ORIGINAL ARTICLE

Outpatient Psychotherapy for Borderline Personality Disorder

Randomized Trial of Schema-Focused Therapy vs Transference-Focused Psychotherapy

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Context: Borderline personality disorder is a severe and chronic psychiatric condition, prevalent throughout health care settings. Only limited effects of current treatments have been documented.

Objective: To compare the effectiveness of schema-focused therapy (SFT) and psychodynamically based transference-focused psychotherapy (TFP) in patients with borderline personality disorder.

Design: A multicenter, randomized, 2-group design.

Setting: Four general community mental health centers.

Participants: Eighty-eight patients with a Borderline Personality Disorder Severity Index, fourth version, score greater than a predetermined cutoff score.

Intervention: Three years of either SFT or TFP with sessions twice a week.

Main Outcome Measures: Borderline Personality Disorder Severity Index, fourth version, score; quality of life; general psychopathologic dysfunction; and measures of SFT/TFP personality concepts. Patient assessments were made before randomization and then every 3 months for 3 years.

Results: Data on 44 SFT patients and 42 TFP patients were available. The sociodemographic and clinical characteristics of the groups were similar at baseline. Survival analyses revealed a higher dropout risk for TFP patients than for SFT patients ($P=.01$). Using an intention-to-treat approach, statistically and clinically significant improvements were found for both treatments on all measures after 1-, 2-, and 3-year treatment periods. After 3 years of treatment, survival analyses demonstrated that significantly more SFT patients recovered (relative risk = 2.18; $P=.04$) or showed reliable clinical improvement (relative risk = 2.33; $P=.009$) on the Borderline Personality Disorder Severity Index, fourth version. Robust analysis of covariance (ANCOVA) showed that they also improved more in general psychopathologic dysfunction and measures of SFT/TFP personality concepts ($P<.001$). Finally, SFT patients showed greater increases in quality of life than TFP patients (robust ANCOVAs, $P=.03$ and $P<.001$).

Conclusions: Three years of SFT or TFP proved to be effective in reducing borderline personality disorder–specific and general psychopathologic dysfunction and measures of SFT/TFP concepts and in improving quality of life; SFT is more effective than TFP for all measures.

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BORDERLINE PERSONALITY DISorder (BPD) is marked by chronic instability in multiple areas (ie, emotional dysregulation, self-harm, impulsivity, and identity disturbance). The prevalence of BPD is estimated to be 1% to 2.5% in the general population and 10% to 50% in psychiatric outpatient and inpatient settings.[1] The medical and other societal costs of BPD are substantial[2] (also T.V.A., C.D., A.A., and Johannis Severens, PhD, unpublished data, September 2005). Suicide risk is estimated to be up to 10%.[3] A few treatments—outpatient dialectical behavior therapy[4-8] and psychoanalytically oriented treatments[9-11]—have demonstrated some effectiveness in randomized clinical trials of patients with BPD, as manifested by good treatment retention and reduced suicide attempts, acts of self-harm, and hospitalizations. However, no pharmacologic or psychosocial treatment has demonstrated efficacy for all aspects of BPD, such as affective, identity, and interpersonal disturbances.[12]

We compared the effectiveness of 2 prolonged outpatient treatments that aim at achieving full recovery from BPD: schema-focused therapy (SFT)[13-15] and transference-focused psychotherapy (TFP).[16,17] Schema-focused therapy is an integrative cognitive therapy, and TFP is a psychodynamically based psychotherapy. Both treatments intend to bring about a struc-

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tural change in patients' personality, which should be apparent not only from a decrease in self-destructive behaviors but also from reduced pathologic personality features, reduced general psychopathologic dysfunction, and increased quality of life. In designing this randomized controlled trial, we decided to compare SFT and TFP because (1) these treatments seemed promising after an uncontrolled pilot study and therapists' individual clinical experiences (now further supported by open studies[18-20]), (2) earlier studies already demonstrated that specialized psychotherapeutic approaches are more effective than control conditions (including treatment as usual and natural course),[4,7-9,21] and (3) no treatment as usual could control for treatment goals, intensity, and session frequency.

METHODS

STUDY DESIGN

A multicenter, randomized, 2-group design was used. Randomization to SFT or TFP was stratified across 4 community mental health centers and was performed by a study-independent person after the adaptive biased urn procedure.[22] We used this procedure (1) to keep allocation at each site unpredictable until the last patient to avoid unintentionally affecting ongoing screening procedures and (2) to keep the number of patients in balance between the conditions at each site. Each patient's first assessment occurred after inclusion and before randomization. Then, assessments were made every 3 months for 3 years by independent research assistants.

Therapists at secondary and tertiary community mental health institutes in the areas of the 4 participating treatment centers referred patients based on a clinical diagnosis of BPD. Patients were then assessed at each site (patients from The Hague were assessed in Leiden) using the Structured Clinical Interviews for the *DSM-IV*, versions I and II.[23-26] Patients were further screened using a semistructured clinical interview, the Borderline Personality Disorder Severity Index, fourth version (BPDSI-IV) (score range, 0-90)[27](also J.G.-B., Lieven Wachter, MSc, Erik Schouten, BSc, and A.A., unpublished data, July 2005).

All the study therapists were affiliated with 1 of the 4 treatment centers. Nine experienced and extensively trained therapists with a master's degree in psychology diagnosed patients (2 therapists in Amsterdam, 4 in Leiden/The Hague, and 3 in Maastricht). All of the interviews we used are highly reliable.[28-30] The BPDSI-IV cutoff score of 20 also discriminates patients with BPD from patients with other personality disorders (J.G.-B., Lieven Wachter, MSc, Erik Schouten, BSc, and A.A., unpublished data, July 2005), cross-checking the Structured Clinical Interview for the *DSM-IV*, version 2.0[24,26] BPD diagnosis. Self-report questionnaires (the Dissociative Experiences Scale[31] and the Dutch Screening List for Attention Deficit Hyperactivity Disorder for Adults[32]) were used in the screening process, if indicated, followed by the Structured Clinical Interview for *DSM-IV* Dissociative Disorders[33,34] or an adjusted semistructured interview for attention-deficit/hyperactivity disorder.[35] If low intelligence or illiteracy was suspected, the Wechsler Adult Intelligence Scale[36] or the Dutch Adult Reading Test[37] was administered. A positive screening procedure took 2 months, and this interval served as a patient's motivational check for undergoing intensive psychotherapy. Signed informed consent was obtained after full explanation of the procedures and of both therapies before the first assessment and randomization. Thirteen experienced and trained research assistants with higher vocational training in psychology assessed patients for treatment outcome measures (4 research assistants in Amsterdam, 5 in Leiden/The Hague, and 4 in Maastricht). Study researchers, screeners, research assistants, and SFT/TFP therapists were masked to treatment allocation during the screening procedure and the first assessment. The medical ethics committees of the participating centers approved the study. Participants did not receive compensation for screening or assessments but were exempt from the Dutch standard personal contribution to psychotherapy sessions (then $10 per session). Participating in assessments was obligatory to receiving therapy.

PATIENTS

Inclusion criteria were a main diagnosis of BPD, age 18 to 60 years, BPDSI-IV score greater than 20, and Dutch literacy. General exclusion criteria were psychotic disorders (except short, reactive psychotic episodes), bipolar disorder, dissociative identity disorder, antisocial personality disorder, attention-deficit/hyperactivity disorder, addiction of such severity that clinical detoxification was indicated (after which entering treatment was possible), psychiatric disorders secondary to medical conditions, and mental retardation. These disorders were excluded because they generally need primary treatment. An exception is antisocial personality disorder because its "lie" feature is an explicit contraindication for TFP. Comorbid Axis I and Axis II disorders were allowed, as was medication use.

TREATMENT CONDITIONS AND THERAPISTS

Both treatments were offered in 50-minute sessions twice a week. Treatment protocols addressed the theoretical model, treatment frame, different phases, and use of strategies and techniques.[13,14,16,17] Central to SFT is the assumption of 4 schema modes specific to BPD. Schema modes are sets of schemas expressed in pervasive patterns of thinking, feeling, and behaving. The distinguished modes in BPD are detached protector, punitive parent, abandoned/abused child, and angry/impulsive child. In addition, some presence of the healthy adult is assumed. Change is achieved through a range of behavioral, cognitive, and experiential techniques that focus on (1) the therapeutic relationship, (2) daily life outside therapy (also through homework assignments), and (3) past (traumatic) experiences. Recovery in SFT is achieved when dysfunctional schemas no longer control or rule the patient's life. Central to TFP is a negotiated treatment contract between patient and therapist, being the treatment frame. Change is achieved through analyzing and interpreting the transference relationship, focusing on the here-and-now context. Prominent techniques are exploration, confrontation, and interpretation. Recovery in TFP is reached when good and bad representations of self (and of others) are integrated and when fixed primitive internalized object relations are resolved.

Nine therapists treated 1 patient each (4 SFT and 5 TFP), 28 treated 2 patients each (17 SFT and 11 TFP), and 7 treated 3 patients each (2 SFT and 5 TFP), with no between-group differences ($P=.27$). Three therapists held doctoral degrees (1 SFT and 2 TFP), 37 held master's degrees (19 SFT and 18 TFP), and 4 held bachelor's degrees with postgraduate training (3 SFT and 1 TFP), with no between-group differences ($P=.42$). All the therapists had previous therapy experience in their orientation with patients with BPD (mean [SD]: SFT, 9.95 [4.98] years ; TFP, 11.73 [6.28] years), with no between-group differences ($P=.39$). There were significantly more female SFT therapists than TFP therapists (15 vs 7; $P=.04$), but without significantly contributing to treatment outcome ($P=.92$).

Two supervisors initially trained the therapists. Essential to both treatments is supervision. Weekly local supervision with

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4 to 5 SFT or TFP therapists, a 1-day central supervision every 4 months, and a 2-day central supervision every 9 months by Jeffrey Young, PhD (SFT), or Frank Yeomans, MD, PhD (TFP), were provided throughout the study. Psychiatrists from different orientations, including 2 SFT therapists and 3 TFP therapists, regularly evaluated the patients taking medication at the start and during treatment, prescribing according to good clinical practice, similar to American Psychiatric Association guidelines. No other concurrent treatments were allowed.

TREATMENT INTEGRITY CHECK

Treatment integrity was monitored by means of supervision. Randomly selected audiotapes of each quarter and of sessions 1 to 6 (for the TFP contract phase) for evaluation. All the raters were independent of the study and masked to treatment outcome. One psychologist, masked to allocation, listened to 1 randomly selected tape of each patient, then stated the treatment administered. Eighty-five tapes were correctly classified; 1 SFT tape was qualified TFP.

Thirty-three (partial) TFP contract phases were rated by trained graduate students in psychology using the Contract Rating Scale,[38] covering patient and therapist responsibilities during and threats to treatment. Seven contract phase tapes had extremely bad sound quality or were missing. Seventy-one ratings were analyzed, and the mean intraclass correlation coefficient (ICC) across 21 tapes was 0.46 (range, 0.17-0.67). The contract setting adherence and competence had an average rating of 3.22 (range, 2.86-3.54); a predetermined rating of 3 was considered adequate.[38,39]

Other trained therapists for each orientation assessed the TFP Rating of Adherence and Competence Scale[16] or the SFT Therapy Adherence and Competence Scale for BPD.[40] Both instruments consist of visual analog scale and Likert scale items and have an identical competence cutoff score of at least 60. Fifty-six TFP tapes and 77 SFT tapes of the second or sixth trimester were rated (ICCs across 21 TFP and 20 SFT tapes that were rated twice).

Adherence to TFP was expressed in time percentage of TFP techniques, naming dyad-actors, and emergency focus. Only an average of 7.5% of the time (median, 4%) was spent on non-TFP techniques (ICC=0.71). Valid actor naming occurred in 18 of 56 rated sessions (κ=0.36), and emergency focus was well kept (κ=0.91). The median competence level for different aspects of interventions, treatment frame modification, and emotional contact was 65.6 (ICC=0.73). The median global competence rating of the TFP therapists was 65 (ICC=0.70).

Adherence to SFT, as for overall appropriateness of used methods and techniques in SFT, was excellent (median, 90.00; ICC=0.76). No non-SFT techniques were observed. The median competence/quality level for applying SFT methods was 85.67 (ICC=0.69), and the median global competence/quality of SFT therapist ratings was 73.00 (ICC=0.78).

ASSESSMENT

The primary outcome measure was the score on the BPDSI-IV, a *DSM-IV* BPD criteria–based semistructured interview; this 70-item index represents the current severity and frequency of the *DSM-IV* BPD manifestations. The reference period is 3 months, which is appropriate in this study, and shows excellent psychometrics (Cronbach α=.85; interrater reliability, 0.99; validity and sensitivity to change)[27] (also J.G.-B., Lieven Wachter, MSc, Erik Schouten, BSc, and A.A., unpublished data, July 2005). Previous research[27] (also J.G.-B., Lieven Wachter, MSc, Erik Schouten, BSc, and A.A., unpublished data, July 2005) found a cutoff score[41] of 15 between patients with BPD and nonpatient controls, with a specificity of 0.97 and a sensitivity of 1.00. The recovery criterion was, therefore, defined as achieving a BPDSI-IV score of less than 15 and maintaining this score until the last assessment. A second criterion was reliable change,[41] which reflects individual clinically significant improvement. For the BPDSI-IV, reliable change was achieved when improvement was at least 11.70 points at the last assessment.[41]

A secondary outcome measure was quality of life, assessed by means of 2 widely used and psychometrically sound self-report questionnaires: the EuroQol thermometer[42] and the World Health Organization quality of life assessment (WHOQOL).[43] The vertical EuroQol thermometer rating indicates one's experience level between best (100 points) and worst (0 points) imaginable health status. The WHOQOL is a 100-item self-report questionnaire, and through the domains of physical health, psychological health, environment, personal convictions, social relationships, and extent of independency, the WHO concept of quality of life is assessed. Other secondary outcome measures were assessed at 6-month instead of 3-month intervals and consisted of general psychopathologic measures and measures of SFT/TFP personality concepts, all in self-report format and with robust psychometric properties. More general measures included the BPD Checklist on the burden of BPD-specific symptoms,[27] the Symptom Checklist-90 for subjective experience of general symptoms,[44] the Rosenberg Self-Esteem Scale,[45] and the Miskimins Self-Goal(-Other) Discrepancy Scale for the difference between one's actual and desired/ideal self-perception.[46] Theory-specific instruments were the Young Schema Questionnaire on schemas underlying Young's theory,[47,48] the Personality Disorder Belief Questionnaire–BPD section on BPD-specific beliefs derived from the Beck cognitive theory of personality disorders,[49] the Inventory of Personality Organization–borderline character pathology reflecting the facets of psychoanalytical borderline organizational structure developed after Kernberg's theory,[50] and the Defense Style Questionnaire (DSQ)–48 for mature, neurotic, and immature defense mechanism use in daily life.[51] Principal component analysis of pretest secondary variables[44-51] (also J.G.-B., Lieven Wachter, MSc, Erik Schouten, BSc, and A.A., unpublished data, July 2005) revealed 1 strong factor, on which only DSQ–mature defenses did not load (loading, 0.15). Similar results were found when analyzing the linear trends of these variables: 1 strong factor and loading of 0.01 for DSQ–mature defenses. Highly similar results were obtained when other assessment points were analyzed. After excluding DSQ–mature defenses, the pretest factor's eigenvalue was 7.51 (57.8% variance), with factor loadings of 0.47 to 0.93 (median, 0.78). The linear trend factor's eigenvalue was 8.63 (66.4%), with factor loadings of 0.49 to 0.95 (median, 0.82). Composite scores for pretest, last observation, and linear trends were derived by computing factor scores using the regression method, and they are labeled *psycho- and personality pathology*.

SAMPLE SIZE AND DATA ANALYSIS

The BPDSI-IV–based power analyses indicated that 45 patients per group are needed to detect a 22% vs 50% recovery difference between 2 groups by means of survival analysis, with a 2-sided significance level of 5% and a power of 80%. An intention-to-treat approach was applied, using either the last observation during the 3-year treatment period or the last-observation-carried-forward method for trend analyses. First, treatment dropout survival analysis using Kaplan-Meier logistic regression (because of time dependency) was executed. Second, the effects of each treatment were evaluated using the McKean Schrader Test Statistic (MSTS)[52] on the medians of pre-post changes. Then, Cox regression survival analyses on the BPDSI-IV recovery status and reliable change status for 3 years

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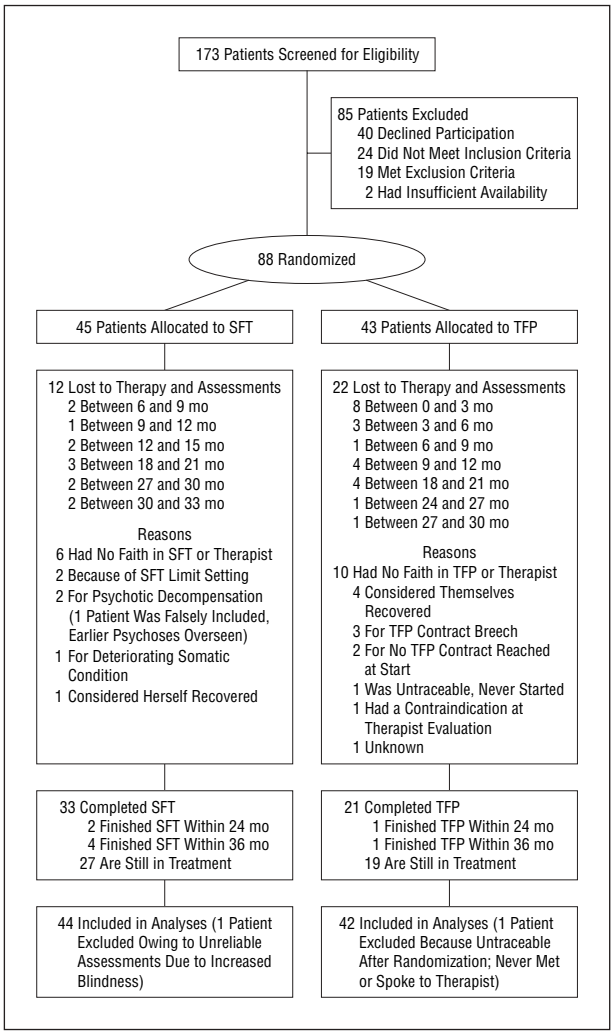

Figure 1. Patient flow in the randomized controlled trial. SFT indicates schema-focused therapy; TFP, transference-focused psychotherapy.

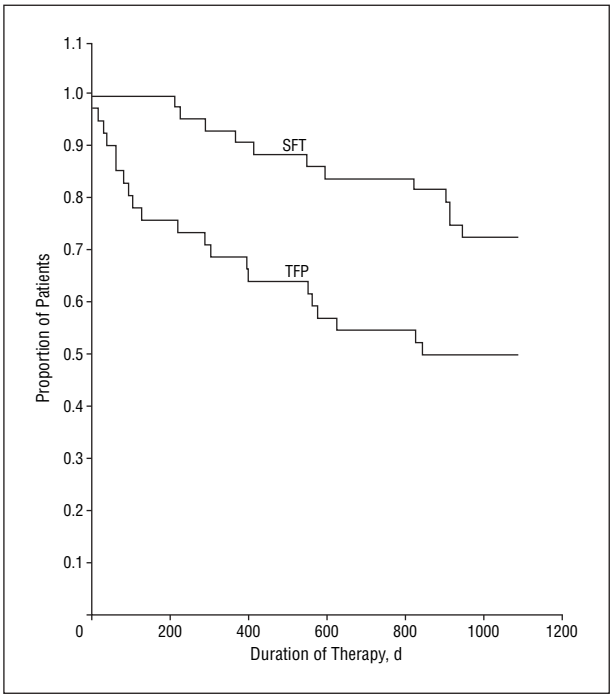

Figure 2. Proportion of patients undergoing transference-focused psychotherapy (TFP) and schema-focused therapy (SFT).

after the start of treatment, with treatment group as the covariate, were executed. Time independency of relative risks (RRs) was checked. Between-group differences for outcome measures were examined using end point analyses and by analyzing the slopes of linear trend scores across all assessments during the 3 years because all linear trends on outcome measures differed significantly from zero in both conditions (Wilcoxon $z>1.97$; $P<.05$), except for DSQ–mature defenses (SFT: $P=.90$; TFP: $P=.50$). Therefore, outcome measures assessed every 3 (or 6) months were first transformed into linear trend scores, representing the linear change of these measures (except DSQ–mature defenses) during the 3-year study.

Heteroscedasticity, skewness of distributions, regression outliers, and leverage point analyses revealed that assumptions for parametric tests were not met. Robust analyses of covariance were, therefore, used, with pretest as the covariate, using Wilcox analysis of covariance (ANCOVA) on medians.[52,53] All the tests were interpreted with a significance level of 5%. Analyses were performed using SPSS version 11.5 for Windows (SPSS Inc, Chicago, Ill) (survival analyses, within-group analyses, and χ^2 tests) and the Rplus (R Foundation for Statistical Computing, Vienna, Austria; http://www.r-project.org/) and Rallfun (Rand R. Wilcox, Department of Psychology, University of Southern California, Los Angeles; http:psychology.usc.edu/faculty_homepage.php?id=43) Package, version 2.0.0, with extensions v1.v3 and v2.v3 (Wilcox ANCOVAs on medians).

RESULTS

PATIENT ACCRUAL

The study was conducted between September 1, 1999, and April 30, 2004. Patient flow is presented in **Figure 1**. Of 173 patients referred to the study centers, 40 (23.1%) declined participation (12 patients after initial contact and 28 after having 1 or more appointments in the screening procedure). Another 45 patients (26.0%) were not eligible for participation: 2 could not commit themselves to assessments every 3 months, 24 did not meet the inclusion criteria (14 had no BPD diagnosis, 1 had an anorexia nervosa diagnosis that became life-threatening during the screening procedure and required immediate longer-term hospitalization, 1 was 17 years old, and 8 had BPDSI-IV scores <20), and 19 met the exclusion criteria (6 had bipolar disorder, 1 had psychotic disorder, 1 had valium addiction and refused detoxification, 2 had dissociative identity disorder, 7 had antisocial personality disorder, and 2 had attention-deficit/hyperactivity disorder). Eighty-eight patients (50.9%) participated in the study. Primary and secondary outcome variables and sociodemographic characteristics did not differ significantly among treatment centers. One SFT patient and 1 TFP patient were excluded from the analyses; the SFT patient's poor eyesight made assessments unreliable, and the TFP patient became untraceable after randomization.

Six (13.6%) of 44 SFT patients and 2 (4.8%) of 42 TFP patients successfully terminated treatment within 3 years, only coded as such when patient and therapist agreed on termination. No treatment was terminated because the therapist thought the patient was ready to end or owing

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Table 1. Sociodemographic and Clinical Characteristics of 86 Study Participants[a]

	Schema-Focused Therapy Group (n = 44)	Transference-Focused Psychotherapy Group (n = 42)	*P* Value
Age, mean (SD), y	31.70 (8.9)	29.45 (6.5)	.15[b]
Women	40 (90.9)	40 (95.2)	.43[b]
Education			
Graduate/professional	6 (13.6)	4 (9.5)	
College graduate	3 (6.8)	7 (16.7)	
Some college	17 (38.6)	14 (33.3)	.22[b]
High school graduate	5 (11.4)	10 (23.8)	
Grades 7-11	13 (29.6)	7 (16.7)	
Employment status			
Housewife	8 (18.2)	5 (11.9)	
Student	3 (6.8)	6 (14.3)	
Employed	9 (20.5)	8 (19.0)	.89[b]
Disability	17 (38.6)	17 (40.5)	
Welfare	7 (15.9)	6 (14.3)	
Psychotropic medication use at baseline	34 (77.3)	30 (71.4)	.87[b]
Recent suicide planning, steps, or attempts[c]	17 (38.6)	32 (76.2)	.007[d]
Recent nonsuicidal self-injury[e]	21 (47.7)	24 (57.1)	.09[d]
Meeting *DSM-IV* BPD criterion 5	31 (70.5)	33 (78.6)	.39[b]
Childhood sexual abuse[f]	31 (70.5)	26 (61.9)	.40[b]
Childhood physical abuse[f]	40 (90.9)	37 (88.1)	.67[b]
Childhood emotional abuse or neglect[f]	42 (95.5)	37 (88.1)	.21[b]
No. of Axis I diagnoses, mean (SE) [95% CI]	2.95 (0.23) [2.49-3.42]	2.40 (0.25) [1.89-2.92]	.11[g]
No. of Axis II diagnoses (BPD included), mean (SE) [95% CI]	2.14 (0.18) [1.78-2.49]	2.05 (0.18) [1.68-2.42]	.73[g]
No. of SCID II BPD criteria, mean (SE) [95% CI]	6.70 (0.16) [6.38-7.03]	7.12 (0.19) [6.72-7.52]	.23[g]
No. of treatment modalities before baseline, mean (SE) [95% CI][h]	3.00 (0.19) [2.61-3.39]	2.79 (0.20) [2.38-3.20]	.45[g]

Abbreviations: BPD, borderline personality disorder; BPDSI-IV, Borderline Personality Disorder Severity Index, fourth version; CI, confidence interval; SCID II PD, Structured Clinical Interview for *DSM-IV* Axis II Personality Disorders.

[a]Data are given as number (percentage) except where otherwise indicated.
[b]Based on the Pearson χ^2 test.
[c]According to BPDSI-IV items 5.1 to 5.8 in the previous 3 months.
[d]Based on the Mann-Whitney test.
[e]According to BPDSI-IV items 5.11 to 5.13 in the previous 3 months.
[f]Assessed using the structured childhood trauma interview.
[g]Based on analysis of variance.
[h]Range, 0 to 6; individual treatment, group treatment, family/couples therapy, daily medication, clinical treatment, and otherwise.

to refusal of assessments. Twenty-seven SFT patients (61.4%) and 19 TFP patients (45.2%) were still in treatment after 3 years. So-called completer SFT patients (terminated treatment or still in treatment) had significant fewer therapy sessions than completer TFP patients (median: 189.5 vs 231.0; MSTS=3.12; P=.002). When patients dropped out of treatment can be read from Figure 1 and **Figure 2**. No patient committed suicide. Survival analyses on the attrition rates show that TFP patients have a significantly larger risk of dropout than SFT patients (Kaplan-Meier method; log-rank statistic=6.15; P=.01) (Figure 2). The SFT dropout patients had significantly more sessions than TFP dropout patients (median: 98 vs 34; MSTS=3.53; P<.001).

TREATMENT GROUPS AT BASELINE

Table 1 gives an overview of patients' characteristics in both conditions at baseline. Age, sex, educational level, employment status, and psychotropic medication use did not differ significantly between treatment groups. Patients were mainly women in their 20s and 30s with average educational levels. The treatment groups had similar levels of BPD abnormality, quality of life, and psycho- and personality pathology. Numbers of comorbid Axis I and Axis II disorders were equally distributed. A recent history of automutilating was significantly different between groups but had no effect on BPDSI-IV treatment outcome (P=.22).

TREATMENT OUTCOMES

Results of the primary and secondary outcome measures are given in **Table 2** and **Figure 3**. Significant effects after 3 years of SFT or TFP emerged for patients' reduction of BPDSI scores (SFT: MSTS=–9.81, P<.001, Cohen d=2.96; TFP: MSTS=–5.99, P<.001, d=1.85), improvement in quality of life (EuroQol thermometer score: SFT:MSTS=6.09, P=.001, d=1.84; TFP: MSTS=2.06, P=.044, d=0.64; WHOQOL total score: SFT:MSTS=4.86, P<.001, d=1.46; TFP:MSTS=3.73, P<.001, d=1.16), and reduction in psycho- and personality pathology (SFT: MSTS=–6.73, P<.001, d=2.02; TFP: MSTS=–2.75, P<.006, d=0.84). Both SFT and TFP patients improved significantly on all *DSM-IV* BPD criteria (P<.001 on all the BPDSI-IV subscales) (**Figure 4**). All effects were already apparent after 1 year.

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Table 2. Primary and Secondary Outcome Measures in 86 Study Participants[a]

	Schema-Focused Group (n = 44)	Transference-Focused Group (n = 42)	*P* Value
Recovery criterion 15, yes, No. (%)	20 (45.5)	10 (23.8)	.04[b]
Reliable change, yes, No. (%)	29 (65.9)	18 (42.9)	.03[b]
BPDSI-IV total score (range, 0-90)[c]			
Baseline	33.53 (1.23) [31.12 to 35.94]	34.37 (1.23) [31.96 to 36.78]	
12-mo treatment	22.18 (1.67) [18.91 to 25.45]	25.13 (1.76) [21.68 to 28.58]	.01[d,e]
24-mo treatment	17.77 (1.21) [12.32 to 20.14]	23.38 (1.79) [19.87 to 26.89]	
36-mo treatment	16.24 (1.51) [13.28 to 19.20]	21.87 (1.71) [17.95 to 25.79]	.005[d,f]
EuroQol thermometer score (range, 0-100)[f]			
Baseline	50 (3.29) [43.55 to 56.45]	55 (2.72) [49.67 to 60.33]	
12-mo treatment	56 (2.52) [51.06 to 60.94]	64 (4.85) [54.49 to 73.51]	<.001[d,e]
24-mo treatment	65 (3.49) [58.16 to 71.84]	69 (4.85) [59.49 to 78.51]	
36-mo treatment	64.5 (4.66) [55.37 to 73.63]	67.5 (2.91) [61.80 to 73.20]	.70[d,f]
WHOQOL total score (range, 4-20)[g]			
Baseline	10.33 (0.19) [9.96 to 10.70]	10.42 (0.09) [10.24 to 10.60]	
12-mo treatment	11.17 (0.26) [10.66 to 11.68]	11.17 (0.19) [10.80 to 11.54]	.03[d,e]
24-mo treatment	11.42 (0.36) [10.71 to 12.13]	11.23 (0.26) [10.72 to 11.74]	
36-mo treatment	11.59 (0.29) [11.02 to 12.16]	11.09 (0.19) [10.72 to 11.46]	.16[d,f]
Psycho- and personality factor score[h]			
Baseline	0.36 (0.06) [0.24 to 0.48]	0.64 (0.13) [0.15 to 0.89]	
12-mo treatment	−0.14 (0.18) [−0.49 to 0.21]	0.22 (0.13) [−0.03 to 0.47]	<.001[d,e]
24-mo treatment	−0.39 (0.16) [−0.70 to −0.08]	−0.02 (0.15) [−0.31 to 0.27]	
36-mo treatment	−0.56 (0.12) [−0.80 to −0.32]	0.13 (0.18) [−0.22 to 0.48]	.007[d,f]

Abbreviations: ANCOVA, analysis of covariance; BPDSI-IV, Borderline Personality Disorder Severity Index, fourth version; CI, confidence interval; WHOQOL, World Health Organization quality of life assessment.

[a]Data are given as median (SE) [95% CI] except where otherwise indicated. Yearly assessments instead of assessments every 3 months are depicted to save space.

[b]Based on the Pearson χ^2 test.

[c]Higher scores indicate more severe borderline personality disorder abnormalities.

[d]Based on Wilcox ANCOVA: robust ANCOVA[39,40] based on Wilcox Rallfun package (Rand R. Wilcox, Department of Psychology, University of Southern California, Los Angeles; www-rfc.usc.edu/~rwilcox/).

[e]Linear trend Wilcox ANCOVA on medians on 13 assessments (psycho- and personality pathology, 7 assessments).

[f]End point Wilcox ANCOVA on medians.

[g]Higher scores indicate higher levels of quality of life.

[h]Higher scores indicate more psycho- and personality pathology.

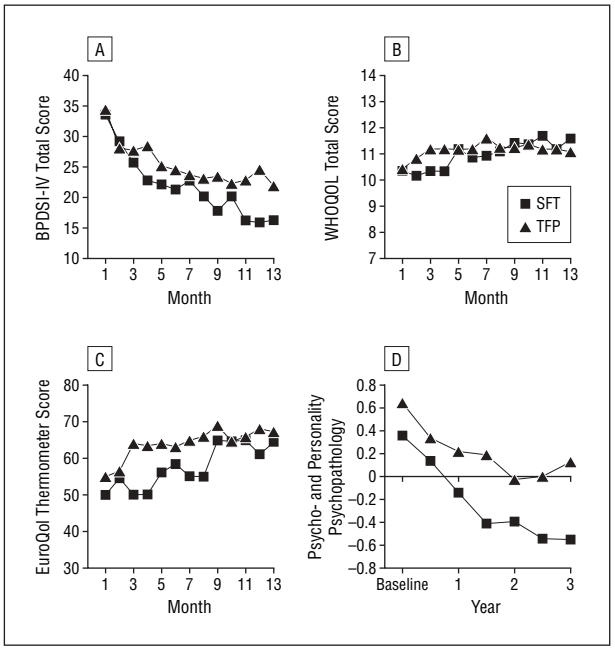

Figure 3. Median primary and secondary outcome measure scores. A, Borderline Personality Disorder Severity Index, fourth version (BPDSI-IV) total scores (range, 0-90). B, World Health Organization quality of life assessment (WHOQOL) total scores (range, 4-20). C, EuroQol thermometer scores (range, 0-100). D, Composite psycho- and personality pathology factor scores. SFT indicates schema-focused therapy; TFP, transference-focused psychotherapy.

Survival analysis on the BPDSI-IV recovery criterion with treatment group and baseline BPDSI-IV as predictors (covariates) showed a significant effect in favor of SFT (Wald statistic=3.88; *P*=.049; RR=2.15; 95% confidence interval [CI], 1.00-4.59); baseline BPDSI-IV was not significant (*P*=.38) (Figure 4). Without baseline BPDSI-IV, the group effect was comparable (Wald statistic=4.04; *P*=.04; RR=2.18; 95% CI, 1.02-4.66). Differential dropout can only partly explain the difference between treatments because survival analysis with dropout status as an additional covariate was not significant for dropout, and the group effect became nonsignificant, although still in the same direction (group Wald statistic=2.67; *P*=.10; RR=1.91; 95% CI, 0.88-4.14 and dropout Wald=1.90; *P*=.17; RR=1.84; 95% CI, 0.77-4.35). The group effect persisted when the analysis was adjusted for the use of psychotropic medication as a time-dependent covariate (13 assessments; Wald statistic=4.42; *P*=.04; RR=2.26; 95% CI, 1.06-4.85). Baseline BPDSI-IV was not significant (*P*=.33). Psychotropic medication use had a significant negative effect on recovery (Wald statistic=6.21; *P*=.01; RR=0.38; 95% CI, 0.18-0.81): 55% of patients who did not use medication at the start recovered compared with 28% of those using medication. The treatment group × medication interaction was not significant. Patient use of psychotropic medications across time is shown in **Figure 5**. In addition, 1 TFP patient started taking a

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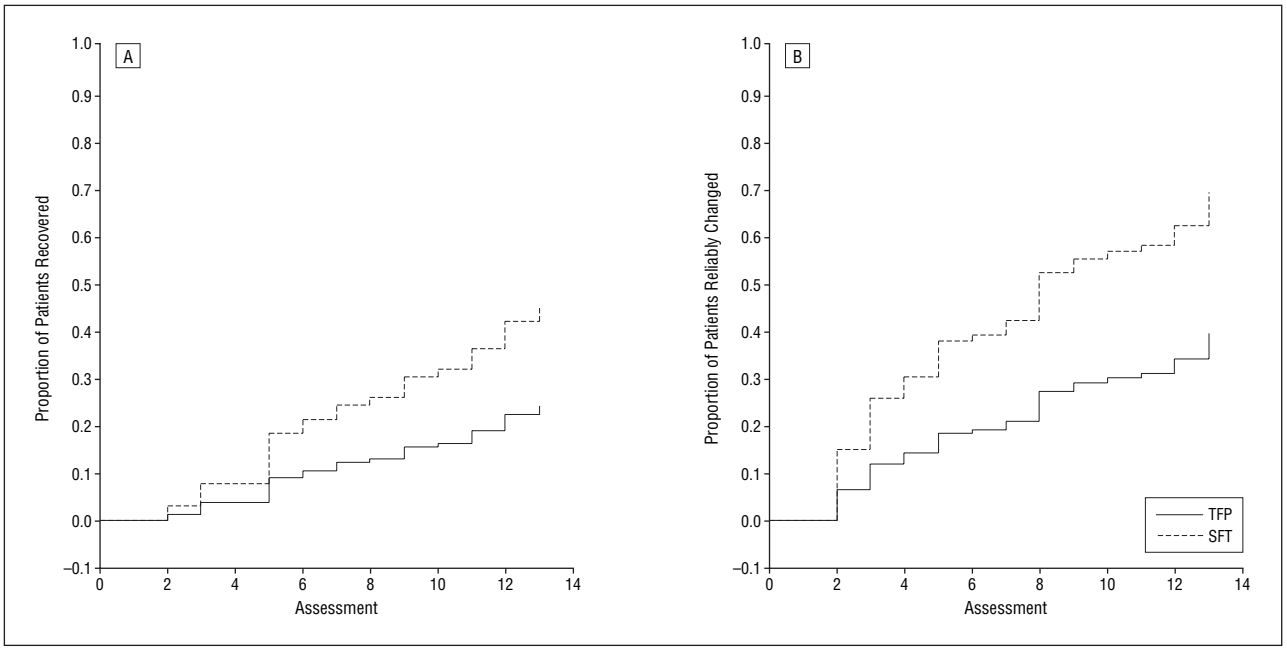

Figure 4. Proportion of patients recovered (A) and reliably changed (B) for transference-focused psychotherapy (TFP) and schema-focused therapy (SFT), adjusted for baseline Borderline Personality Disorder Severity Index, fourth version, score.

mood stabilizer 3 months after the start of treatment and continued throughout the study.

Survival analysis on reliable change status and baseline BPDSI-IV again showed an SFT effect (Figure 4) (Wald statistic=6.90; P=.009; RR=2.33; 95% CI, 1.24-4.37). As expected for the BPDSI-IV–based reliable change criterion, baseline BPDSI-IV had a significant effect (Wald statistic=15.01; P<.001; RR=1.07; 95% CI, 1.03-1.10). The SFT effect remained after including time-dependent psychotropic medication use (SFT Wald statistic=7.40; P=.007; RR=2.38; 95% CI, 1.27-4.43; medication Wald statistic=8.54; P=.003; RR=0.40; 95% CI, 0.22-0.74). Time × RR interactions were not significant (recovery, P=.13; reliable change, P=.20).

Results of the Wilcox ANCOVA on BPDSI-IV medians of the last observation again proved that SFT is more effective than TFP (MSTS=2.83; P=.005; d=0.62). Subsequent linear trend analysis using Wilcox ANCOVA on the BPDSI-IV of all 13 assessments demonstrated a similar group effect in favor of SFT (MSTS=2.66; P=.01; d=0.58). Wilcox robust ANCOVA tests at the last observation of all median BPDSI-IV subscale scores revealed that the SFT group improved significantly more than the TFP group with respect to abandonment fears (P=.04), relationships (P=.03), identity disturbance (P=.02), impulsivity (P=.03), (para)suicidal behavior (P=.048), and dissociative and paranoid ideation (P=.02) (**Figure 6**). No significant group differences were found for the other subscales, although on anger a trend in favor of SFT was observed (P=.06).

The Wilcox ANCOVA on EuroQol thermometer 3-year treatment medians did not show a group effect. However, the linear trend analysis using Wilcox ANCOVA on the EuroQol thermometer medians across 3 years revealed a significantly sharper increase in ratings for the SFT group than for the TFP group (MSTS=2.16; P=.03; d=0.46). A small crossing effect was observed on the WHOQOL: SFT patients had slightly lower total scores than TFP patients at baseline and slightly higher total scores after 3 years of treatment. No statistically significant group effect emerged when the last observation medians were compared using Wilcox ANCOVA, and SFT had a stronger increase than TFP when the linear trend across all WHOQOL assessments was analyzed using Wilcox ANCOVA (P<.001).

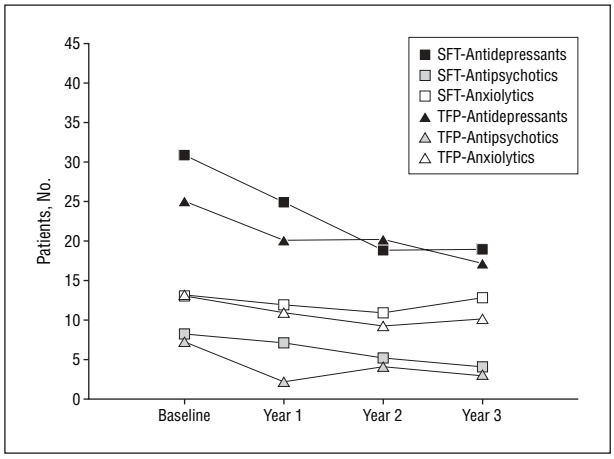

Figure 5. Patients using psychotropic medications by condition. SFT indicates schema-focused therapy; TFP, transference-focused psychotherapy.

Wilcox ANCOVA on psycho- and personality pathology factor scores of last observation medians showed a significantly larger effect for SFT than for TFP (MSTS=2.68; P=.007; d=0.58). Linear trend analysis on the psycho- and personality pathology factor scores across 3 years using Wilcox ANCOVA showed a significantly steeper decline for the SFT group than for the TFP group (MSTS=3.30; P<.001; d=0.72) (Figure 3).

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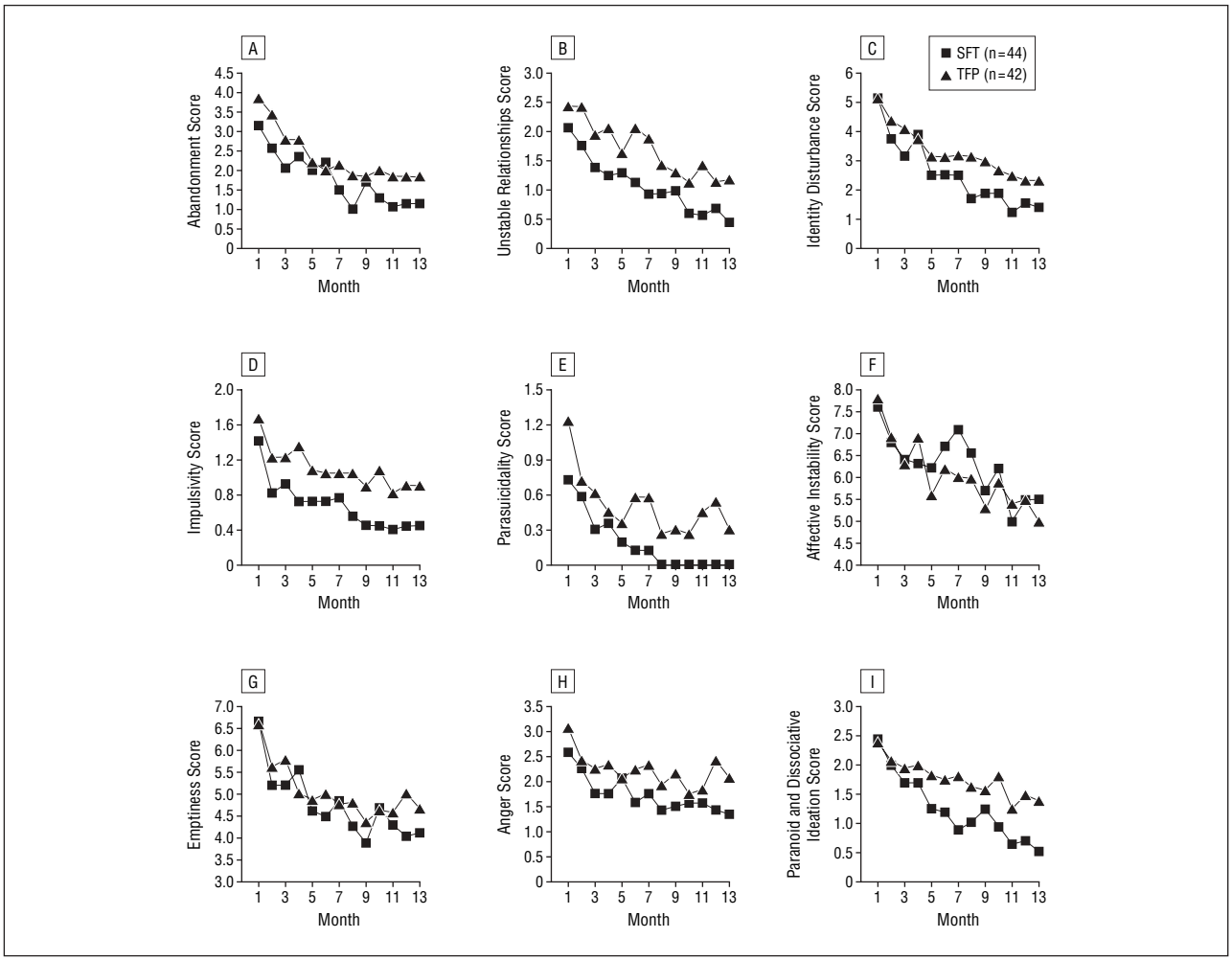

Figure 6. Median Borderline Personality Disorder Severity Index, fourth version (BPDSI-IV), subscale scores: abandonment (A), unstable relationships (B), identity disturbance (C), impulsivity (D), parasuicidality (E), affective instability (F), emptiness (G), anger (H), and paranoid and dissociative ideation (I). SFT indicates schema-focused therapy; TFP, transference-focused psychotherapy.

COMMENT

Three years of SFT or TFP proved to bring about a significant change in patients' personality, shown by reductions in all BPD symptoms and general psychopathologic dysfunction, increases in quality of life, and changes in associated personality features. Using intention-to-treat analysis with adjustments for baseline assessments, SFT and TFP effectiveness became apparent at 12 months of treatment and was further extended at 3 years of treatment. Schema-focused therapy was superior to TFP with respect to reduction in BPD manifestations, general psychopathologic dysfunction, and change in SFT/TFP personality concepts. All in all, it seems that changes in manifest (BPD) psychopathologic dysfunction go hand in hand with changes in pathologic personality features. An explanation may be that both treatments address the level of personality, not merely the "surface" symptom level. Schema-focused therapy was not consistently dominant over TFP with respect to patients' improved quality of life, as trend and end point analyses yielded different results.

Schema-focused therapy had a significantly lower attrition rate than TFP. However, both treatments demonstrate that patients with BPD can be motivated for and continue prolonged outpatient treatment. To our knowledge, this is the first 3-year controlled treatment effectiveness study for BPD. An additional 1-year follow-up after the initial 3-year treatment has recently been completed. The cost-effectiveness of SFT and TFP will then be determined.

Caution is recommended when comparing the current findings with study results[4-11] on outpatient dialectical behavior therapy (DBT) and psychoanalytically oriented mentalization-based treatment (MBT). Most essential is a different primary aim in DBT and MBT, namely, to reduce the self-destructive psychopathologic dysfunction of BPD and not its overall personality change. Comparisons are further hampered by differences in treatment setting (outpatient vs partial hospitalization in MBT), time investment/intensity for the patient (eg, >4 hours weekly in MBT, at least 3 to 3½ in DBT, and 2 in SFT and TFP), number of therapists involved (MBT>DBT>SFT/TFP), use of (severity) outcome measures, and studied treatment duration (1 year for DBT, 1½ years for MBT, and 3 years for

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SFT/TFP). Still, it remains that the present study established effectiveness for all aspects of BPD pathology and, moreover, quality of life with large treatment effect sizes. Regarding attrition rates and reduction of (para) suicidality (BPDSI-IV subscales impulsivity and parasuicidality), SFT holds up well compared with other BPD treatments studies.[4-9] It can be argued that DBT and MBT are possibly most optimal for a subgroup of patients with BPD who have prominent parasuicidal abnormalities, whereas SFT and TFP are meaningful for the wide range of patients with BPD. The 1-year attrition rate of the present TFP group seems to be similar to that in an uncontrolled TFP study by Clarkin et al[18] (the difference was not significant; $\chi^2_{1,60}=0.33$; $P=.57$), although comparing is problematic because patients in the uncontrolled TFP study knew beforehand what therapy they would receive and that the free study treatment period was limited to 1 year. Regarding (para)suicidal behavior (BPDSI-IV subscale), our TFP patients' improvement seems to be larger than that in the uncontrolled TFP study (1-year *d*: Clarkin et al TFP, 0.15-0.46; present study TFP, 0.67). Compared with 1 year of cognitive therapy,[54,55] our data indicate that SFT and TFP seem to yield better results with respect to a study's main outcome measures (1-year *d*: SFT, 0.43-1.03; TFP, 0.09-0.99; and cognitive therapy, 0.22-0.55).[18,54,55] A single case series of 18 to 36 months of SFT with large effect sizes (1.8-2.9) further support the potential of SFT in treating BPD.[20] Psychotropic medication use was related to poorer outcome (but unrelated to BPD severity at baseline). Whether more difficult-to-treat patients are generally taking medication, whether medication counteracts psychotherapy,[56] or whether other factors are involved remains unclear.

Despite that 30 patients had reached the BPDSI-IV recovery criterion, many were still in treatment after 3 years. First, patient and therapist were masked to assessment results to avoid unintentionally affecting study participants. Second, changing BPD symptoms is one thing, but installing safe attachment, functional conscience, and functional and positive self- and other views is another thing. For example, self-mutilation or relation crises may have stopped, but this does not mean that a patient's self-esteem has risen.

A limitation of this study is that most research assistants learned their patients' treatment allocation as the study progressed, as patients talked about their treatment and therapists. However, the results of secondary computer-assessed self-report measures (in an individual, private setting) concurred with the observer-rated (interview) findings, making it unlikely that results can be contributed to knowledge of treatment allocation. In addition, study psychiatrists were not per se masked to patient treatment allocation. A third limitation is the absence of a natural-course control group.

Recently, Zanarini and colleagues[57] found that symptomatic improvement in BPD phenomenology is common and stable among patients with BPD during a 6-year natural-course follow-up. A difficulty in interpreting the findings of Zanarini and colleagues is whether improvement is the natural course in BPD or the result of received treatments or other factors. Note that previous studies found specialized psychotherapy to be superior to natural-course or control treatments.[4,7-9,21] Moreover, the differences in outcome between SFT and TFP are due to treatment, otherwise results should have been the same after 3 years of treatment.

In conclusion, this study contributes to a positive treatment perspective for BPD by lending support to SFT as a valid evidence-based practice. However, straightforward recommendations for clinical practice cannot and should not be made on the basis of only 1 effectiveness study. More research is needed to replicate and subsequently solidify current findings, for example, comparisons of SFT/TFP with other specific BPD treatments, treatment as usual, and the natural course. Furthermore, possible adjustments within the treatment frames could be explored, as health care efficiency is the target of many countries' policies and economics. Hypothesized effective ingredients of SFT for patients with BPD may be (1) the model's transparency, (2) the therapist's "reparenting" attitude on the attachment issues of patients with BPD, (3) the many hands-on techniques/strategies that offer a patient structure and control, and (4) the opportunity to contact the SFT therapist (within limits) between sessions. Future research needs to identify factors that facilitate optimal treatment indication.

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Correction

Errors in Table and Figure. In the Original Article by Giesen-Bloo et al titled "Outpatient Psychotherapy for Borderline Personality Disorder: Randomized Trial of Schema-Focused Therapy vs Transference-Focused Psychotherapy," published in the June issue of the ARCHIVES (2006;63:649-658), there were several errors in **Table 1**. The table is reprinted correctly as follows. Furthermore, neither recent suicide planning, steps, or attempts nor recent nonsuicidal self-injury were significantly related to recovery from borderline personality disorder or changed the difference between schema-focused therapy and transference-focused psychotherapy when these variables were entered alone or in combination in the survival analyses. In all analyses, schema-focused therapy remained superior to transference-focused psychotherapy. Treatment group by suicidal or self-injury manifestation interaction was not significant. In addition, the x-axis label in Figure 3A, B, and C should have been "Assessment" rather than "Month." The ARCHIVES regrets these errors.

Table 1. Sociodemographic and Clinical Characteristics of 86 Study Participants[a]

	Schema-Focused Therapy Group (n = 44)	Transference-Focused Psychotherapy Group (n = 42)	*P* Value
Age, mean (SD), y	31.70 (8.89)	29.45 (6.47)	.15[b]
Women	40 (90.9)	40 (95.2)	.43[b]
Education			
Graduate/professional	6 (13.6)	4 (9.5)	
College graduate	3 (6.8)	7 (16.7)	
Some college	17 (38.6)	14 (33.3)	.22[b]
High school graduate	5 (11.4)	10 (23.8)	
Grades 7-11	13 (29.6)	7 (16.7)	
Employment status			
Housewife	8 (18.2)	5 (11.9)	
Student	3 (6.8)	6 (14.3)	
Employed	9 (20.5)	8 (19.0)	.89[b]
Disability	17 (38.6)	17 (40.5)	
Welfare	7 (15.9)	6 (14.3)	
Psychotropic medication use at baseline	34 (77.3)	30 (71.4)	.87[b]
Recent suicide planning, steps, or attempts[c]	17 (38.6)	24 (57.1)	.09[b]
Recent nonsuicidal self-injury[d]	21 (47.7)	32 (76.2)	.007[b]
Meeting *DSM-IV* BPD criterion 5	31 (70.5)	33 (78.6)	.39[b]
Childhood sexual abuse[e]	31 (70.5)	26 (61.9)	.40[b]
Childhood physical abuse[e]	40 (90.9)	37 (88.1)	.67[b]
Childhood emotional abuse or neglect[e]	42 (95.5)	37 (88.1)	.21[b]
No. of Axis I diagnoses, mean (SE) [95% CI]	2.95 (0.23) [2.49-3.42]	2.40 (0.25) [1.89-2.92]	.11[f]
No. of Axis II diagnoses (BPD included), mean (SE) [95% CI]	2.14 (0.18) [1.78-2.49]	2.05 (0.18) [1.68-2.42]	.73[f]
No. of SCID II BPD criteria, mean (SE) [95% CI]	6.70 (0.16) [6.38-7.03]	7.12 (0.19) [6.72-7.52]	.23[f]
No. of treatment modalities before baseline, mean (SE) [95% CI][g]	3.00 (0.19) [2.61-3.39]	2.79 (0.20) [2.38-3.20]	.45[f]

Abbreviations: BPD, borderline personality disorder; BPDSI-IV, Borderline Personality Disorder Severity Index, fourth version; CI, confidence interval; SCID II PD, Structured Clinical Interview for *DSM-IV* Axis II Personality Disorders.
[a]Data are given as number (percentage) except where otherwise indicated.
[b]Based on the Pearson χ^2 test.
[c]According to BPDSI-IV items 5.11 to 5.13 in the previous 3 mo.
[d]According to BPDSI-IV items 5.1 to 5.8 in the previous 3 mo.
[e]Assessed using the structured childhood trauma interview.
[f]Based on analysis of variance.
[g]Range, 0 to 6; individual treatment, group treatment, family/couples therapy, daily medication, clinical treatment, and otherwise.

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