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BRIEF REPORT OPEN ACCESS

# One-Year Follow-Up: Schema Therapy for Patients With Borderline Personality Disorder and Comorbid Alcohol Use Disorder

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## ABSTRACT

This article describes the 1-year follow-up of a study into the effectiveness of Schema Therapy (ST) for borderline personality disorder (BPD) and comorbid alcohol use disorder (AUD). In the original study, 20 of these patients participated in a multiple baseline case series design study. The results of the original study were promising (a significant decrease of BPD and AUD symptoms). The present study is aimed at examining the longer term benefits of ST for BPD and comorbid AUD. One year after the cessation of the investigational therapy, 17 of the original participants agreed to participate in this follow-up study. *T*- or Wilcoxon signed rank tests were performed to compare 1-year follow-up to start of therapy (baseline). The results suggest that the main therapeutic improvements were generally preserved at 1-year follow-up. These findings add to the idea that integrated ST for BPD and comorbid AUD might be effective, also in the long term. A randomized clinical trial is indicated to substantiate this idea.

## 1 | Introduction

Alcohol (Alc) use disorder (AUD) and borderline personality disorder (BPD) form a highly prevalent comorbidity (Kienast et al. 2014; Köck and Walter 2018). Research shows that 50%–60% of BPD patients suffer from a concomitant AUD (lifetime; Barth 2007; Guy et al. 2018; Helle et al. 2019). Conversely, estimates of the prevalence of BPD in AUD patients vary between 12% and 21% (current; Helle et al. 2019; Verheul, van den Brink, and Hartgers 1995). The co-occurrence of BPD and substance use disorder (SUD; most studies do not focus on AUD patients, but on SUD patients in general) makes pathology more complex (Heath et al. 2017) and prognosis less favourable (Kienast et al. 2014). Further, BPD deteriorates the outcomes of SUD treatment (although SUD patients with comorbid personality disorder are able to benefit from SUD treatment. Comorbid

personality disorders do, however, increase the chances of relapse after SUD treatment (Darke et al. 2005; Thomas, Melchert, and Banken 1999; Verheul, van den Bosch, and Ball 2009). Conversely, SUD might hinder the treatment of BPD, although study outcomes are not univocal (Arntz et al. 2015; Rameckers et al. 2021; Ryle and Golyenkina 2000).

The superiority of an integrated treatment of BPD and SUD is suggested by several authors (van den Bosch and Verheul 2007; Zanarini et al. 2004), but evidence is scarce (see, e.g., studies on treatment of this comorbidity using dialectical behaviour therapy, deconstructive dynamic psychotherapy and mentalization-based treatment; Gregory et al. 2008; Linehan et al. 2002; Philips et al. 2018). Schema Therapy (ST), an evidence-based form of psychotherapy for personality disorders, especially BPD (Bamelis et al. 2014;

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## Summary

- Decrease of borderline personality disorder symptoms and symptoms of alcohol use disorder in Schema Therapy appear to be preserved at 1-year follow-up.
- Improvements in quality of life during Schema Therapy were also preserved.
- Symptom and life quality improvements noted among those not sustaining complete abstinence.

Giesen-Bloo et al. 2006; Jacob and Arntz 2013), has been investigated in personality disorders and comorbid SUDs, initially yielding mixed results (Ball et al. 2005; Ball et al. 2011). Recently, more positive results were obtained in a case series study, in which ST was applied thoroughly in patients with BPD and AUD (Boog et al. 2023). BPD and AUD symptoms decreased during ST, especially during the treatment phase in which experiential techniques (a core ingredient of ST) were used. Moreover, measures of general well-being indicated improvement in therapy.

The present study was a 1-year follow-up of this case series study into ST for BPD and AUD (Boog et al. 2023), aiming to investigate what the outcomes are at 1 year after the cessation of therapy (1-year follow-up). It was a naturalistic follow-up; many patients received psychological interventions during the year after the investigational treatment. Prior research into ST for personality disorders indicates that therapeutic improvements are preserved, or deepened, at follow-ups after treatment cessation (Bamelis et al. 2014; Fassbinder et al. 2016; van Asselt et al. 2008). We therefore hypothesized that the 1-year follow-up results still showed considerable improvements compared to baseline.

## 2 | Methods

### 2.1 | Participants

The study got approved by the ethics review board of the Department of Clinical Psychology of the University of Amsterdam and the Institutional Review Board of Antea, a large mental health care institute specialized in addiction treatment. In the original study, 20 individuals participated. Most important inclusion criteria were a main diagnosis of BPD and AUD as main SUD diagnosis (both diagnoses according to DSM-IV-TR criteria; APA 2000), Dutch literacy and IQ above 80. Exclusion criteria were ADHD (because of symptom overlap between BPD and ADHD), psychotic disorders (except short, reactive psychotic episodes, as seen in BPD), neurocognitive disorders and bipolar disorder. See the original study (Boog et al. 2023; Dutch trial register NTR5218) for further details.

At 1-year follow-up, 17 of the original participants agreed to take part and were assessed. Three patients of the original 20 were lost to follow-up (one patient deceased shortly after the end of the investigational therapy due to an accident)—the possibility of suicide was excluded by the medical examiner; one was pushed out in the third session of the treatment (because she

would not meet basic requirements; she refused to cooperate in urine testing and psychological assessments); one dropped out during the third treatment phase (see Section 2.3 for the content of different treatment phases). Of these 17 participants, 10 had a drug use disorder next to the AUD (5 had a cannabis use disorder, 3 a benzodiazepine use disorder, 1 a cocaine use disorder and 1 a hallucinogen use disorder).

### 2.2 | Procedure and Design

Patients were recruited at a large mental health care institute (Antea) in Rotterdam, the Netherlands, specialized in addiction treatment. At the end of their investigational treatment, participants were asked to take part in a follow-up study, 1 year later. The follow-up comprised a single-session assessment.

### 2.3 | Treatment Protocol

In the original study, patients received two individual therapy sessions per week, on average 80 sessions in total. Treatment was divided in four phases: treatment as usual, directed at the AUD (Phase I), case conceptualisation (Phase II), experiential techniques (Phase III) and behaviour change (Phase IV). In Phases II, III and IV, ST (70 sessions) was provided.

### 2.4 | Assessments

All the instruments used in the 1-year follow-up assessment were measures that had been administered in the original study. For every instrument, the timepoints of administration are given (between parentheses). For details on reliability and validity, we refer readers to the article of the original study.

The BPD Checklist Short Form (BPD-CL-SF) was developed for the original study, in order to enable the assessment of BPD symptoms time effectively and frequently. It assesses BPD symptoms in the last 3 days. This instrument (and several other) covered the last 3 days, because there were at least 3 days between the treatment sessions in the original study. In this way, the outcomes of the instrument did not overlap (administered at baseline, before every session, 3 months after therapy and 1 year after the conclusion of therapy (1-year follow-up)).

The BPD Severity 1 Week Version (BPDSI-W; Arntz and Giesen-Bloo 2009) measures severity of BPD symptoms in the last week (baseline, before every fifth session, 3 months after therapy and 1-year follow-up).

A short questionnaire on use of Alc comprises questions on the number of days in the last 3 days (leading to a score of 0, 1 or 2) that any quantity of Alc and five or more units of Alc per drinking day ( $\text{Alc} \geq 5$ ) were used (baseline, every session, 3 months after therapy and 1-year follow-up).

The Addiction Severity Index (ASI) is a structured interview aimed at the measurement of the severity of the substance use and related issues (Hendriks et al. 1989; McLellan et al. 1985). It assesses substance use in the last month. In this study, the

focus was on the number of drinking days in the last month and the number of heavy (five or more units of Alc per drinking day) drinking days in the last month. Because (relative) abstinence was a prerequisite to enter the therapy in the original study, the ASI at baseline was administered covering the 30 days before general abstinence of Alc. This was done in order to make a valid assessment of the severity of the SUD. An extra item was included at 1-year follow-up: health care consumption in the last year (baseline, 3 months after therapy and 1-year follow-up).

A visual analogue scale (VAS) on craving measures craving in the last three days (Myrick et al. 2004; baseline, every session, 3 months after therapy and 1-year follow-up).

The happiness item is a one-question instrument measuring happiness in the last months (Veenhoven 2019; baseline, end of therapy, 3 months after therapy and 1-year follow-up).

The World Health Organization Quality Of Life-BREF (WHOQOL-BREF; TheWhoqolGroup 1998) assesses the quality of life in the 2 weeks before administration (baseline, end of therapy, 3 months after therapy and 1-year follow-up).

## 2.5 | Statistical Analysis

For every instrument, the mean value at various timepoints is presented. Additionally, for every measure that was administered more frequently (before every therapy session or before every fifth session), the mean value for every therapy phase was computed. Further, dependent sample *t*-tests were conducted, in order to evaluate whether dependent variables at the start of therapy and at 1-year follow-up differed. For two questionnaires (Alc, Alc  $\geq 5$ ), Wilcoxon signed rank tests were performed, because both variables were nonnormally distributed. Because 13 statistical tests were performed, a false discovery rate adjustment was done, in order to control the chance of making Type I errors, while minimizing the reduction in statistical power (Verhoeven, Simonsen, and McIntyre 2005). In order to determine effect sizes, Cohen's *d* was computed, comparing the start of therapy and 1-year follow-up.

Additional analyses (*t*-tests and Wilcoxon signed rank tests) were performed in order to investigate whether the observed changes between the start of therapy and 1-year follow-up were likely to be attributed to ST or to study protocol participation per se (because ST was not provided in in all four phases of therapy). The additional analyses compared mean scores of instruments administered in Phase I (the therapy phase in which ST was not provided; ST was provided in the subsequent phases) with scores on the same instruments at 1-year follow-up.

## 3 | Results

In Table 1, as background information, the treatment format and frequency in the year after the investigated ST is presented. In the outpatient treatment, the therapy was provided by the therapists who had provided the investigational ST. In most cases, the

**TABLE 1** | Type and frequency of interventions in the year after ST.

Treatment	<i>N</i>
No treatment	2
Self-help group (alcoholic anonymous)	1
Outpatient treatment $\leq 1$ session per 2 weeks	8
Outpatient treatment 1 session per week	6

outpatient treatment consisted of booster sessions aimed at behavioural change, building upon the behavioural change work that was conducted in Phase IV of the investigational ST. The focus was on both BPD and AUD.

Table 2 displays the mean value of every outcome variable at baseline, 3 months after therapy and at 1-year follow-up. Additionally, for every measure that was administered more frequently (before every therapy session or before every fifth session), the mean value per therapy phase is given.

To examine the treatment outcomes at 1-year follow-up, *t*-tests (Table 3) and Wilcoxon signed rank test (Table 4) were performed comparing the scores of the start of therapy and 1-year follow-up. Significant decreases between start of therapy and 1-year follow-up were found for BPD-CL-SF and BPDSI-W, the number of drinking days in the last month, and the number of heavy (five or more units of Alc per drinking day) drinking days in the last month, all with large to very large effect sizes, indicating a considerable decline of BPD and AUD symptoms. Craving for Alc did also decrease, with medium effect size. The scores on all WHOQOL subscales ('psychological', 'social', 'physical', 'environment' and 'general') and on the happiness item increased significantly, with medium to large effect sizes, indicating improved well-being. Further, comparing the start of therapy and 1-year follow-up, no significant change in Alc consumption in the last 3 days was found (Alc and Alc  $\geq 5$ ).

Mean outcomes in different therapy phases (Table 2) suggest that substantial changes on various outcomes might have been obtained between baseline and Phase I (in which TAU was provided) and/or during Phase I. In order to get insight into the positive effects of ST application relative to study protocol participation ('is improvement not merely attributable to study participation?'), mean values of Phase I were compared to 1-year follow-up (only for instruments that were administered during Phase I; see Tables 5 and 6). Significant decreases (with moderate to large effect sizes) in both BPD severity measure (BD-CL-SF and BPDSI-W) mean scores between Phase I and 1-year follow-up were found. Comparing Phase I and 1-year follow-up, no significant changes in AUD variables (craving, Alc and Alc  $\geq 5$ ) were observed.

## 4 | Discussion

The present study addressed the question whether an integrated treatment for comorbid BPD and AUD as presented in the Boog et al. (2023) study might prevent individuals from relapsing in AUD (and BPD) symptoms. We assessed the level

**TABLE 2** | Mean (SD) outcomes of Schema Therapy for borderline personality disorder and alcohol use disorder.

	Baseline	Phase I	Phase II	Phase III	Phase IV	End	3-month follow-up	1-year follow-up
BPD-CL-SF	52.3 (15.8)	37.1 (19.1)	37.9 (19.9)	34.8 (18.9)	33.8 (17.6)	35.6 (19.4)	31.2 (17.3)	29.4 (15.9)
BPDSI-W	14.8 (6.5)	11.9 (6.2)	10.4 (4.8)	8.9 (4.7)	7.6 (4.7)	7.5 (4.7)	7.7 (5.3)	6.8 (5.1)
Craving	4.9 (2.7)	4.4 (2.9)	4.0 (3.2)	3.7 (3.1)	3.3 (2.8)	3.5 (3.0)	3.1 (3.0)	3.2 (2.9)
Happiness item <sup>a</sup>	3.0 (0.8)					3.7 (1.2)	4.1 (1.4)	4.4 (1.2)
WHOQOL-BREF								
Physical	11.1 (2.6)					12.5 (2.0)	11.9 (2.9)	13.5 (2.2)
Psychological	9.2 (1.7)					10.8 (2.6)	10.9 (2.9)	11.5 (2.3)
Social	9.9 (2.4)					10.2 (3.2)	11.4 (3.9)	13.6 (2.7)
Environment	13.0 (2.1)					13.6 (2.3)	13.4 (2.2)	14.4 (2.2)
General	11.0 (2.9)					11.4 (3.1)	12.1 (3.1)	12.7 (2.9)
Alc	0.24 (0.6)	0.13 (0.4)	0.19 (0.5)	0.19 (0.5)	0.13 (0.4)	0.11 (0.3)	0.61 (0.9)	0.41 (0.6)
Alc ≥ 5	0.24 (0.6)	0.09 (0.4)	0.13 (0.4)	0.09 (0.4)	0.04 (0.2)	0.17 (0.4)	0.17 (0.5)	0.18 (0.5)
# drinking days last month	16.6 (13.2)						6.2 (7.4)	3.8 (5.6)
# drinking days ≥ 5 units last month	15.7 (13.4)						1.8 (3.0)	2.5 (4.4)

Abbreviations: Alc = # drinking days in the last 3 days, Alc ≥ 5 = # drinking days (drinking of five or more units of alcohol per day) in the last 3 days, BPD-CL-SF = Borderline Personality Disorder Checklist Short Form, BPDSI-W = Borderline Personality Disorder Severity Index-1 week version, Craving = craving for alcohol in the last 3 days, WHOQOL-BREF = World Health Organization Quality Of Life-abbreviated.

<sup>a</sup>Mean (SD) in Dutch general population in 2013:5.46 (0.74) (Veenhoven 2019).

**TABLE 3** | Paired sample *t*-tests comparing start of therapy and 1-year follow-up.

	<i>T</i>	Df	<i>p</i>	Cohen's <i>d</i> <sup>a,b</sup>
BPD-CL-SF	4.74*	16	< 0.001	1.45
BPDSI-W	4.23*	16	< 0.001	1.24
Craving	2.40*	16	0.029	0.65
Happiness item	-5.14*	16	< 0.001	1.79
WHOQOL-BREF				
Physical	-3.26*	16	0.005	0.93
Psychological	-3.47*	16	0.003	1.31
Social	-3.71*	16	0.002	1.53
Environment	-2.64*	16	0.018	0.68
General	-2.43*	16	0.027	0.60
# drinking days last month	3.31*	16	0.004	0.97
# drinking days ≥ 5 last month	3.73*	16	0.002	0.99

Abbreviations: BPD-CL-SF = Borderline Personality Disorder Checklist Short Form, BPDSI-W = Borderline Personality Disorder Severity Index-1 week version, Craving = craving for alcohol in the last 3 days, WHOQOL-BREF = World Health Organization Quality Of Life-abbreviated.

<sup>a</sup>Cohen's *d* is computed using the SD of the start of the therapy.

<sup>b</sup>Cohen's *d* has a positive sign if the change represents improvement.

\*Significant after false discovery rate adjustment.

**TABLE 4** | Wilcoxon signed rank test comparing start of therapy and 1-year follow-up for alcohol drinking in the last 3 days.

	<i>Md start</i>	<i>M start</i>	<i>Md follow-up</i>	<i>M follow-up</i>	<i>Z</i>	<i>p</i>
Alc	0	0.24	0	0.41	−1.34	0.18
Alc ≥ 5	0	0.24	0	0.18	−0.58	0.56

Abbreviations: Alc = drinking of alcohol in the last 3 days, Alc ≥ 5 = drinking of five or more units of alcohol per day in the last 3 days.

**TABLE 5** | Paired sample *t*-tests comparing mean score of therapy Phase 1 and 1-year follow-up.

	<i>T</i>	<i>Df</i>	<i>p</i>	<i>Cohen's d</i>
BPD-CL-SF	2.51	16	0.023	0.78
BPDSI-W	4.10	16	<0.001	0.99
Craving	1.93	16	0.072	0.93

Abbreviations: BPD-CL-SF = Borderline Personality Disorder Checklist Short Form, BPDSI-W = Borderline Personality Disorder Severity Index-1 week version, Craving = craving for alcohol in the last 3 days.

**TABLE 6** | Wilcoxon signed rank test comparing mean score of therapy Phase 1 and 1-year follow-up for alcohol drinking in the last 3 days.

	<i>Md Phase 1</i>	<i>M Phase 1</i>	<i>Md follow-up</i>	<i>M follow-up</i>	<i>Z</i>	<i>p</i>
Alc	0.11	0.15	0	0.41	−1.6	0.11
Alc ≥ 5	0	0.10	0	0.18	−0.17	0.87

Abbreviations: Alc = drinking of alcohol in the last 3 days, Alc ≥ 5 = drinking of five or more units of alcohol per day in the last 3 days.

of symptoms and well-being 1 year after the completion of therapy as compared to baseline. We found significant differences between BPD characteristics at baseline versus 1-year follow-up, with very large effect sizes, indicating that lower levels of BPD characteristics are preserved 1 year after therapy. Further, the number of drinking days (any drinking of Alc and heavy drinking of Alc) in the last month decreased, with large effect sizes. Other variables linked to AUD showed mixed outcomes compared to baseline: craving decreased (medium effect size), but the use of any Alc and heavy use of Alc in the last 3 days did not change. The absence of a significant difference between baseline and 1-year follow-up in the use of Alc in the last 3 days might be indicative of the ineffectiveness of ST in targeting this variable. However, an alternative explanation might be applicable: The baseline assessment of this variable encompassed the 3 days directly prior to the start of the therapy—there was a great stress on sobriety before the start of therapy, and most participants did not drink. This measurement might therefore not be a valid assessment of the level (severity) of drinking before therapy. Also, this explanation might help to understand the discrepancy found between the change of use of Alc in the last 30 days versus the lack of change in the use in the last 3 days, the first being the most valid measure of pretherapy AUD severity, as it encompassed the 30 days preceding general abstinence. Hypothetically, the fact that no significant increase regarding the use of Alc in the last 3 days (comparing baseline and follow-up) was found, is rather indicative of the absence of relapse in substance use (relapse that is so often seen in patients with SUD and comorbid personality disorders). ST might have ‘protected’ participants from relapsing in SUD, despite that 35% still used limited amounts of Alc. Importantly, the methodology of the present

study prevents drawing conclusions regarding the cause of the observed decreases between baseline and 1-year follow-up in AUD and BPD symptoms. Decreases in symptoms might (partly) be attributable to treatment protocol participation, rather than the provision of ST. Additional analyses provide partial support this hypothesis: Smaller/no changes were found when comparing Phase I with 1-year follow-up (instead of comparing baseline with 1-year follow-up). This might indicate that participation in the study was important in change. Hypothetically, ST’s strength in the population under study lies in its ability to prevent symptom relapse.

As for more general well-being and quality of life, perceived happiness increased when baseline was compared with 1-year follow-up (large effect size). Where on average, participants rated their state as ‘very unhappy–rather unhappy’ at baseline, and it increased to ‘not unhappy/not happy–rather happy’ at 1-year follow-up (in the general Dutch society, individuals see themselves as ‘rather happy–very happy’). Quality of life improved significantly in all domains measured.

All in all, the outcomes of the present study suggest that the decrease in symptoms (of BPD and AUD) and improvements in general well-being obtained through integrated ST for AUD and BPD are preserved at 1-year follow-up. The outcomes are more robust regarding BPD symptoms; for AUD symptoms, the outcomes are more mixed. In the parent study (Boog et al. 2023), decreases in the use of Alc during ST did appear, similar to the 1-month assessments at the 1-year follow-up, but in contrast with the 1-year follow-up findings of the last 3 days that failed to reach significance. Hypothetically, relative abstinence during therapy enables change in BPD symptoms leading to

lasting change in BPD symptoms and general well-being. Less pronounced change in AUD symptoms/relative lack of abstinence after therapy might not be undermining progress in BPD symptomatology nor hindering increases in well-being. This in line with prior studies, suggesting that abstinence after therapy is not firmly related to level of functioning in SUD patients (Kline-Simon et al. 2017; Maisto et al. 2007; Miquel et al. 2017). Further, looking at the descriptive statistics (Table 3), in general, a decrease of symptoms and an increase of well-being can be observed when the 1-year follow-up is compared to the 3-month follow-up. This might be suggestive of a deepening of therapeutic improvement during the year after the investigational therapy, although this conclusion cannot be drawn firmly because of the fact that most participants received additional therapy in the year after the experimental ST.

Clear shortcomings of the present study are that it is uncontrolled, and based on a small sample, preventing firm conclusions. Further, although we applied urine tests in the original study, no biomarkers were used in the present study. Third, most participants received some form of treatment after the investigational treatment. It is unclear how this additional treatment affected the follow-up outcomes. This treatment after the year of experimental ST might be the cause of the preservation of improvements at 1-year follow-up. As little is known about the long-term outcomes of ST (and psychotherapy in general) in patients with BPD and AUD, the present study does, however, provide insightful data, facilitating the generation of research questions (e.g., might abstinence of Alc be a condition, a means, in order to enable psychotherapy?) and supporting future research into ST in patients with SUD and comorbid personality disorders. The outcomes of this study support the idea that integrated ST for BPD and comorbid AUD might be effective, also in the long term. A randomized clinical trial (RCT) is needed to validate this idea. Further, because most patients in the present study received some form of treatment in the year after the investigational treatment, it might be relevant to consider an increase in the duration of ST. Patients received 70 sessions of ST; therapies last generally about 1 year. In a recent RCT into ST for BPD, ST lasted 2 years, with a strong decrease in treatment intensity in the second year. This format (2 years of ST, with a strong decrease in treatment intensity in Year 2) might be advisable for BPD patients with comorbid AUD too. Other options might be to intensify the ST (more sessions in a relative short period of time), or adding trauma-focused therapy (for non-PTSD trauma related to the genesis and maintenance of PD) preceding ST (Hofman et al. 2022).

### Ethics Statement

The study protocol was approved by the ethics review board of the Department of Clinical Psychology of the University of Amsterdam. The study was registered in the Dutch trial registry (NTR, number NTR5218).

### Consent

When patients agreed to participate, informed consent was obtained.

### Conflicts of Interest

The authors declare no conflicts of interest.

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