Behavioural and Cognitive Psychotherapy, 2014, 42, 355–367
First published online 5 March 2013 doi:10.1017/S1352465813000027

Responding to the Treatment Challenge of Patients with Severe BPD: Results of Three Pilot Studies of Inpatient Schema Therapy

Neele Reiss and Klaus Lieb

University Medical Center Mainz, Germany

Arnoud Arntz

Maastricht University, The Netherlands

Ida A. Shaw and Joan Farrell

Indiana University School of Medicine/Midtown CMHC, Schema Therapy Institute Midwest, Indianapolis, USA

Background: Schema Therapy (ST), a psychotherapy model integrating cognitive, experiential and behavioural interventions, was initially developed and evaluated as an outpatient treatment for patients with severe and chronic disorders, among them Borderline Personality Disorder (BPD). Two randomized controlled trials have demonstrated the effectiveness of ST for BPD, delivered in an individual or group format, in the outpatient setting. However, the most severely impaired BPD patients are referred to inpatient treatment due to suicidality and severe self-harm. Specialized inpatient treatment programs are limited, with little evaluative research. **Aims:** The pilot studies are designed to be first steps in naturalistic clinical settings to evaluate the effects of an intensive inpatient ST treatment program. **Method:** This report presents the results of three independent uncontrolled pilot studies with a total of 92 BPD patients. The programs combine individual and group modalities and are consistent theoretically with the ST model for BPD patients. **Results:** Results show that inpatient ST can significantly reduce symptoms of severe BPD and global severity of psychopathology with effect sizes ranging from Cohen's $d = 2.84$ to Cohen's $d = .43$. **Conclusions:** Differences in the effect sizes across the three pilot studies could be explained by length of treatment, number of group psychotherapists and their training. Although there are limitations to the presented pilot studies such as differences in the samples, treatment settings, variations in the treatment itself and the use of different measures, which may have influenced outcome, they are a starting point for describing and evaluating inpatient treatment for BPD in naturalistic settings.

Reprint requests to Neele Reiss, Goethe University Frankfurt, Department of Psychological Diagnostics, Postbox 111932, 60054 Frankfurt, Germany. E-mail. n.reiss@psych.uni-frankfurt.de

Introduction

Borderline personality disorder (BPD) is a serious mental disorder, which is both disabling and prevalent (Lieb, Zanarini, Schmahl, Linehan and Bohus, 2004). Individuals with BPD demonstrate pervasive psychopathology, spanning multiple phenomenological sectors, including emotional dysregulation, anxiety, impulsivity, suicidality, self-injurious behaviours (SIB), transient psychotic symptoms, dissociation and chronic interpersonal difficulties. There is no convincing evidence for medication treatment for BPD as a whole (Lieb, Voellm, Ruecker, Timmer and Stoffers, 2010). Psychotherapy continues to be the primary treatment for BPD (Stoffers, Voellm and Lieb, 2009); 75% of individuals with BPD will be hospitalized in the course of their treatment (Lieb et al., 2004).

Hospitalization is arguably necessary when a patient's life is threatened; however, specialized inpatient treatment for this more severely disabled group, which has not responded to a variety of outpatient treatment efforts, is not widely available. Internationally, clinicians are compelled to turn to general psychiatric inpatient treatment of unknown effectiveness. It has even been suggested that traditional inpatient care has the potential to trigger negative effects (Gunderson and Links, 2008) or may merely be expensive custodial care for patients with BPD to maintain safety using external control.

The evaluation of clinical and cost effectiveness of specialized treatment for inpatients with BPD is a neglected research area. To date, the majority of studies have focused on outpatient treatment (summarized in Stoffers et al., 2009; Zanarini, 2009). Inpatient studies have been limited to Dialectical Behaviour Therapy (DBT; Linehan, 1993) and psychodynamic psychotherapy. Twelve weeks of inpatient DBT in a non-randomized trial demonstrated greater improvements on measures of depression, anxiety, interpersonal function, social adjustment, global psychopathology and SIB than the wait-list control (Bohus et al., 2004). However, 50% of the patients failed to show clinically significant improvement and no specific BPD measure was reported (Bohus et al., 2004). Other inpatient trials are either non-randomized and non-controlled (Kroger et al., 2006), use a mixed personality disorder sample (e.g. Chiesa, Fonagy and Holmes, 2006), report only qualitative results (e.g. Silk et al., 1994) or suffer from methodological flaws (summarized in Springer and Silk, 1996). The high morbidity, mortality, utilization and costs (van Asselt, Dirksen, Arntz and Severens, 2007) of mental health services associated with BPD and the paucity of empirical research indicate a need for the further evaluation of inpatient treatment, and the development of additional treatment approaches for non-responders to the limited treatments available.

Schema Therapy (ST) is a comprehensive treatment for BPD (Young, Klosko and Weishaar, 2003; Arntz and van Genderen, 2009) with a growing body of research evidence. The idea of ST is that early maladaptive schemas trigger under- or over-modulated emotion and action states that are referred to as modes. Modes are seen as interfering with patients' ability to use adaptive coping or interpersonal skills. Decreasing the intensity and frequency of maladaptive modes and strengthening adaptive modes are thought to allow patients to respond adaptively to life situations and improve their quality of life.

Individual ST has demonstrated efficacy for the full range of BPD psychopathology and critical psychosocial outcome measures, such as quality-of-life and cost-effectiveness (Giesen-Bloo et al., 2006; van Asselt et al., 2008). Farrell and Shaw (1994) developed a group therapy model of ST (Farrell and Shaw, 2012). A RCT (Farrell, Shaw and Webber, 2009) and pilot studies outside the developer's site (Dickhaut, 2010) of outpatient GST demonstrated

large effect sizes on measures of BPD symptoms in total and on all nine subscales of the Borderline Personality Disorder Severity Index (BPDSI; Giesen-Bloo, Wachters, Schouten and Arntz, 2010), reflecting a symptom reduction in all of the nine DSM-IV criteria. Moreover, Dickhaut (2010) found a reduction of general psychopathology in the Symptom Checklist-90-R's global severity score (Derogatis, 1994) and improved scores on measures of quality-of-life.

Since group therapy is the most commonly employed modality in inpatient settings, GST has particular promise for inpatient BPD treatment. Outpatient GST was adapted to an intensive model by its developers and combined with individual ST to be used as a comprehensive inpatient treatment program for severe BPD (Farrell and Shaw, 2005). Independently, Reiss and Vogel (2010) developed another combined ST inpatient BPD program. The core components of ST and the structure and length of treatment were judged to be equivalent in both programs. For these reasons the results of the three pilots are reported together with the goal of beginning to evaluate the effectiveness of a time-limited, combined program of individual and group ST for inpatients with severe BPD.

Method

Participants

In Pilot Study 1 and 2 patients who had a BPD diagnosis confirmed were referred to a specialized all-BPD inpatient unit of a medical school affiliated hospital in the United States. Ethical approval from the university institutional review board and informed consent from patients were obtained. Patients came through the hospital's usual referral process from community mental health centres. Consecutive referrals who met criteria and consented were accepted into the program, which usually had a waiting list. The ST program was an open group; new admissions occurred as patients were discharged. The group size was 11, based on the number of beds on the hospital unit assigned to the program. The majority of patients were court committed to the hospital, but the decision to participate in the BPD ST program was voluntary. The decision to stay in the program was voluntary. Any patient who asked to leave the program was transferred to a general psychiatric unit and received alternative general treatment. Exclusion criteria were a lifetime diagnosis of schizophrenia, schizoaffective disorder, bipolar 1 disorder, severe and pharmacological treatment resistant major depressive disorder (MDD), an IQ lower than 80, antisocial or narcissistic personality disorder (PD). In Pilot Study 1 6.7% (3/45) of referred patients were disqualified based upon exclusion criteria: two patients with severe MDD for whom inpatient electroconvulsive therapy (ECT) was planned and one patient with schizoaffective disorder. In Pilot Study 2, 2.6% (1/38) of referred patients were disqualified based upon exclusion criteria: IQ below 80. The retention rate for patients who qualified and consented was 97.6% (41/42) for Pilot Study 1 and 97.3% (36/37) for Pilot Study 2. The one premature drop-out in Pilot Study 1 left after her first group session and the one in Pilot Study 2 dropped out due to referral for ECT after a partial week in the program. Both were withdrawn from the study and omitted from analysis as they did not receive an adequate dose of treatment. Control of psychopharmacological treatment was beyond the scope of these pilot studies. Scheduled benzodiazapines were not given and patients admitted on them were tapered and withdrawn. All patients had a history

Table 1. Patient demographics by study

	Study 1 2005–2008	Study 2* 2008–2010	Study 3** 2008–2009
Number of patients	41	36	15
Age, Mean (*SD*)	36.4 (9.0)	31.6 (7.1)	25.5 (5.4)
Gender:			
Female	40 (98%)	32 (89%)	15 (100%)
Male	1 (2%)	4 (11%)	0 (0%)
Education:			
Grad school	2 (5%)	1 (3%)	3 (20%)
College graduate	8 (20%)	4 (11%)	0 (0%)
Some college	16 (39%)	15 (42%)	8 (53%)
Hgh school graduate	14 (34%)	15 (42%)	3 (20%)
Some school	1 (2%)	1 (3%)	1 (7%)
Employment status:			
Employed	6 (15%)	6 (17%)	5 (33%)
Unemployed	35 (85%)	28 (78%)	3 (20%)
Student	0 (0%)	2 (6%)	7 (47%)
Psychotropic medication at baseline	Yes: 41 (100%)	Yes: 36 (100%)	Yes: 11 (73%)
	No: 0 (0%)	No: 0 (0%)	No: 4 (27%)
Previous psychotherapeutic treatment of any kind	Yes: 41 (100%)	Yes: 36 (100%)	Yes: 14 (93%)
	No: 0 (0%)	No: 0 (0%)	No: 1 (7%)
Previous outpatient psychotherapeutic treatment	Yes: 41 (100%)	Yes: 36 (100%)	Yes: 12 (80%)
	No: 0 (0%)	No: 0 (0%)	No: 3 (20%)
Previous inpatient psychotherapeutic treatment	Yes: 41 (100%)	Yes: 36 (100%)	Yes: 13 (87%)
	No: 0 (0%)	No: 0 (0%)	No: 2 (13%)

* Due to rounding scores may add up to more than 100%; **Completers only

of suicide attempts and SIB at intake. Table 1 presents the main demographic characteristics of all samples.

In Pilot Study 1 diagnoses were confirmed by clinical interview (conducted by a senior clinical psychologist) and meeting the BPD qualifying score on the Borderline Syndrome Index (Conte, Plutchik, Karasu and Jerrett, 1980). At the time the study began, this was the only self-report BPD measure of change available. In Pilot Study 2, the same psychologist conducted a clinical interview guided by the Questionnaire of the Clinical Interview for DSM-IV Personality Disorders (SCID-II; First, Spitzer, Gibbon and Williams, 1996). Although the program was 12 weeks long, the average length of stay in Pilot Study 1 was 18 weeks. Posttreatment assessment occurred at discharge. The primary reason for discharge delays was the need for supported housing. When discharge was delayed, patients continued some ST programming. In Pilot Study 2, the formal ST treatment program ended and patients completed the assessments after 12 weeks. Those who stayed longer had individual therapy with minimal group treatment and spent four of five weekdays on home visits. This lack of exact dose control of the treatment reflects the reality of conducting studies in naturalistic settings where patients cannot be denied all psychotherapeutic treatment because a study period ended.

In Pilot Study 3**,** 17 patients with a diagnosis of BPD, confirmed by SCID-II Interview (First et al., 1996), were referred to a general psychiatric inpatient unit of a University Department of Psychiatry and Psychotherapy in Germany. All patients had signed informed consent and the study had ethical approval. Patients were admitted according to referral order. The group size was eight, based on the number of beds on the hospital unit assigned to the program. Exclusion criteria were the same as in studies 1–2, with the addition of the diagnosis of severe MDD. In Pilot Study 3 5.9% (1/17) of referred patients were excluded due to a confirmed diagnosis of narcissistic PD. One patient dropped out at the end of week 4 and was excluded from the analysis, as not receiving a minimal dose of treatment. Thus retention rate was 15/16 (93.8%). Psychopharmacology followed the protocol of pilot studies 1 and 2. Patients were assessed and discharged at the end of 10 weeks if no acute suicidality was present (none were delayed). Follow-up assessment of borderline-specific and general psychiatric symptoms was conducted 12 weeks after discharge.

The inclusion and exclusion criteria of all studies reflect the heterogeneity of the BPD population in naturalistic clinical settings. They are consistent with the recommendations made by a NIMH panel of BPD experts (Zanarini et al., 2010). The exclusion of narcissistic, schizotypal, schizoid and antisocial PD and Dissociative Identity Disorder was chosen to protect the group process from disruptions not part of BPD psychopathology.

Outcome measures (see Table 2)

Borderline Syndrome Index (BSI; Conte et al., 1980) is a 52-item true or false self-report measure of BPD symptoms that allows measurement of change by specifying a time period for the subject upon which to base answers. The BSI asks, through 52 questions, about the presence of BPD symptoms during the last 2 weeks. The total score has an internal consistency of KR-20 = .92 ($p < .001$).

Borderline Symptom List (BSL) is a 95-item self-rating scale that allows for quantification of the borderline-typical symptoms with good psychometric properties. Pilot Study 2 used the short version (Bohus, 2004; Wolf et al., 2009); Pilot Study 3 used the long version (Bohus et al., 2007). Intercorrelations between both versions are high ($r = .96$; Wolf et al., 2009).

Symptom Checklist-90-R's global severity score (GSI, mean of the sum of all items; Derogatis, 1994) was used in pilot studies 2 and 3 as a measure of subjective experience of general symptoms. Internal consistency of this score is very high, Cronbach's alpha = .79-.89.

Global Assessment of Functioning Scale (GAF; Jones, Thornicroft, Coffey and Dunn, 1995) ratings by consensus of the treatment team members (psychologist, psychiatrist and master's level clinical social worker) were used in Pilot Study 1 as a measure of global functioning.

The first three measures are self-report, eliminating the issue of rater bias. The clinician rated GAF scores were rated by consensus of the treatment team referring to a copy of the scale as an empirical anchor.

Treatment

The inpatient ST programs include group and individual components (Table 3). The studies are comparable in the proportion of group and individual sessions, group format and group size, but differ in treatment length, number of therapists and therapists' training.

https://doi.org/10.1017/S1352465813000027 Published online by Cambridge University Press

Table 2. Outcome measures by study

	Study 1	Study 2	Study 3
Borderline Symptoms	Borderline Syndrome Index	Borderline Symptom List (BSL 21)	Borderline Symptom List (BSL 95)
Global Functioning or Global Severity of psychiatric symptoms	GAF	SCL-90-R	SCL-90-R

Table 3. Treatment components in the three pilot studies

	Pilot 1	Pilot 2	Pilot 3
Hours of group ST per week	8.5	8.5	8
Hours of individual ST per week	1	1	1.5
Treatment length	14–52 weeks, Average 18 weeks	12 weeks	10 weeks
Assessment 1	Pretreatment	Pretreatment	Pretreatment
Assessment 2	Posttreatment	Posttreatment, 12 weeks	Posttreatment, 10 weeks
Assessment 3	–	–	3 month follow-up
Group size	11	11	8
Therapist number GST	2 (co-therapist team)	1 (solo therapist)	2 (co-therapist team)
Training level GST	Program developers	Program developer or therapists trained by her	Schema therapists without GST specific training
Unit	Separate dedicated BPD unit, all patients with BPD diagnosis and all in ST	Separate dedicated BPD unit, all patients with BPD diagnosis and all in ST	8 ST program patients housed in a general psychiatric unit of 17

Like individual ST, GST (Farrell and Shaw, 2010; Farrell and Shaw, 2012) is technically integrative, combining aspects of process and educational groups to make strategic use of group therapeutic factors such as cohesiveness and vicarious learning (Yalom, 2005). A co-therapist pair work together to balance focus between individuals and the group. The program and course of treatment is described in Farrell, Shaw and Reiss (2012), Reiss and Vogel (2010) and in a case study by Reiss, Jacob and Farrell (2012). Since the studies were completed a treatment manual for GST with a patient workbook has been prepared (Farrell and Shaw, 2012). Table 4 presents the focus and goals for group sessions of the ST program.

Formal adherence measures for GST had not been developed at the time of these pilot studies. All group sessions were conducted by at least one of the developers of the programs and random session videotapes were reviewed by ST supervisors. Supervision occurred bi-weekly.

Table 4. Components of intensive group schema therapy

Component	Goals and foci
ST education	Find out how a mode is experienced regarding cognitions, emotions and behaviours. Set general goals for mode work
Mode awareness	Be able to identify when in a mode, differentiating modes by sensational experiences
Cognitive mode work	Finding out cognitive distortions associated with certain modes and finding cognitive antidotes to modes
Experiential mode work	Finding out about experiential triggers and developing experiential antidotes for each mode
Classic schema therapy	Focus on limited re-parenting and experiential techniques to develop and exercise experiential antidotes to dysfunctional modes and experiential support of child modes (typical techniques are imagery rescripting and chair techniques)
ST Interpersonal	This group focuses on current modes patients are experiencing and the interactions within the group
Modes in interaction	Focus on the effects of mode behaviour on their relationships with others and how to use healthy adult behaviours more effectively
Mode management plans	Develop plans for alternative healthy action to meet the underlying need and practise them
Adaptive mode development	Monitor the increasing ability to access the Healthy Adult and Happy Child mode to be able to accomplish the specific ST goal for the mode of the week

Results

Table 5 shows the means of the outcome measures at the different assessment points. As hypothesized, at the end of the inpatient ST programs significant changes occurred in borderline-specific and general psychopathology measures. Global severity of psychiatric symptoms, whether measured by GAF or SCL-90-R, was also reduced significantly in all three pilot studies. In Pilot Study 1 we found a significant reduction in BPD symptoms measured with the BSI from pre- to posttreatment ($p<.01$; Cohen's $d=2.15$). GAF scores increased significantly after treatment, indicating improved global functioning ($p<.01$; Cohen's $d=2.84$). Although we have no formal measures at follow-up in Pilot Study 1, we have the report of treating clinicians for 28 of 42 patients (67%) for the incidence of important BPD symptoms for the year after inpatient treatment: re-hospitalization, SIB requiring medical care, and suicide attempts. In that group 86% had no hospitalization, 6% had one brief (less than 10 days) hospitalization, and an additional 8% had two brief hospitalizations, compared to a mean of six hospitalizations in the year before treatment. In terms of SIB, 100% reported SIB requiring medical care in the 30 days before inpatient treatment; in the year after treatment only 18% had SIB. For suicide attempts, 100% had a recorded attempt in the year before treatment and in the year following treatment only 14% (6) had a suicide attempt.

In Pilot Study 2 the effect size on the borderline specific measure dropped markedly when compared to Pilot Study 1 ($p<.01$; Cohen's $d=1.34$), yet we still found a significant reduction in BPD symptoms measured with the BSL. In Pilot Study 2 GSI-T-scores on the SCL-90-R

https://doi.org/10.1017/S1352465813000027 Published online by Cambridge University Press

Table 5. Means, *SD*s and Effect Sizes using *SD* of change scores of the outcome measures by study and time, and results

Study	Measure	Baseline mean (*SD*)	Posttest mean (*SD*)	3-month follow up mean (*SD*)	t (*df*)	*p*	Cohen's *d**
Study 1	BSI	34.88 (9.31)	12.44 (8.74)	–	13.78 (40)	<.01	2.15
	GAF	27.80 (10.4)	55.51 (7.17)	–	−18.17 (40)	<.01	2.84
Study 2	BSL-21 (Average Raw Score)	2.14 (1.06)	0.66 (0.75)	–	8.04 (35)	<.01	1.34
	SCL-90-R GSI (T-Score)	56.11 (7.57)	42.92 (10.28)	–	5.86 (35)	<.01	.98
Study 3	BSL-95 (Average Raw Score)	2.31 (.50)	1.74 (.83)	–	2.82 (14)	<.05	.73
	SCL-90-R GSI (T- Score)	71.60 (7.66)	65.73 (9.56)	–	3.72 (14)	<.01	.96
Study 3	BSL-95 (Average Raw Score)	2.31 (.50)	–	1.92 (.86)	1.92 (14)	<.075	.50
	SCL-90-R GSI (T- Score)	71.60 (7.66)	–	68.93 (9.48)	1.63 (14)	n.s.	.43

* $\delta = \frac{\mu_1 - \mu_2}{\sigma_D}$.

($p<.01$; Cohen's $d=.98$) decreased significantly, indicating a decrease in global severity of psychiatric symptoms.

In Pilot Study 3 a repeated measures ANOVA ($F=3.83$; $df=2,28$; $p<.05$) demonstrated a significant reduction of BPD symptoms over time as measured with the BSL. To compare results at the three assessment points in Pilot Study 3 we calculated orthogonal contrasts between pretreatment and posttreatment measures of Pilot Study 3 and between pretreatment and follow-up measures of Pilot Study 3. When looking at contrasts among the three measurement points, a significant reduction in BPD symptoms is found between pretreatment and posttreatment scores ($p<.05$), with an effect size of Cohen's $d=.73$. When pretreatment and 3-month follow-up measures are compared there is no significant difference in BPD symptoms, but a marked tendency towards reduction is found ($p<.075$; Cohen's $d=.50$). Looking at general psychopathology via a repeated measures ANOVA, GSI scores on the SCL-90-R decreased significantly over time ($F=7.19$; $df=2,28$; $p<.01$). We calculated orthogonal contrasts between pretreatment and posttreatment measures of Pilot Study 3 as well as between pretreatment and follow-up measures to make the results comparable to Pilot Studies 1 and 2. When looking at contrasts, a significant difference in global severity of psychiatric symptoms was found between pretreatment scores and post ST inpatient treatment scores ($p \leqslant .01$; Cohen's $d=.96$). However, when pretreatment and 3-month follow-up measures are compared no significant difference in global severity of psychiatric symptoms is found ($p>.05$; Cohen's $d=.43$) indicating a relapse of symptoms after discharge (see Table 5).

Discussion

In all three uncontrolled pilot studies BPD specific as well as global severity of psychopathology symptoms were reduced significantly in patients with severe BPD. These findings need to be evaluated in a RCT, with posttreatment follow-up to evaluate whether the treatment effects accomplished in intensive ST programs will be maintained over time and how these treatment effects compare to those of other BPD inpatient treatment programs.

Pilot Study 3 reached posttreatment scores comparable to those reported for inpatient DBT, which were assessed a month after discharge (Bohus et al., 2004). Pilot Study 3 demonstrated significant reductions in BPD symptoms and global severity of psychiatric symptoms from pre- to posttreatment; however no statistically significant change from pretreatment to 3-month follow-up was found in global severity of psychiatric symptoms and only a tendency towards reduction of borderline specific symptoms. The small sample size ($N=15$) may not provide sufficient power to detect the small changes in effect size typical for psychotherapy studies. There is no formal information about outpatient follow-up psychotherapy, but it can be assumed that patients with severe BPD need such treatment. Currently, the average waiting time for outpatient psychotherapy in Rhineland-Palatinate, Germany is 14.2 weeks (Bundespsychotherapeutenkammer, 2011) suggesting that patients did not receive outpatient treatment during the follow-up assessment time. A relapse of symptoms is likely to occur under these circumstances. Bohus et al. (2004) report an effect size of 0.84 one month after discharge in their inpatient DBT trial. Yet, in an uncontrolled inpatient DBT trial Kroger et al. (2006) found an effect size of 0.68 from pre- to posttreatment and 0.44 from pretreatment to a 15-month follow-up comparable to the results of Pilot Study 3. The informal follow-up results collected for Pilot Study 1 indicate improvement in a percentage of patients at least equal to

that reported for inpatient DBT (Bohus et al., 2004). However, the figures may be better in this group, which remained in outpatient care than in the group lost to follow-up. The role of outpatient follow-up is another variable to evaluate in future studies.

An important economic question to answer is whether the ST intensive program can be delivered outside of hospitals. Mentalization-based (MBT) day-hospital treatment programs have shown effectiveness in improving symptoms and functioning of patients with BPD (Bateman and Fonagy, 1999, 2001, 2009). Just recently Bales et al. (2012) demonstrated that manualized day hospital MBT can be effectively implemented in a naturalistic setting. The reduction in costs for day hospital compared to inpatient treatment is approximately 80%.

A difficulty in interpreting all studies to date on BPD inpatient treatment is the lack of consistency in measures used (Zanarini, 2009). These pilot studies all used a direct measure of BPD symptoms and one of global severity of psychiatric symptoms, but different measures were used for Pilot 1, the earliest of the studies. The length of treatment also varied from a mean of 18 weeks to 10 weeks. Pilots 2 and 3 are more comparable in measures and length. Another possible influence is the difference between samples in employment (e.g. 85% unemployed in Pilot Study 1 vs. 20% unemployed in Pilot Study 3). Due to GST being in the treatment development stage at the time of the pilot studies there were slight variations in the programs. Fidelity to ST was checked by supervisors, but we cannot rule out the effects of variations in the group program on outcome.

Despite these limitations these pilot studies give us important information about the benefits of using a structured specialized program for severe BPD in inpatient settings and the feasibility of conducting such studies. The overall results compare favourably to those described by experts (Gunderson and Links, 2008) and no patient was made worse by treatment. There is so little data evaluating inpatient treatment programs or even reports of what treatment is utilized in these settings that our studies offer a starting point for the evaluation of controlled specialized BPD treatment other than DBT. The treatment effect sizes for Pilot Study 1 are comparable to outpatient GST studies (Farrell et al., 2009; Dickhaut, 2010). Pilot Studies 2 and 3 demonstrated lower effects. One explanation could be deviations from the GST model: Pilot Study 2 groups were conducted by a solo therapist who was highly experienced in the model, but one therapist cannot fulfill the GST requirements for BPD groups. In Pilot Study 3 therapists were trained in individual ST, but had no training in GST. One can assume that training is likely to affect treatment outcome. In addition, the treatment in Pilot 3 was shorter than Pilot 1. Although a dismantling study of the active ingredients of GST was not the purpose of the studies, the differences in effect size found provide us with new hypotheses to test.

Future studies should use the same outcome measures and treatment length, include randomization and a control group and measure adherence to the GST model as well as therapist training. Our findings add further evidence that inpatient programs for patients with severe BPD can do more than keep them safe with external control at a high cost.

Acknowledgements

Neele Reiss and Klaus Lieb (Pilot Study 3) would like to acknowledge the supervisor of individual ST, Gitta Jacob, PhD and their treatment team members – Friederike Vogel, MD, Marco Nill, MD and Mechthild Graf-Morgenstern, MD for their contributions to the ST

treatment program. The third pilot study was supported in part by funds from University Medical Center Mainz MAIFOR grant (No.88).

Ida Shaw and Joan Farrell (Pilot Studies 1 and 2) would like to acknowledge the contributions of their team at Larue Carter Hospital – Vicki Silver, LCSW, Karen Fuller, D.Min. and John Mitchell, MS. The first pilot study was supported in part by funds from Indiana University School of Medicine Psychiatry Biomedical Research Grant and the second pilot study was supported in part by funds from the Clarian Values Grant.

References

Arntz, A. and van Genderen, H. (2009). *Schema Therapy for Borderline Personality Disorder*. Chichester: Wiley-Blackwell.

Bales, D., van Beek, N., Smits, M., Willemsen, S., Busschbach, J. J., Verheul, R., et al. (2012). Treatment outcome of 18-month, day-hospital mentalization-based treatment (MBT) in patients with severe borderline personality disorder in the Netherlands. *Journal of Personality Disorders*, *26*, 568–582. doi: 10.1521/pedi.2012.26.4.568

Bateman, A. and Fonagy, P. (1999). Effectiveness of partial hospitalization in the treatment of borderline personality disorder: a randomized controlled trial. *American Journal of Psychiatry*, *156*, 1563–1569.

Bateman, A. and Fonagy, P. (2001). Treatment of borderline personality disorder with psychoanalytically oriented partial hospitalization: an 18-month follow-up. *American Journal of Psychiatry*, *158*, 36–42.

Bateman, A. and Fonagy, P. (2009). Randomized controlled trial of outpatient mentalization-based treatment versus structured clinical management for borderline personality disorder. *American Journal of Psychiatry*, *166*, 1355–1364. doi: 10.1176/appi.ajp.2009.09040539

Bohus, M. (2004). *The Borderline Symptom List.* NIMH International Think Tank on Effective Borderline Personality Disorder Treatment, The Conference Center at the Maritime Institute, Linthicum Heights, MD. July 9–11.

Bohus, M., Haaf, B., Simms, T., Limberger, M. F., Schmahl, C., Unckel, C., et al. (2004). Effectiveness of inpatient dialectical behavioral therapy for borderline personality disorder: a controlled trial. *Behaviour Research and Therapy*, *42*, 487–499. doi: 10.1016/S0005-7967(03)00174-8

Bohus, M., Limberger, M., Frank, U., Chapman, A. L., Kühler, T. and Stieglitz, R. D. (2007). Psychometric properties of the Borderline Symptom List (BSL). *Psychopathology*, *40*, 126–132. doi:10.1159/000098493

Bundespsychotherapeutenkammer (2011). BPtK-Studie zu Wartezeiten in der ambulanten psychotherapeutischen Versorgung. Umfrage der Landespsychotherapeutenkammern und der BPtK. Retrieved September 5, 2011 from http://www.bptk.de/fileadmin/user_upload/Publikationen/BPtK-Studien/Wartezeiten_in_der_Psychotherapie/20110622_BPtK-Studie_Langfassung_Wartezeiten-in-der-Psychotherapie.pdf

Chiesa, M., Fonagy, P. and Holmes, J. (2006). Six-year follow-up of three treatment programs for personality disorder. *Journal of Personality Disorders*, *20*, 493–509. doi: 10.1521/pedi.2006.20.5.493

Conte, H. R., Plutchik, R., Karasu, T. B. and Jerrett, I. (1980). A self-report borderline scale: discriminative validity and preliminary norms. *Journal of Nervous and Mental Disease*, *168*, 428–435.

Derogatis, L. R. (1994). *The SCL-90-R: administration, scoring and procedures manual (3rd edn.)*. Minneapolis, MN: National Computer Systems.

Dickhaut, V. (2010). *Individual and Group Schema Therapy for BPD Outpatients: new findings from research in the Netherlands.* Paper presented at the 6th World Congress of Behavioral and Cognitive Therapies, Boston, MA, June.

Farrell, J. M. and Shaw, I. A. (1994). Emotional awareness training: a prerequisite to effective cognitive-behavioral treatment of borderline personality disorder. *Cognitive and Behavioral Practice*, *1*, 71–91. doi:10.1016/S1077-7229(05)80087-2

Farrell, J. M. and Shaw, I. A. (2005). *Surviving the Storm: treatment innovations for BPD*. American Psychological Association Annual Convention, Washington, DC. August.

Farrell, J. M. and Shaw, I. A. (2010). Schematherapie-Gruppen für Patienten mit Borderline-Persönlichkeitsstörung: Das Beste aus zwei Welten der Gruppen-Psychotherapie. In E. Roediger and G. Jacob (Eds.), *Fortschritte der Schematherapie. Konzepte und Anwendungen* (pp. 235–258). Göttingen: Hogrefe.

Farrell, J. M. and Shaw, I. A. (2012). *Group Schema Therapy for Borderline Personality Disorder: a step-by-step treatment manual with patient workbook.* Chichester: Wiley-Blackwell.

Farrell, J. M., Shaw, I. A. and Reiss, N. (2012). Group Schema Therapy for Borderline Personality Disorder. In M. van Vreeswijk, J. Broersen and M. Nadort (Eds.), *Handbook of Schema Therapy: theory, research and practice* (pp. 341–358). Chichester: Wiley-Blackwell.

Farrell, J. M., Shaw, I. A. and Webber, M. A. (2009). A schema-focused approach to group psychotherapy for outpatients with borderline personality disorder: a randomized controlled trial. *Journal of Behaviour Therapy and Experimental Psychiatry*, *40*, 317–328. doi:10.1016/j.jbtep.2009.01.002

First, M. B., Spitzer, R. L., Gibbon, M. and Williams, J. B. W. (1996). *Structured Clinical Interview for DSM-IV Axis I Disorders*. Washington, DC: American Psychiatric Publishing.

Giesen-Bloo, J., van Dyck, R., Spinhoven, P., van Tilburg, W., Dirksen, C., van Asselt, T., et al. (2006). Outpatient psychotherapy for borderline personality disorder: randomized trial of schema-focused therapy vs. transference-focused psychotherapy. *Archives of General Psychiatry*, *63*, 649–659.

Giesen-Bloo, J. H., Wachters, L., Schouten, E. and Arntz, A. (2010). The borderline personality disorder severity index-IV: psychometric evaluation and dimensional structure. *Personality and Individual Differences*, *49*, 136–141.

Gunderson, J. G. and Links, P. S. (2008). *Borderline Personality Disorder: a clinical guide*. Arlington, VA: American Psychiatric Publishing.

Jones, S. H., Thornicroft, G., Coffey, M. and Dunn, G. (1995). A brief mental health outcome scale-reliability and validity of the Global Assessment of Functioning (GAF). *The British Journal of Psychiatry*, *166*, 654–659. doi:10.1192/bjp.166.5.654

Kroger, C., Schweiger, U., Sipos, V., Arnold, R., Kahl, K. G., Schunert, T., et al. (2006). Effectiveness of dialectical behaviour therapy for borderline personality disorder in an inpatient setting. *Behaviour Research and Therapy*, *44*, 1211–1217. doi: 10.1016/j.brat.2005.08.012

Lieb, K., Voellm, B., Ruecker, G., Timmer, A. and Stoffers, J. M. (2010). Pharmacotherapy for borderline personality disorder: Cochrane systematic review of randomised trials. *The British Journal of Psychiatry*, *196*, 4–12. doi:10.1192/bjp.bp.108.062984

Lieb, K., Zanarini, M. C., Schmahl, C., Linehan, M. M. and Bohus, M. (2004). Borderline personality disorder. *Lancet*, *364*, 453–461. doi:10.1016/S0140–6736(04)16770–6

Linehan, M. M. (1993). *Cognitive-Behavioral Treatment of Borderline Personality Disorder*. New York: The Guilford Press.

Reiss, N., Jacob, G. and Farrell, J. M. (2012). Inpatient schema therapy for patients with borderline personality disorder: a case study. In M. van Vreeswijk, J. Broersen and M. Nadort (Eds.), *Handbook of Schema Therapy: theory, research and practice* (pp. 301–310). Chichester: Wiley-Blackwell.

Reiss, N. and Vogel, F. (2010). Stationäre Schematherapie bei Borderline-Persönlichkeitsstörung. In E. Roediger and G. Jacob (Eds.), *Fortschritte der Schematherapie. Konzepte und Anwendungen* (pp. 217–226). Göttingen: Hogrefe.

Silk, K. R., Eisner, W., Allport, C., DeMars, C., Miller, C., Justice, R. W., et al. (1994). Focused time-limited inpatient treatment of borderline personality disorder. *Journal of Personality Disorders*, *8*, 268–278. doi: 10.1521/pedi.1994.8.4.268

Springer, T. and Silk, K. R. (1996). A review of inpatient group therapy for borderline personality disorder. *Harvard Review of Psychiatry*, *3*, 268–278. doi:10.1067/3229/96/$5.00

Stoffers, J. M., Voellm, B. A. and Lieb, K. (2009). *Current Evidence of Efficacy for Psychotherapies of Borderline Personality Disorder: a meta-analysis of randomised controlled trials*. In Proceedings of the XIth International Congress of the International Society for the Study of Personality Disorders. ISSPD.

van Asselt, A. D., Dirksen, C. D., Arntz, A., Giesen-Bloo, J. H., van Dyck, R., Spinhoven, P., et al. (2008). Outpatient psychotherapy for borderline personality disorder: cost-effectiveness of schema-focused therapy vs. transference-focused psychotherapy. *The British Journal of Psychiatry*, *192*, 450–457. doi:10.1192/bjp.bp.106.033597

van Asselt, A. D., Dirksen, C. D., Arntz, A. and Severens, J. L. (2007). The cost of borderline personality disorder: societal cost of illness in BPD-patients. *European Psychiatry*, *22*, 354–361. doi:10/1016/j.eurpsy.2007.04.001

Wolf, M., Limberger, M. F., Kleindienst, N., Stieglitz, R. D., Domsalla, M., Philipsen, A., et al. (2009). Short version of the borderline symptom list (BSL-23): development and psychometric evaluation. *Psychotherapie - Psychosomatik - Medizinische Psychologie*, *59*, 321–324. doi:10.1055/s-0028-1104598

Yalom, I. D. (2005). *The Theory and Practice of Group Psychotherapy (5th edn.)*. New York: Basic Books.

Young, J. E., Klosko, J. S. and Weishaar, M. E. (2003). *Schema Therapy: a practitioner's guide*. New York: The Guilford Press.

Zanarini, M. C. (2009). Psychotherapy of borderline personality disorder. *Acta Psychiatrica Scandinavica*, *120*, 373–377. doi: 10.1111/j.1600-0447.2009.01448.x

Zanarini, M., Stanley, B., Black, D., Markowitz, J. C., Goodman, M., Pilkonis, P., et al. (2010). Methodological considerations treatment trials for persons with Borderline Personality Disorder. *Annals of Clinical Psychiatry*, *22*, 75–83.