



**Implementation of Evidence-Based Treatments for
Borderline Personality Disorder: The Impact of
Organizational Changes on Treatment Outcome of
Mentalization-Based Treatment**



Journal:	<i>Personality and Mental Health</i>
Manuscript ID	Draft
Wiley - Manuscript type:	Research Article
Date Submitted by the Author:	n/a
Complete List of Authors:	<p>bales, dawn; MBT Nederland, MBT Netherlands; Psychotherapeutisch Centrum De Viersprong, VISPD (Viersprong institute on studies of personality disorders)</p> <p>Timman, Reinier; Erasmus MC, Psychiatry - Medical Psychology and Psychotherapy</p> <p>Luyten, Patrick; Katholieke Universiteit Leuven</p> <p>Busschbach, Jan; Erasmus Medical Centre, Department of Medical Psychology and Psychotherapy; Viersprong Institute for Studies on Personality Disorders ,</p> <p>Verheul, Roel; University of Amsterdam, Clinical Psychology;</p> <p>Hutsebaut, Joost; Erasmus Medical Centre, Department of Medical Psychology and Psychotherapy; Viersprong Institute for Studies on Personality Disorders ,</p>
Keywords:	Mentalization-based treatment, implementation, quality maintenance, adherence, psychotherapy

SCHOLARONE™
Manuscripts

1
2
3 **Implementation of Evidence-Based Treatments for Borderline Personality Disorder:**
4
5 **The Impact of Organizational Changes on Treatment Outcome of Mentalization-Based**
6
7 **Treatment**

8
9
10
11 Dawn L. Bales, Reinier Timman, Patrick Luyten, Jan Busschbach, Roel Verheul,
12
13 Joost Hutsebaut

14
15
16 Viersprong Institute for Studies on Personality Disorders (VISPD), the Netherlands
17
18
19
20
21
22
23
24
25
26

27 **Author Note**

28 Dawn L. Bales, Viersprong Institute for Studies on Personality Disorders (VISPD), MBT
29 Netherlands, The Netherlands; Reinier Timman, VISPD, The Netherlands; Patrick Luyten, VISPD,
30 University College London, United Kingdom; Jan Busschbach, VISPD, the Netherlands; Roel
31 Verheul, Center of Psychotherapy the Viersprong, The Netherlands; Joost Hutsebaut, VISPD, MBT
32 Netherlands, The Netherlands.
33
34
35
36
37

38 Reinier Timman and Jan Busschbach are also at Section of Medical Psychology and
39 Psychotherapy, Erasmus Medical Center Rotterdam, Rotterdam, the Netherlands. Patrick Luyten is
40 also at Faculty of Psychology and Educational Sciences, University of Leuven, Belgium.
41
42

43
44 Acknowledgements: The authors thank all participants in this study and the staff of the MBT
45 department in Bergen op Zoom, The Netherlands. In particular, they thank Maaïke Smits (VISPD) for
46 her work coordinating data collection and processing the data, Odette Brand for her comments on this
47 paper, and Clare Farrar for copyediting the manuscript.
48
49
50
51

52 Correspondence concerning this article should be addressed to Dawn L. Bales, MBT
53 Netherlands, Postbus 7, 4660 AA Halsteren, The Netherlands.
54
55 E-mail: dawn.bales@mbtnederland.nl.
56
57
58
59
60

Abstract

The quality of implementation of evidence-based treatment programs for borderline personality disorder (BPD) is a neglected issue. This paper aimed to explore the impact of organizational changes on treatment effectiveness of mentalization-based treatment (MBT-DH). Consecutively referred BPD patients were divided into a pre-reorganization cohort (PRE-REORG) and a cohort during reorganization (REORG). Psychiatric symptoms (BSI) and personality functioning (SIPP-118) were compared at 18- and 36-month follow-up using multilevel modeling. Effect sizes in the PRE-REORG cohort were twice as large at 18 months (PRE-REORG: range 0.81–1.22; REORG: range 0.03–0.71) and three times as large at 36 months (PRE-REORG: range 0.81–1.80; REORG: range 0.27–0.81). Results suggest that even when MBT is successfully implemented, major organizational changes may have a considerable impact on its effectiveness. Specifically, the organizational changes were negatively related to adherence to the treatment model at organizational, team, and therapist level, which in turn was associated with a decrease in treatment effectiveness. The implications of these findings for the implementation of effective treatments for BPD in routine clinical practice are discussed.

Keywords: Mentalization-based treatment, implementation, quality maintenance, adherence, psychotherapy, treatment effectiveness, treatment outcome, borderline personality disorder.

1
2
3 **Implementation of Evidence-Based Treatments for Borderline Personality Disorder:**
4
5 **The Impact of Organizational Changes on Treatment Outcome of Mentalization-Based**
6
7 **Treatment**
8
9

10
11 Borderline personality disorder (BPD) is a serious and complex disorder that is
12 characterized by high levels of emotional instability, impulsivity, and difficulties in
13 interpersonal and social functioning (Bateman & Fonagy, 2004), which cause severe
14 impairments in occupational, interpersonal, and social functioning. Patients with BPD almost
15 invariably have high psychiatric comorbidity, seriously impaired quality of life (Soeteman,
16 Verheul, & Busschbach, 2008), and a high economic burden of disease (Soeteman, Hakkaart-
17 van Roijen, Verheul, & Busschbach, 2008). Psychotherapy is considered to be the treatment
18 of choice for BPD patients (Soeteman, Verheul, et al., 2008); (Leichsenring, Leibing, Kruse,
19 New, & Leweke, 2011). There is evidence supporting the efficacy of several types of
20 psychotherapy for BPD; these are dialectical behavior therapy, schema-focused therapy,
21 transference-focused psychotherapy, and mentalization-based treatment (MBT)
22 (Leichsenring, et al., 2011).

23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38 Despite the evidence of the efficacy of these treatments, their implementation in
39 routine clinical practice has been slow. A study in the Netherlands, for instance, estimated that
40 only 23% of patients diagnosed with BPD received psychotherapy (Hermens, van Splunteren,
41 van den Bosch, & Verheul, 2011); a much smaller percentage received an evidence-based
42 treatment. Little is known about the implementation of evidence-based treatments for BPD in
43 other countries, but it is assumed that only a small minority of patients receive such
44 interventions (Hermens, et al., 2011).
45
46
47
48
49
50
51

52
53
54 With growing interest in the implementation of evidence-based treatments for these
55 patients has come realization of the importance of the *quality of implementation* (J. Hutsebaut,
56
57
58
59
60

1
2
3 Bales, Busschbach, & Verheul, 2012). The evidence in support of evidence-based treatments
4
5 has typically been obtained under controlled (optimal) conditions in the context of
6
7 randomized controlled trials, including extensive training and supervision of therapists,
8
9 adherence monitoring, above-average organizational support, and involving therapists who
10
11 typically show high levels of intrinsic motivation and competency. It remains unclear to what
12
13 degree treatment outcome can be maintained under the suboptimal conditions that are often
14
15 typical of routine clinical practice, particularly given the widespread budget cuts in mental
16
17 health care. Various studies have shown that the dissemination of evidence-based treatments,
18
19 away from the developers' lab, may result in a drop in outcome (Durlak & DuPre, 2008;
20
21 Henggeler, 2004; Schoenwald, 2008). This has been shown, for example, for multisystemic
22
23 therapy for antisocial youth (Henggeler, 2004). In the field of personality disorders, the U.K.
24
25 National Institute for Health and Clinical Excellence guidelines (2009) emphasize that unlike
26
27 pharmacological treatments—where prescribers are assured of the quality of the product by
28
29 manufacturers—the quality of a psychological intervention depends on therapists having the
30
31 necessary skills and organizational support to replicate the intervention that has been found to
32
33 be effective in research settings. This aligns with expert opinions that the outcome of
34
35 psychotherapy may be highly dependent on the organizational context in which the treatment
36
37 program is delivered (Bateman & Krawitz, 2013). As an example of therapist factors,
38
39 Davidson and colleagues (Davidson et al., 2006) found that competent therapists were able to
40
41 avert more than five times as many suicidal acts as their less competent colleagues who had
42
43 had the same training and supervision and used the same methods.
44
45
46
47
48

49
50 Elsewhere, we have argued that the implementation of multidisciplinary, team-based
51
52 treatment programs, such as MBT for patients with BPD, is a complex process with several
53
54 risks in relation to treatment safety and efficacy (J. Hutsebaut, et al., 2012). This conclusion
55
56 was based on a study of the implementation of MBT for adolescents with BPD, which showed
57
58
59
60

1
2
3 that successful implementation of MBT was dependent on the successful management of
4
5 several interacting factors at three interrelated levels: that of the organization, the team, and
6
7 the individual therapist. More specifically, lack of support and implementation planning at the
8
9 organizational level was associated with and further increased resistance to changes to the
10
11 treatment program, as well as being associated with communication problems and lack of an
12
13 adequate supervisory structure at the team level, and with a lack of competence and adherence
14
15 to MTB at the therapist level.
16

17
18
19 Two recent studies of the implementation of DBT and SFT, two other evidence-based
20
21 treatment programs for BPD (Nadort et al., 2009; van den Bosch & Sinnaeve, 2015), similarly
22
23 pointed to the importance of organizational factors, such as managers' commitment to the
24
25 implementation of the program, the need for the program to be well embedded in the
26
27 organization, and the importance of factors related to the team and individual therapists, such
28
29 as team cohesion, commitment of therapists/team to the intervention, supervision, and
30
31 consultation.
32

33
34 This paper seeks to further explore the importance of the quality of implementation of
35
36 evidence-based treatments for BPD by addressing the influence of a major organizational
37
38 change on the efficacy of MBT. It can be argued that even when a treatment program has
39
40 been successfully implemented in a given setting, it is uncertain whether the same quality of
41
42 treatment delivery can be maintained in the long term. Organizations and teams are dynamic
43
44 entities. Teams might experience a high turnover of personnel, particularly in the context of
45
46 treating patients with BPD; organizations change; team leaders, managers, and experts can
47
48 change jobs; new team members may experience difficulties in being accepted in the team;
49
50 and so on. It is questionable whether the effectiveness of a treatment program will be resistant
51
52 to all these changes and dynamics. The issue of maintenance of treatment results in a
53
54
55
56
57
58
59
60

1
2
3 changing team and organizational environment has not yet been the subject of scientific study
4
5 in the field of personality disorders.
6

7 The authors' own treatment setting underwent considerable organizational changes 4
8 years after the successful implementation of MBT, offering a unique opportunity to explore
9 the impact of such changes on the treatment outcome of MBT. The National Institute for
10 Personality Disorders at the Viersprong in The Netherlands has offered a day-hospital MBT
11 program (MBT-DH) since 2004. In a naturalistic outcome study (D. Bales et al., 2012), we
12 showed that MBT-DH was associated with similar outcomes to those reported in previous
13 trials of MBT. However, after the publication of these findings, the treatment setting
14 encountered significant organizational changes in a relatively short period of time (August
15 2008 to March 2010). First, the adult MBT unit expanded and a national MBT training
16 program was started. Second, the implementation of a new adolescent MBT program was
17 problematic (J. Hutsebaut, et al., 2012), resulting in high staff turnover, temporary curtailment
18 of the program, high level of patient and parent dissatisfaction, safety risks for patients and
19 staff, and negative publicity. Third, the management structure changed and the adult MBT
20 unit had to merge with the newly developed adolescent MBT unit. These changes were
21 accompanied by a tripling of personnel, many of whom were inexperienced in the MBT
22 model. Fourth, during this period the unit's supervisor and trainers were partially deployed
23 elsewhere. Finally, the former manager of the adult unit, an MBT expert (who had
24 implemented MBT at the institution previously) changed jobs, and a clinician who, although
25 experienced with other treatment modalities, had virtually no knowledge of MBT, was
26 appointed to manage the newly merged MBT unit for adults and adolescents.
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50

51 This study had two aims. First, we aimed to investigate the impact of major
52 organizational changes on treatment effectiveness by comparing treatment outcomes before
53 and during the reorganization. Second, we aimed to explore to what extent possible changes
54
55
56
57
58
59
60

1
2
3 in outcome could be accounted for by the impact of the reorganization on adherence at
4
5 organizational, team, and therapist level by comparing both cohorts on a list of critical success
6
7 factors for implementing MBT.
8
9

10 11 12 **Methods**

13 14 **Participants and Procedures**

15
16 Study participants were consecutively referred patients to the adult MBT unit of the
17
18 National Institute for Personality Disorders at the Viersprong, The Netherlands. Major
19
20 organizational changes took place at the institute between August 2008 and March 2010. For
21
22 the purposes of this study, September 1, 2008 was taken as the cut-off point to separate the
23
24 pre-reorganization cohort (PRE-REORG) from the cohort of patients who were treated during
25
26 the reorganization (REORG). PRE-REORG patients had had at least 9 months of treatment
27
28 before the organizational changes were implemented, that is, they started MBT-DH between
29
30 August 2004 and December 2007. REORG patients had at least 9 months of treatment during
31
32 the reorganization period, that is, they started day hospital MBT between September 2008 and
33
34 April 2011.
35
36

37
38 As part of the standard intake procedure, patients underwent a detailed diagnostic
39
40 screening including the Structural Clinical Interview for DSM disorders (SCID-II; Ekselius,
41
42 Lindstrom, von Knorring, Bodlund, & Kullgren, 1994; Weertman, Arntz, & Kerkhofs, 2008),
43
44 or the Structured Interview for DSM-IV Personality (SIDP-IV; Pfohl, Blum, & Zimmerman,
45
46 1997). Patients meeting DSM-IV diagnostic criteria for BPD were included in the study.
47
48 Exclusion criteria were kept to a minimum, and were (a) the presence of schizophrenia based
49
50 on the SCID-I, (b) intellectual impairment (IQ <80) as assessed with the Wechsler Adult
51
52 Intelligence Scale-III, (c) organic brain disorder, and (d) living further than 1 hour's travelling
53
54 distance from the unit. The PRE-REORG cohort consisted of 41 patients. Due to logistical
55
56
57
58
59
60

1
2
3 reasons, four patients were not interviewed and had no formal BPD diagnosis. The SCID-II
4
5 interview could not be completed for seven patients because they were too distressed at the
6
7 time of the interview (e.g., heavy withdrawal symptoms, dissociative states, psychotic
8
9 symptoms). As a result, 30 of the referred patients were included in the analyses. The REORG
10
11 cohort consisted of 16 patients, who enrolled in the program between September 2008 and
12
13 April 2011.
14
15

16 17 18 **Treatment** 19

20
21 In both cohorts, the MBT condition consisted of a maximum of 18 months of
22
23 manualized MBT-DH (D. L. Bales & Bateman, 2012; Bateman & Fonagy, 2004, 2006),
24
25 followed by a maximum of 18 months of maintenance mentalizing (group) therapy. This
26
27 study reports on the treatment outcome of the day hospital phase (18 months) and of the
28
29 mentalizing-maintenance therapy (after 36 months) for both cohorts.
30

31
32 The day hospital program includes implicit mentalizing groups (comprising daily
33
34 group psychotherapy and weekly individual psychotherapy, and individual crisis planning
35
36 from a mentalizing perspective) and explicit mentalizing groups (art therapy twice a week,
37
38 mentalizing cognitive group therapy, and writing therapy). The weekly program ends with a
39
40 social hour and community meeting (D. L. Bales & Bateman, 2012; Bateman, Bales, &
41
42 Hutsebaut, 2013; Bateman & Fonagy, 2004). Patients could also consult a team psychiatrist
43
44 for medication upon request.
45
46

47
48 Treatment goals of MBT are: (1) to engage the patient in treatment, (2) to reduce
49
50 psychiatric symptoms, (3) to improve social and interpersonal functioning, (4) to decrease the
51
52 number of self-destructive acts and suicide attempts, and (5) to stimulate adequate care
53
54 consumption and to prevent reliance on hospital admissions and prolonged inpatient care
55
56 (Bateman & Fonagy, 2006). To achieve these goals, all program components specifically
57
58
59
60

1
2
3 focus on enhancement of the patient's mentalizing capacity, that is, the mental process of
4
5 understanding the self and others in terms of mental states such as thoughts, desires,
6
7 intentions, and feelings. The theoretical assumption is that enhancing mentalizing improves
8
9 the symptoms and functioning of patients with BPD (Bateman & Fonagy, 2004).
10
11

12 13 14 **Outcome Measures**

15
16 This study focused on two key targets of MBT: improvements in (a) psychiatric
17
18 symptoms and (b) personality functioning, assessed at the start of treatment and at 6, 12, 18,
19
20 24, 30, and 36 months after the start of treatment. Assessments in both cohorts were
21
22 conducted by independent research assistants.
23

24 25 **Psychiatric symptoms**

26
27 General psychiatric symptom distress was measured with the Brief Symptom
28
29 Inventory (BSI; De Beurs & Zitman, 2006; Derogatis & Melisaratos, 1983), a well-validated
30
31 questionnaire derived from the Symptom Checklist 90-Revised (SCL-90-R; Arrindell &
32
33 Ettema, 2003; Derogatis, 1977). In this study, we used the Global Severity Index (GSI), that
34
35 is, the mean score of the 53 items of the BSI (range 0–4). Higher scores indicate more
36
37 symptoms. De Beurs and Zitman (2006) reported a Cronbach's alpha of 0.96 for this
38
39 instrument.
40
41

42 43 **Personality**

44
45 Personality functioning was measured using the 118-item Severity Indices of
46
47 Personality Problems (SIPP-118; Verheul et al., 2008). The SIPP-118 measures 16 facets of
48
49 (mal)adaptive personality functioning, which fit into five higher-order domains—Self-control,
50
51 Identity Integration, Responsibility, Relational capacities, and Social Concordance—with
52
53 lower scores reflecting more maladaptive levels of personality functioning. The SIPP has
54
55 good psychometric properties and (cross-national) validity (Arnevik, Wilberg, Monsen,
56
57
58
59
60

1
2
3 Andrea, & Karterud, 2009; Verheul, et al., 2008). Cronbach's alphas of between 0.69 and
4
5 0.84 have been reported for the facets.
6
7

8 9 10 **Statistical Analysis**

11 Differences in baseline characteristics between the two cohorts were analyzed by
12 using chi-square tests for dichotomous variables and Student's *t*-tests for continuous
13 variables. Multilevel modeling was used to evaluate changes in symptoms and personality
14 functioning in both cohorts. Multilevel models make optimal use of incomplete repeated
15 measures data with unbalanced time points (Little & Rubin, 1987). Time was modeled in
16 months before or after the start of the treatment. In a first step, saturated models were tested
17 with intercept and slope (time) as random variables. For within-group analyses, time was
18 defined as level 1 and patients as level 2. Time, quadratic time, and logarithm of time were
19 entered as fixed effects. For between-group analyses, we added group and interactions
20 between group and time to the fixed effects. The covariance structure was based on the
21 deviance statistic using restricted maximum likelihood (Verbeke & Molenberghs, 1997).
22 Then, in a step-by-step procedure, fixed time effects that were not significant ($p > .10$) were
23 excluded from the model until a parsimonious final model was reached that did not differ
24 significantly from the saturated model. Statistical significance was determined with the
25 deviance statistic using ordinary maximum likelihood (Singer & Willett, 2003). When
26 removing nonsignificant effects, we decided that interaction effects should be nested under
27 their respective main effects (Hox, 2002). Cohen's *d* effect sizes (Cohen, 1992) were
28 calculated using the estimated pooled standard deviations from the models. All analyses were
29 based on the intention-to-treat principle. Patients who ended treatment prematurely were also
30 followed and included in the outcome analyses. Statistical analyses were performed using
31 SPSS version 20.0.
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Qualitative Study: The Quality of Implementation

For the qualitative study, a focus group was organized to explore the impact of the institutional reorganization on adherence at organizational, team, and therapist level. Participants in the focus group were selected on the basis of their ability to assess adherence at two or more levels from several relevant perspectives; they consisted of two managers, three therapists who had been involved in treating patients from both cohorts, and two researchers who had been involved in research on MBT in the unit but were not involved in any of the treatments. Participants were blind to potential differences in treatment outcome between both cohorts. In a first round, participants individually assessed the quality of implementation of MBT-DH for both cohorts, based on a checklist measuring critical success factors of the implementation of MBT, which was derived from the quality manual of MBT (Bateman, et al., 2013) augmented with results from previous relevant implementation studies (Bateman, et al., 2013; J. Hutsebaut, et al., 2012). Second, a focus group discussion was led by the first author, in which a summary of the participants' ratings was presented, after which participants were invited to discuss the summary. Finally, the participants provided a consensus score for adherence to MBT in each of the cohorts on a 5-point Likert scale (ranging from *very poor* to *very good*).

Results

Baseline characteristics

As Table 1 shows, there were no significant baseline differences between the two cohorts.

--- Table 1 about here ---

Quality of implementation

--- Table 2 about here ---

Table 2 presents the results of the consensus scores derived from the checklist and discussion in the focus group of adherence at organizational, team, and therapist level for the two cohorts. PRE-REORG scores were a mean 6.1 (range 4–7), suggesting very good adherence at organizational, team, and therapist level. During organizational changes (i.e., REORG), the mean adherence was scored at 2.4 (range 1–4), indicating poor adherence. The focus group ratings for adherence to each of the factors in both cohorts suggests that adherence at each level was better before the reorganization than during the reorganization.

Between-group differences

The estimates of the parameters in the final parsimonious mixed models are presented in Table 3. For the purpose of interpretation, the estimates at the start of treatment, 18 months and 36 months, as well as the pooled standard deviations and effect sizes derived from the models, are presented in Table 4 and depicted in Figure 1. Effect sizes on various outcomes in the PRE-REORG cohort were twice as large at 18 months (PRE-REORG: range .81–1.22, median 1.09; REORG: range .03–.71, median .53) and more than three times as large at 36 months (PRE-REORG: range .81–1.80, median 1.60; REORG: range .27–.81, median .48). The observed differences between the two cohorts were statistically significant at both 18 and 36 months for most outcome parameters (self-control, identity integration, responsibility, relational capacities, and social concordance). On the GSI we observed a trend toward statistical significance ($p < .07$).

1
2
3
4
5 --- Table 3 and 4 about here ---
6
7
8
9

10 **Discussion**

11 This study investigated the impact of major organizational changes on the treatment
12 outcome of MBT-DH in a specialized MBT unit. Results indicated a serious reduction in the
13 effectiveness of the same intervention during and after the major organizational changes. In
14 fact, outcomes decreased by almost half in the REORG cohort. Consistent with our
15 assumptions, results from individual ratings and the focus group showed considerable
16 problems in the REORG cohort with regard to adherence to the treatment model at
17 organizational, team, and therapist level. The results can be considered a first step toward
18 understanding important barriers and facilitators in the implementation and maintenance of
19 effective treatment programs in the field of personality disorders.
20
21
22
23
24
25
26
27
28
29
30

31 The current study shows that treatment outcomes in a treatment center may be subject
32 to major fluctuations over time, and suggests that these fluctuations can at least in part be
33 accounted for by the degree of adherence to the treatment model at the organizational, team,
34 and therapist level. This is, to our knowledge, the first study in the field of personality
35 disorders to highlight the difficulty of maintaining treatment outcome within a changing
36 organizational context. It is important to emphasize that this study took place in a mental
37 health care center involving therapists who were properly trained and supervised in the
38 treatment model. Even during and after the organizational changes the structure of the
39 program remained unchanged and there is suggestive (unpublished) evidence to believe that
40 the level of adherence to the model was comparable to benchmark MBT programs across
41 various countries. Under this assumption our study compared optimal MBT (typically
42 showing large effect sizes) to suboptimal MBT (typically showing medium effect sizes).
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 If replicated, these findings may have important implications for the dissemination and
4 implementation of evidence-based treatments such as MBT in the treatment of BPD.
5

6
7 Although initial pessimism regarding the treatment of BPD has been replaced by optimism
8 (Stoffers et al., 2012), the results of this study emphasize the critical role of continuously
9 ensuring adherence to the model at multiple levels. This study suggests that psychotherapy
10 might be especially beneficial when delivered in organizations that are fully committed to the
11 patient population and the treatment program, provide sufficient resources for implementing
12 the program, and are capable of dealing with major reorganizations affecting the delivery of
13 the program. Furthermore, psychotherapy might be especially effective when delivered by
14 well-functioning teams with a clear demarcation of responsibilities, clear leadership, and
15 commitment to an open and reflective team culture. Finally, psychotherapy might be
16 optimally effective only when delivered by competent, well-trained therapists, who receive
17 ongoing supervision and are committed to the treatment model.
18
19
20
21
22
23
24
25
26
27
28
29
30

31
32 This study has several strengths and limitations, and the results need to be interpreted
33 taking these strengths and limitations into account. A strength is the importance and
34 timeliness of the topic, which fits well with a growing recognition of the critical role of
35 implementation science in health services research (Bammer, 2005; Berwick, 2006). It is a
36 naturalistic study capturing real-life variables in a mental health setting that impact quality of
37 care. Limitations include the relatively small sample sizes in each cohort. This limitation is
38 somewhat mitigated by the fact that the observed differences in outcome between the two
39 cohorts were large. A second limitation is that the distinction between the cohorts (i.e., the
40 choice of a cut-off date separating the two) was made retrospectively. This concern is
41 somewhat mitigated by the fact that the division of cohorts was based on relatively objective
42 grounds (i.e., major organizational changes), but further controlled research is necessary to
43 replicate these findings. Third, with regard to the qualitative study, some participants were not
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 completely unfamiliar with our hypotheses concerning the importance of implementation
4
5 issues, as one of our previous papers on this topic (Joost Hutsebaut et al., 2011) had been
6
7 shared among members of the unit, which might have influenced ratings during the focus
8
9 discussion. However, all participants in the focus group were unaware of our finding that
10
11 outcomes during the reorganization indicated a marked drop in treatment effectiveness; they
12
13 were merely asked to rate the impact of the changes in the organization on adherence to the
14
15 MBT model at organizational, team, and therapist level. Finally, the study design did not
16
17 allow us to investigate whether organizational, team, or therapist factors, or a combination of
18
19 these factors, were responsible for the observed decrease in outcomes.
20
21

22
23 Despite these limitations, this study suggests the importance of organizational
24
25 conditions influencing treatment outcome in the treatment of BPD. Organizations will always
26
27 be dynamic entities. Besides inevitable changes that occur within organizations, broader
28
29 reorganizations of health care systems are also likely to impact treatment adherence on
30
31 different levels. The finding that such changes may have a negative impact on treatment
32
33 outcome are alarming and highlight the need to develop strategies to optimize organizational,
34
35 team, and therapist functioning in order to maintain and maximize the quality of
36
37 psychotherapy for BPD patients in changing organizational contexts. We therefore urgently
38
39 need more studies on the necessary conditions for the implementation and maintenance of
40
41 effective treatment programs. Furthermore, we need to develop strategies to guarantee,
42
43 monitor, and adjust conditions under which these treatments remain effective. Only then can
44
45 we justify the claim that psychotherapy can be an effective treatment for BPD.
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

References

- 1
2
3
4
5 Arnevik, E., Wilberg, T., Monsen, J. T., Andrea, H., & Karterud, S. (2009). A cross-national
6
7 validity study of the Severity Indices of Personality Problems (SIPP-118). *Personality*
8
9 *and Mental Health*, 3(1), 41-55. doi: 10.1002/pmh.60
10
11
12 Arrindell, W. A., & Ettema, J. H. M. (2003). *SCL-90 – Herziene handleiding bij een*
13
14 *multidimensionele psychopathologie-indicator*. Lisse, The Netherlands: Swets
15
16 Publishers.
17
18 Bales, D., van Beek, N., Smits, M., Willemsen, S., Busschbach, J. J., Verheul, R., & Andrea,
19
20 H. (2012). Treatment outcome of 18-month, day hospital mentalization-based
21
22 treatment (MBT) in patients with severe borderline personality disorder in the
23
24 Netherlands. *Journal of Personality Disorders*, 26(4), 568-582. doi:
25
26 10.1521/pedi.2012.26.4.568
27
28
29 Bales, D. L., & Bateman, A. W. (2012). Partial hospitalization settings. In A. W. Bateman &
30
31 P. Fonagy (Eds.), *Handbook of mentalizing in mental health practice* (pp. 197-227).
32
33 Washington, DC: American Psychiatric Publishing.
34
35
36 Bammer, G.(2005). Integration and implementation Sciences: building a new specialization.
37
38 *Ecology and Society*, 10:6.
39
40 Bateman, A. W., Bales, D. L., & Hutsebaut, J. (2013). A quality manual for MBT. London,
41
42 UK: Anna Freud Centre.
43
44
45 Bateman, A. W., & Fonagy, P. (2004). *Psychotherapy for borderline personality disorder:*
46
47 *Mentalization-based treatment*. Oxford, UK: Oxford University Press.
48
49
50 Bateman, A. W., & Fonagy, P. (2006). *Mentalization-based treatment for borderline*
51
52 *personality disorder: A practical guide*. Oxford, UK: Oxford University Press.
53
54
55
56
57
58
59
60

- 1
2
3 Bateman, A. W., & Krawitz, R. (2013). *Borderline personality disorder: An evidence-based*
4
5 *guide for generalist mental health professionals*. Oxford, UK: Oxford University
6
7 Press.
- 8
9 Berwick, D.M. (2003). Disseminating innovations in health care. *Journal American Medical*
10
11 *Association, 289*, 1969-1975.
- 12
13 Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155-159.
- 14
15 Davidson, K., Norrie, J., Tyrer, P., Gumley, A., Tata, P., Murray, H., & Palmer, S. (2006).
16
17 The effectiveness of cognitive behavior therapy for borderline personality disorder:
18
19 Results from the borderline personality disorder study of cognitive therapy (BOSCOT)
20
21 trial. *Journal of Personality Disorders, 20*(5), 450-465. doi:
22
23 10.1521/pedi.2006.20.5.450
24
25
26
- 27 De Beurs, E., & Zitman, F. (2006). The Brief Symptom Inventory (BSI): Betrouwbaarheid en
28
29 validiteit van een handzaam alternatief voor de SCL-90. *Maandblad Geestelijke*
30
31 *Volksgezondheid, 61*(2), 120-141.
- 32
33 Derogatis, L. R. (1977). *SCL-90: Administration, scoring and procedures manual-I for the*
34
35 *R(evised) version*. Baltimore, MD: John Hopkins University School of Medicine,
36
37 Clinical Psychometrics Research Unit.
- 38
39 Derogatis, L. R., & Melisaratos, N. (1983). The Brief Symptom Inventory: An introductory
40
41 report. *Psychological Medicine, 13*(3), 595-605.
- 42
43
44 Durlak, J. A., & DuPre, E. P. (2008). Implementation Matters: A Review of Research on the
45
46 Influence of Implementation on Program Outcomes and the Factors Affecting
47
48 Implementation. *American Journal of Community Psychology, 41*(3-4), 327-350. doi:
49
50 10.1007/s10464-008-9165-0
51
52
- 53 Ekselius, L., Lindstrom, E., von Knorring, L., Bodlund, O., & Kullgren, G. (1994). SCID II
54
55 interviews and the SCID Screen questionnaire as diagnostic tools for personality
56
57
58
59
60

- 1
2
3 disorders in DSM-III-R. *Acta Psychiatrica Scandinavica*, 90(2), 120-123. doi:
4
5 10.1111/j.1600-0447.1994.tb01566.x
6
- 7 Henggeler, S. W. (2004). Decreasing effect sizes for effectiveness studies- implications for
8
9 the transport of evidence-based treatments: Comment on Curtis, Ronan, and Borduin
10
11 (2004). *Journal of Family Psychology*, 18(3), 420-423. doi: 10.1037/0893-
12
13 3200.18.3.420
14
- 15
16 Hermens, M. L., van Splunteren, P. T., van den Bosch, A., & Verheul, R. (2011). Barriers to
17
18 implementing the clinical guideline on borderline personality disorder in the
19
20 Netherlands. *Psychiatric Services*, 62(11), 1381-1383. doi:
21
22 10.1176/ps.62.11.pss6211_1381
23
- 24
25 Hox, J. (2002). *Multilevel analysis: Techniques and applications*. Mahwah, NJ: Lawrence
26
27 Erlbaum Associates.
28
- 29
30 Hutsebaut, J., Bales, D., Kavelaars, M., Gerwen, J., Busschbach, J., & Verheul, R. (2011).
31
32 Implementatie van een behandelmodel voor persoonlijkheidsgestoorde adolescenten.
33
34 [journal article]. *Tijdschrift voor Psychotherapie*, 37(3), 162-176. doi:
35
36 10.1007/s12485-011-0030-5
37
- 38
39 Hutsebaut, J., Bales, D. L., Busschbach, J. J., & Verheul, R. (2012). The implementation of
40
41 mentalization-based treatment for adolescents: A case study from an organizational,
42
43 team and therapist perspective. [Article]. *International Journal of Mental Health*
44
45 *Systems*, 6(1), 10. doi: 10.1186/1752-4458-6-10
46
- 47
48 Leichsenring, F., Leibing, E., Kruse, J., New, A. S., & Leweke, F. (2011). Borderline
49
50 personality disorder. [Review]. *Lancet*, 377(9759), 74-84. doi: 10.1016/S0140-
51
52 6736(10)61422-5
53
- 54
55 Little, R. J. A., & Rubin, D. B. (1987). *Statistical analysis with missing data*. New York, NY:
56
57 John Wiley and Sons.
58
59
60

- 1
2
3 Nadort, M., Arntz, A., Smit, J. H., Giesen-Bloo, J., Eikelenboom, M., Spinhoven, P., . . . van
4
5 Dyck, R. (2009). Implementation of outpatient schema therapy for borderline
6
7 personality disorder with versus without crisis support by the therapist outside office
8
9 hours: A randomized trial. *Behaviour Research and Therapy*, 47(11), 961-973. doi:
10
11 10.1016/j.brat.2009.07.013
12
13
14 National Institute for Health and Clinical Excellence. (2009). Borderline personality disorder:
15
16 Treatment and management. Clinical Guideline 78. In B. P. Society (Ed.), (Vol. 78).
17
18 Leicester, UK: National Collaborating Centre for Mental Health.
19
20
21 Pfohl, B., Blum, N., & Zimmerman, M. (1997). *Structured interview for DSM-IV personality*
22
23 *(SIDP-IV)*. Washington, DC: American Psychiatric Press.
24
25
26 Schoenwald, S. K. (2008). Toward Evidence-Based Transport of Evidence-Based Treatments:
27
28 MST as an Example. *Journal of Child & Adolescent Substance Abuse*, 17(3), 69-91.
29
30 doi: 10.1080/15470650802071671
31
32 Singer, J. D., & Willett, J. B. (2003). *Applied longitudinal data analysis: Modeling change*
33
34 *and event occurrence*. Oxford, UK: Oxford University Press.
35
36
37 Soeteman, D. I., Hakkaart-van Roijen, L., Verheul, R., & Busschbach, J. J. (2008). The
38
39 economic burden of personality disorders in mental health care. *Journal of Clinical*
40
41 *Psychiatry*, 69(2), 259-265.
42
43
44 Soeteman, D. I., Verheul, R., & Busschbach, J. J. (2008). The burden of disease in personality
45
46 disorders: diagnosis-specific quality of life. *Journal of Personality Disorders*, 22(3),
47
48 259-268. doi: 10.1521/pedi.2008.22.3.259
49
50 Stoffers, J. M., Vollm, B. A., Rucker, G., Timmer, A., Huband, N., & Lieb, K. (2012).
51
52 Psychological therapies for people with borderline personality disorder. *Cochrane*
53
54 *Database of Systematic Reviews*, 8(8), CD005652. doi:
55
56 10.1002/14651858.CD005652.pub2
57
58
59
60

1
2
3 van den Bosch, L. M. C., & Sinnaeve, R. (2015). Dialectische gedragstherapie in Nederland:
4
5 Implementatie en consolidatie. *Tijdschrift voor Psychiatrie*, 57(Okttober), 719-726.

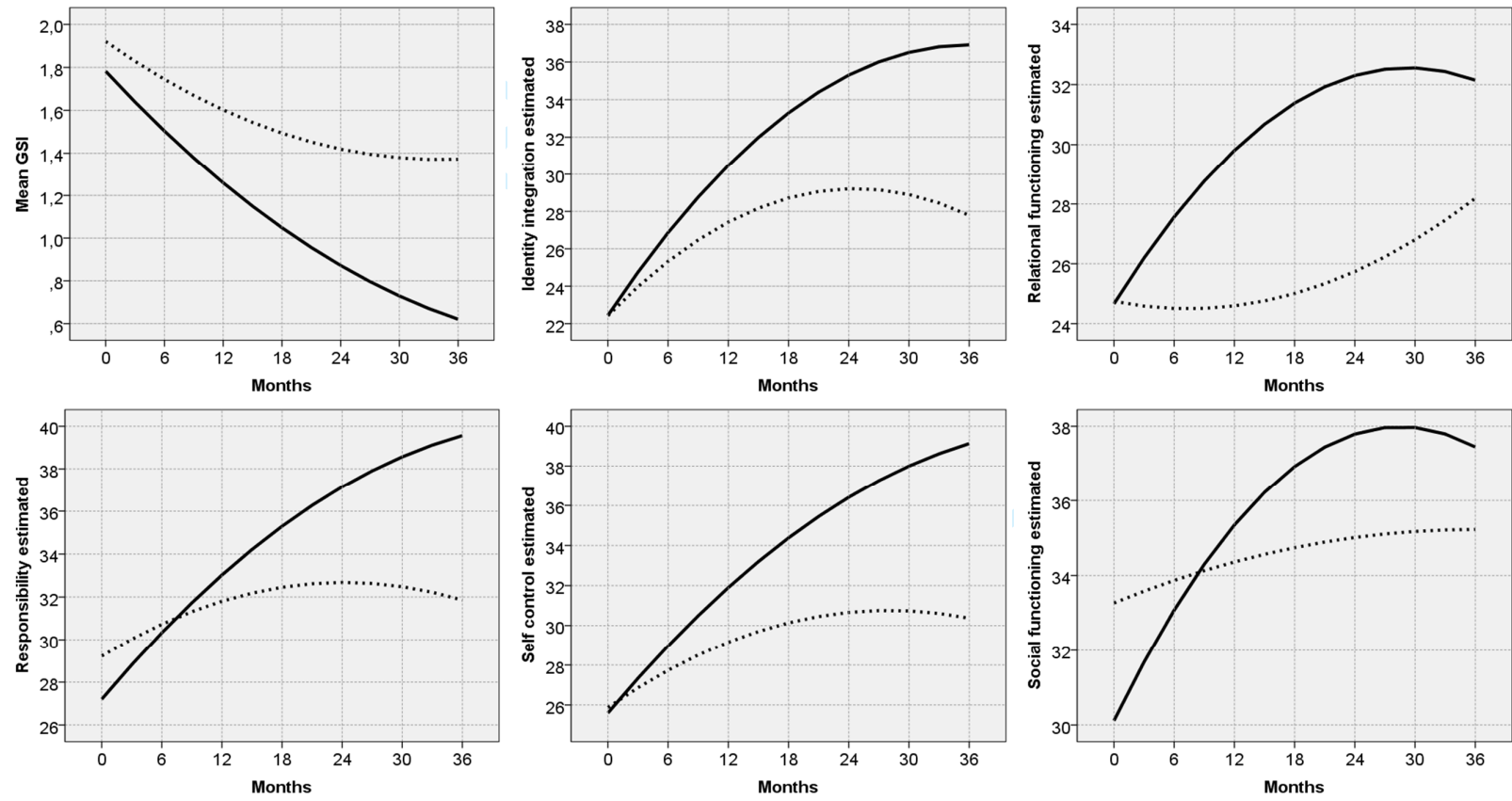
6
7 Verbeke, G., & Molenberghs, G. (Eds.). (1997). *Linear mixed models in practice: A SAS*
8
9 *oriented approach* (Vol. 126). New York, NY: Springer.

10
11 Verheul, R., Andrea, H., Berghout, C. C., Dolan, C., Busschbach, J. J., van der Kroft, P. J., . .
12
13 . Fonagy, P. (2008). Severity Indices of Personality Problems (SIPP-118):

14
15 . Development, factor structure, reliability, and validity. *Psychological Assessment*,
16
17 20(1), 23-34. doi: 10.1037/1040-3590.20.1.23

18
19
20 Weertman, A., Arntz, A., & Kerkhofs, M. (2008). *SCID II: Gestructureerd klinisch interview*
21
22 *voor het vaststellen van DSM-IV stoornissen*. Amsterdam, The Netherlands: Harcourt
23
24 Test Publishers.
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Figure 1
Estimated courses of outcome variables



Note: Solid lines = 'Pre-reorganization Cohort' (PRE-REORG); dotted lines = 'During reorganization Cohort' (REORG)

Table 1

Baseline characteristics of Pre-reorganization (PRE-REORG) and During reorganization Cohorts (REORG)

	'Pre-reorganization Cohort' (PRE-REORG) n = 30	'During reorganization Cohort' (REORG) n = 16		
	n (%)	n (%)	χ^2	<i>p</i>
Female	21 (70%)	13(81%)	0.23	0.64
Education				
- lower	4 (13%)	2 (13%)		
- high school	24 (80%)	12 (75%)	0.45	0.80
- higher	2 (7%)	2 (13%)		
Married	3 (10%)	2 (13%)	0.00	1.00
Living with:				
-Partner	7 (23%)	3 (19%)	0.00	1.00
-Parent	6 (20%)	5 (31%)	0.24	0.63
-Children	4 (13%)	3 (19%)	0.03	0.96
Paid work / study	5 (17%)	4 (25%)	0.08	0.77
	Mean (sd)	Mean (sd)	t	<i>p</i>
Age	29.8 (6.3)	27.9 (5.7)	-1.02	0.31
GSI	1.79 (0.70)	1.86 (0.61)	0.34	0.74
SIPP:				
Self-control	25.0 (6.5)	25.9 (6.8)	0.44	0.66
Identity integration	23.0 (7.0)	21.9 (7.1)	-0.50	0.62
Responsibility	26.9 (6.0)	29.8 (7.3)	1.46	0.15
Relational functioning	24.6 (6.5)	24.9 (7.5)	0.17	0.87
Social concordance	29.8 (6.9)	33.9 (6.7)	1.91	0.06
Number of BPD traits	6.9 (1.5)	6.3 (1.2)	-1.59	0.12

Table 2

Consensus ratings on adherence of two cohorts at organizational, team and therapist level

Organization	Cohort 1 (PRE- REORG)	Cohort 2 (REORG)
Commitment and support within the organization to fully implement MBT	7	4
Availability of comprehensive implementation plan	6	2/3
Sound financial management	7	4
Continuity in management	7	2/3
Organization of MBT unit (clear structure, defined roles and responsibilities, etc.)	6	2
Stability in the organization	5	3
Staff selection based on competences regarding treating BPD patients, MBT competence, team composition, affinity with treatment model	7	1
Team		
Well balanced team composition	6	2/3
Team size (8-12)	6	1
Leadership (clear leadership as supported by the whole team)	6	3
Team cohesion: secure, open, cohesive team	7	2
Mentalizing environment: open, responsive, mentalizing atmosphere	6	2/3
Availability of MBT expertise at the unit	6/7	2/3
MBT training and supervision	5/6	2/3
Consistency: ability of the team to deliver treatment in consistent manner	6	2/3
Coherency: team utilizes theoretically coherent (MBT) framework to tailor interventions	6	2/3
Continuity	6	2
Structure: Program structure, clear definition of roles and responsibilities	6	2
Therapist		
MBT experience with the model	4	2
Adherence to the model: adherence and competence with the model in individual sessions and group sessions	6	2/3
Commitment among all team members to MBT-model	7	3

1=very poor; 2= poor; 3= acceptable; 4= Adequate; 5= Good; 6= Very good; 7= excellent

Table 3

Effect estimates and standard errors of final between group mixed models.

Estimate [standard error] p-value	Intercept	Time linear	Time quadratic	‘Pre-reorganization Cohort’ (PRE)	‘Pre-reorganization Cohort’ (PRE) * Time linear	‘Pre-reorganization Cohort’ (PRE) * Time quadratic
GSI psychiatric symptoms	1.92 [0.19] <0.001	-0.032 [0.011] 0.006	0.0005 [0.0003] 0.094	-0.14 [0.23] 0.553	-0.017 [0.009] 0.071	
SIPP self-control	25.9 [1.6] <0.001	0.35 [0.13] 0.007	-0.006 [0.003] 0.058	-0.28 [1.94] 0.887	0.25 [0.09] 0.008	
SIPP identity integration	22.4 [2.1] <0.001	0.55 [0.14] <0.001	-0.011 [0.004] 0.004	0.014 [2.47] 0.995	0.25 [0.09] 0.005	
SIPP responsibility	29.2 [1.60] <0.001	0.29 [0.10] 0.006	-0.006 [0.003] 0.034	-2.02 [1.93] 0.299	0.27 [0.06] <0.001	
SIPP Relational capacities	24.7 [1.79] <0.001	-0.07 [0.18] 0.705	0.005 [0.005] 0.390	-0.08 [2.21] 0.969	0.61 [0.22] 0.006	-0.014 [0.006] 0.031
SIPP social concordance	33.3 [1.68] <0.001	0.11 [0.13] 0.386	-0.002 [0.004] 0.676	-3.16 [2.07] 0.132	0.44 [0.15] 0.004	-0.008 [0.004] 0.065

Table 4

Estimates and effect sizes for both cohorts

Outcome	'Pre-reorganization Cohort' (PRE-REORG)		'During reorganization Cohort' (REORG)		Difference	
	Estimate	Effect size	Estimate	Effect size	(sd) Effect size ¹	<i>p</i>
<i>GSI Psychiatric symptoms</i>						
Start	1.78		1.92		(0.79)	
18 months	1.05	-1.00	1.49	-0.58	-0.42	0.07
36 months	0.62	-1.56	1.37	-0.74	-0.82	0.07
<i>SIPP Self-control</i>						
Start	25.6		25.9		(7.0)	
18 months	34.4	1.22	30.1	0.59	0.63	0.008
36 months	39.1	1.76	30.4	0.58	1.17	0.008
<i>SIPP Identity integration</i>						
Start	22.4		22.4		(8.9)	
18 months	33.3	1.22	28.7	0.71	0.51	0.005
36 months	36.9	1.63	27.8	0.60	1.03	0.005
<i>SIPP Responsibility</i>						
Start	27.2		29.2		(6.9)	
18 months	35.3	1.18	32.5	0.47	0.71	<0.001
36 months	39.6	1.80	31.9	0.38	1.42	<0.001
<i>SIPP Relational capacities</i>						
Start	24.7		24.7		(7.4)	
18 months	31.4	0.91	25.0	0.04	0.88	0.002
36 months	32.1	1.02	28.2	0.47	0.55	0.117
<i>SIPP Social concordance</i>						
Start	30.1		33.3		(6.7)	
18 months	36.9	0.99	34.7	0.21	0.79	0.001
36 months	37.4	1.02	35.2	0.27	0.80	0.029

¹ Compared to baseline, negative values on the GSI indicate lower scores