much more difficulties in integrating different parts of the treatment model. It could be that the eclectic (or even incoherent) nature of IPA was too diffuse or non-specific to cause a maximum effect for most adolescents. Previous studies have shown the difficulties that one can encounter working with adolescents with PDs (see, for example, Schuppert et al., 2009, 2012). The promising results of Chanen et al. (2008), working with an individual form of therapy with these adolescents, raise the question whether more individual attention is needed than was provided with IPA. It might be that more individual psychotherapy sessions could lead to better treatment outcomes.

Higher levels of self-criticism predicted poorer outcome in terms of symptom severity. This is in line with previous research, showing that self-critical patients seem to have more difficulties in profiting from the therapeutic relationship and

have more difficulties dealing with a more directive attitude from the therapist (Luyten, 2002). The nature of our setting, including many rules and procedures, seems to lead to less beneficial outcome for self-critical patients. Research has shown that the two dimensions of Blatt's model, self-criticism and dependency, are closely linked to the two dimensions underlying attachment style, avoidance and anxiety respectively (Luyten & Blatt, 2011, 2012). Attachment avoidance, related to self-criticism, is defined as 'discomfort with closeness and with discomfort depending on others'. Attachment anxiety, related to dependency, is defined as 'fear of rejection and abandonment' (Mikulincer & Shaver, 2007). When stress increases, patients high on self-criticism will more likely rely on themselves, whereas dependent patients will rely on others. The supportive nature of IPA might therefore be more adequate for dependent patients. Patients with a higher score on the interaction term of self-criticism and dependency seem to profit more from IPA; these patients also seem to be characterized by higher levels of dependency.

Furthermore, type of PD did not significantly predict treatment outcome. To some extent, this finding is promising, as Bateman and Fonagy (2010) have suggested that an inpatient treatment programme can cause deterioration in BPD patients because of overstimulation of their attachment system. In our study, we did not find detrimental effects of an inpatient setting on symptom level for BPD adolescents. These results show that having a cluster B PD should not automatically mean that an inpatient treatment is not an option. An alternative explanation would be that our patient population did not include patients with low-level BPD who are likely to be especially vulnerable to overstimulation. On the other hand, the treatment outcomes were slightly disappointing, as we would expect larger than the observed medium to large-sized (d ranged from 0.49 to 0.97) effects from a 12-month inpatient programme.

These findings elicit some important issues. Whereas a minority of adolescents made significant progress, the overall progress is small, towing to an

important group of adolescents who do not change or show only little improvement in level of symptom severity. Given the expensive nature of inpatient treatment, this warrants more research on predictors of treatment outcome in IPA in order to assign the right subgroup of adolescents to this treatment modality. It seems from our research that the type of the symptoms presented gives less information than the type of personality structure underlying these symptoms. Given the limited number of resources for mental healthcare and the expected trend towards less long-term inpatient treatment, it will become important to identify adolescents who do profit more from IPA than from outpatient treatment.

This study has several strengths and limitations. A strength is the performance of thorough assessments of Axis I and Axis II disorders. A limitation is that we did not include a control group in this study, which complicated the interpretation of the observed treatment outcome. We cannot rule out that no treatment or, in other words, the natural course of the pathology would yield similar or even larger improvements as compared with IPA. This limitation is however somewhat mitigated by the fact that the observed effect sizes ($d = 0.49$ to 0.97) are comparable with, or even higher than, the effect sizes from other studies investigating the treatment outcome of personality disordered adolescents (see, for example, Schuppert et al., 2009). Follow-up measures were also not included in this study; we therefore do not know how treatment effects will last after adolescents leave the inpatient unit.

Furthermore, other than Bartak et al. (2010, 2011), we had only one treatment modality, so we can not differentiate between short-term and long-term inpatient programmes in the way that they did. In that respect, further research is needed, investigating different treatment modalities. Because healthcare interventions have a competing interest in the limited resources available, and an inpatient treatment is an expensive treatment, it seems important to provide additional evidence for both the effectiveness and the cost-effectiveness of this kind of treatment. In this study, we choose to include two different types of predictors. Previous research, however, has mentioned other important predictors that we did not include in this study. For example, comorbidity (of PDs) is mentioned as a factor influencing treatment outcome in adults (see, for example, Milrod, Leon, Barber, Markowitz, & Graf, 2007; Reich & Vasile, 1993). Further research is needed investigating this (and other) potential predictors of treatment outcome for adolescent samples. Finally, despite fierce attempts to involve all adolescents in this study, a large group of patients was excluded from the analyses because of missing values, which complicates the interpretation of our findings. It seems to be difficult to involve these (personality disordered) adolescents in research activities. In further research, it is advised to employ even more effort to ensure compliance.

Our results show that (personality disordered) adolescents admitted to an inpatient treatment programme show less symptom severity 12 months after start of treatment. Also, improvement in personality functioning and quality of life was found. Treatment outcomes were slightly disappointing, however, with effect sizes ranging from 0.49 to 0.97. And although the total group changed significantly, a large portion of this group did not improve significantly or even deteriorated. Our study shows that especially patients with higher levels of self-criticism profit less from this particular inpatient treatment programme. Further research, however, is needed to investigate predictors of treatment success of inpatient treatment to assign more accurately the right group of adolescents to this expensive form of treatment.

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