

**Trauma and outcome in Mentalization-Based Therapy for Borderline Personality  
Disorder**

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### Abstract

**Background:** Recent meta-analyses suggest that many patients with borderline personality disorder (BPD) have a history of (complex) trauma. Although trauma is central in mentalization-based approaches to the understanding of BPD, surprisingly little is known about the effects of trauma on treatment outcomes in Mentalization-based treatment (MBT). This paper investigates the prevalence and impact of childhood trauma in BPD patients in MBT in the context of a randomized controlled trial comparing MBT day hospital (MBT-DH) and intensive outpatient MBT (MBT-IOP).

**Methods.** All 114 patients from the original multicenter RCT were included. Childhood trauma was assessed at baseline by the Childhood Trauma Questionnaire and its impact on symptom severity, interpersonal functioning and borderline pathology was investigated over a time horizon of 36 months after start of treatment using multilevel modeling.

**Results.** Childhood trauma was very common in BPD patients referred to MBT, with more than 85% of patients meeting cut-off criteria for substantial childhood trauma. However, childhood trauma had little impact on outcome in both MBT-DH and MBT-IOP in terms of improvements in BPD features and interpersonal functioning, although patients with high levels of childhood trauma seemed to improve more rapidly in MBT-DH compared with MBT-IOP in terms of symptom severity. Patients with a history of emotional neglect also showed more rapid changes in BPD symptoms in MBT-DH compared with MBT-IOP.

**Conclusions.** Findings are discussed in the context of a social communicative approach to BPD, with a focus on the need to address trauma in (MBT) treatment for BPD.

**Keywords:** Borderline personality disorder, trauma, mentalizing, epistemic trust, treatment outcome

### Highlights

- Childhood trauma was very common in BPD patients referred to Mentalization-Based Treatment (MBT).
- Childhood trauma had little impact on outcome in both MBT-DH and MBT-IOP, although patients with high levels of childhood trauma seemed to improve more rapidly in MBT-DH compared with MBT-IOP in terms of symptom severity.
- Treatments for patients with BPD need to focus on childhood trauma.

## Introduction

Mentalizing approaches to the understanding and treatment of borderline personality disorder (BPD) focus on three key capacities that are centrally implicated in the development of this highly debilitating disorder: (a) the capacity to establish healthy attachment relationships, (b) mentalizing, that is, the capacity to understand self and others in terms of intentional mental states), and (c) epistemic trust, that is, openness to receiving social communications as potentially personally relevant and of generalizable significance. There is increasing evidence that trauma, particularly attachment trauma or so-called complex trauma, is associated with disruptions in each of these three capacities (1). Yet, only little is known on the impact of (complex) trauma and trauma related disorders such as post-traumatic stress disorder (PTSD) on treatment outcome for BPD. A recent systematic review and meta-analysis of psychotherapy for PTSD in patients with BPD, found evidence for its safety and efficacy (2). For instance, Bohus and colleagues developed an imaginative modular treatment for trauma and PTSD based on principles derived from dialectical behavior therapy (3). Similarly, within MBT there is an increasing emphasis on addressing complex trauma more explicitly, as recent efforts are focusing on the development and evaluation of a specific trauma-based module as part of MBT (4, 5). However, no study has yet investigated the impact of trauma on mentalization-based treatment (MBT) for BPD.

This paper is the first to empirically investigate the impact of childhood trauma on outcome in two types of MBT for BPD. We first review current perspectives on trauma and BPD from a mentalizing approach, including a brief summary of the principles in the treatment of trauma in MBT. Next, we report findings from a study investigating the prevalence and impact of childhood trauma on treatment outcome in BPD patients in the

context of a multisite randomized controlled trial comparing two types of MBT, namely, MBT offered in the context of a day hospitalization program (MBT-DH) and intensive outpatient MBT (MBT-IOP), from start of treatment to 36-month follow-up.

### **A Mentalizing Approach to Trauma in BPD**

Complex trauma, also referred to as attachment trauma, developmental trauma, or Type II trauma (as opposed to Type I trauma, which refers to discrete types of trauma), involves prolonged experiences of neglect and/or abuse, typically within an attachment/caregiving context. This represents to the child an unsolvable dilemma, as caregivers who are supposed to protect and care for the child are at the same time a source of anxiety, threat, anger, neglect, and/or abuse (6-9). Complex trauma typically is also part of a broader “risky environment” characterized by abuse and neglect (10, 11)

There is good evidence, based on both cross-sectional and prospective studies, that complex trauma is implicated in the emergence of BPD in at least a sizeable proportion of patients, with some studies suggesting that up to 90% of patients with BPD report such a history (12-15). Yet, these findings should not be interpreted as suggesting a purely environmental perspective on vulnerability to BPD, as a subsample of individuals with BPD does not report a history of early adversity (16, 17). Moreover, individual variables including genetic and temperamental factors may moderate the impact of early adversity on the development of BPD (18). For instance, the heritability of BPD has been estimated to range between 40% and 50% (19-22), and several studies suggest the importance of considering gene–environment interactions in BPD, with the effects of trauma being in part dependent on genetic vulnerability (18, 23).

Hence, the role of (complex trauma should be considered within a broader socio-ecological framework with the interactions between environmental and biological factors

disrupting the evolutionarily pre-wired human capacity for social learning and salutogenesis (i.e., the capacity to benefit from positive social input) by their negative effects on the capacity to form healthy attachment relationships, mentalizing, and the capacity for epistemic trust. In what follows, we discuss the impact of trauma on each of these domains.

### *Trauma and attachment relationships*

The impact of complex trauma on attachment and mentalizing has been well demonstrated. In normative development, the attachment system is activated in response to threat (24, 25), leading the individual to seek proximity to responsive attachment figures, which leads in turn to a down-regulation of distress and discomfort. At the neurobiological level, this response is mediated by a mesocorticolimbic dopaminergic “reward system” that plays an essential role in downregulating the stress system and is responsible for feeling supported, validated, and understood by close others (26, 27). Trauma typically disrupts the virtuous cycle associated with proximity seeking in the face of stress and adversity, as the individual begins to rely excessively either on attachment hyperactivating or deactivating strategies, or a combination of both. These strategies are considered to be adaptations to an environment characterized by inconsistency in, unresponsiveness of, and/or abuse by attachment figures (28-30). From this perspective, attachment deactivating strategies develop as a means to deal with the (perceived) unresponsiveness of attachment figures. Attachment hyperactivating strategies, in turn, tend to develop as an attempt to elicit care and support from inconsistently responsive attachment figures. Disorganized attachment, characterized by the oscillation between attachment hyperactivating and deactivating strategies, is thought to primarily develop in individuals with a history of complex trauma. These individuals typically find themselves in a catch-22 situation, as the very same caregivers who are expected to be supportive and comforting thereby down-regulating distress, are also the source of conflict,

abuse, and/or neglect (31). A continuous approach–avoidance conflict in relationships emerges. in relationships, which may help to explain the marked oscillation typical of these individuals' attachment relationships, leading to severe impairments in the capacity to seek help from others, including mental health professionals (32, 33). Consistent with these assumptions, studies have reported high rates of both preoccupied (reflecting attachment hyperactivating strategies) and disorganized (reflecting a combination of attachment hyperactivating and deactivating strategies) attachment in individuals with BPD (34, 35).

#### *Trauma, mentalizing and re-victimization*

The pernicious impact of trauma on mentalizing has also been amply demonstrated (4). Growing up in an environment characterized by abuse and/or neglect is hypothesized to undermine the capacity for mentalizing, particularly in the case of attachment trauma, because the individual is deprived of a responsive caregiver that is essential in acquiring the capacity to regulate stress and arousal. Feelings of isolation and loneliness typically characterize individuals with BPD with a history of trauma experience, as well as their tendency to act out these unmentalized experiences of the self and others as bad, evil, neglected/neglectful, or unworthy, resulting in high rates of reenactment that lead to high levels of revictimization (36, 37). Theoretically, revictimization is linked to the familiar, yet highly maladaptive, pattern where the abuser acts at the same time as the source of anxiety, anger, and conflict, and the source of care, love, and support (33). thereby repeating the unsolvable approach-avoidance conflict typical of the disorganized/disoriented attachment pattern. Moreover, many individuals with a history of trauma themselves become perpetrators of abuse of their children, partner, and/or others in their environment (e.g., friends, coworkers, employees), as specific features in others (e.g., talent or submissiveness) may trigger their own past experiences of abuse and/or neglect. When the individual is faced with the inability to reflect



on these unmentalized experiences, nonmentalizing modes of experiencing both the self and other tend to reemerge (see Box 1), which further impair opportunities to recalibrate one's mind.

#### *Trauma and epistemic trust*

There is now also emerging evidence that trauma, and particularly attachment trauma, may undermine epistemic trust; that is the willingness and openness to consider new knowledge by means of social communications as trustworthy, potentially personally relevant and of generalizable significance to integrate in their lives, although the evidence is still somewhat inconclusive (38). As a result, the traumatized individual may become completely cut off from social learning and salutogenesis (1, 39). Epistemic vigilance in traumatized individuals may also be accompanied by initial excessive epistemic credulity, often driven by strong wishes to be able to rely on a trusted other, rendering these individuals vulnerable to exploitation and abuse, which then further increases their epistemic vigilance (38).

### **MBT and Trauma**

MBT centrally focuses on improving both the capacity to mentalize and epistemic trust, particularly in the context of attachment relationships, with the aim of fostering salutogenesis (40). Hence, the main aim of MBT is not just to improve symptoms and relational functioning, but to enable further personal growth. MBT has a core focus on dominant interaction patterns, that result from mentalizing vulnerabilities, specifically in the context of attachment relationships. Work around trauma has therefore always been an important focus in MBT for BPD, as most patients present with a history of complex trauma, yet recent developments stress the importance of trauma work in MBT even further (see Box 2).

Research has supported the effectiveness of MBT in patients with high levels of trauma, such as those with BPD and antisocial personality disorder (1, 41). Importantly, both randomized controlled trials and naturalistic studies have shown continuing improvement in areas such as interpersonal relationships, work, and education up to 8 years after the end of treatment (42). Findings that mentalizing, and the capacity to reflect on traumatic experiences in particular (i.e., trauma-specific reflective functioning), provide an important buffer between trauma, features of post-traumatic stress disorder (PTSD) such as dissociation, and the intergenerational transmission of trauma (43), further substantiate the mentalizing approach to trauma. Moreover, there is increasing evidence for the effectiveness of preventive interventions rooted in MBT for families at risk for maltreatment and abuse (44-47). Yet, no study to date has directly investigated the impact of trauma on the outcome of MBT in individuals with BPD.

### **The Present Study**

The present study is the first study to directly investigate the prevalence of trauma in patients with BPD referred to MBT, and to investigate the impact of trauma on outcome in MBT in the context of a multicenter randomized controlled trial comparing MBT-DH and MBT-IOP from start of treatment to 36-month follow-up. Both programs were associated with medium to large effects at 18- and 36- months follow-up on a wide range of outcome measures. MBT-DH was not superior in terms of effectiveness, nor more cost-effective, compared to MBT-IOP (48-51).

With regard to childhood trauma, consistent with previous findings concerning high levels of early adversity in BPD patients and the focus of MBT on the most severely affected BPD patients, we expected there to be high levels of trauma in BPD patients referred to MBT.

Second, because studies generally suggest a negative impact of early adversity on treatment outcomes (31), we expected that trauma would negatively affect the outcome of MBT. Given that MBT focuses on improving functioning beyond symptom severity, in this study we included not only general distress, but also BPD symptoms and interpersonal functioning, as outcome measures. Finally, because there were no differences in outcome associated with MBT-DH and MBT-IOP in the current trial at 18- and 36-month follow-up (48, 50), we expected to find no differences in the effect of trauma on outcomes in the two types of MBT.

## **Methods**

### **Participants and Procedures**

This study was approved by the Medical Ethical Committee of Erasmus Medical Center, Rotterdam, the Netherlands (NL38571.078.12), written informed consent was obtained, and the study was registered at the Netherlands Trial Register, NTR2292. Inclusion and exclusion criteria, patient characteristics, and randomization procedures, including study enrollment and allocation, have been described in detail elsewhere (48). Of the 114 randomized patients from the original trial, 83 patients ( $n=34$  in MBT-IOP,  $n=49$  in MBT-DH) had available data on childhood trauma, because trauma assessment was included after inclusion had already been started. Patients were assessed at baseline, prior to randomization, and subsequently from the start of treatment every 6 months up to 36 months after the start of treatment on a range of outcome measures.

### **Measures**

The primary outcome measure was symptom severity as assessed by the Global Severity Index (GSI) of the Brief Symptom Inventory (BSI) (52, 53). Secondary outcomes were

borderline features as measured by the Personality Assessment Inventory (PAI-BOR) (54) and interpersonal functioning as assessed by the Inventory of Interpersonal Problems (IIP) (55, 56).

The prevalence of trauma in childhood was measured by the Dutch version of the Childhood Trauma Questionnaire (CTQ) (57). The CTQ is a retrospective self-report questionnaire that measures five categories of childhood trauma experience, including emotional, physical, and sexual abuse, and emotional and physical neglect. Each subscale is measured in 5 items rated on a 5-point Likert scale: (1) never true, (2) rarely true, (3) sometimes true, (4) often true, and (5) very often true. Each subscale score ranges from 5 (no history of abuse or neglect) to 25 (very extreme history of abuse and neglect). In this study, participants were classified as having a substantial history of childhood trauma in any of 5 specific categories, using the following cut-off scores from the manual: 13 or higher for emotional abuse, 10 or higher for physical abuse, 8 or higher for sexual abuse, 15 or higher for emotional neglect, and 10 or higher for physical neglect. Research has shown good psychometric properties for both the original version of the CTQ (57, 58) and the Dutch translation (59).

### **Treatment Interventions**

A detailed description of MBT-DH and MBT-IOP is provided elsewhere (48). Briefly, MBT-DH involved a day hospitalization program of 5 days per week, and MBT-IOP an outpatient treatment program conducted 2 days per week. Both MBT-DH and MBT-IOP involved weekly individual sessions, but the intensity of group therapy differed markedly between the programs. Treatment adherence to the MBT model in the intensive treatment phase was rated as adequate by three independent raters and did not differ between MBT-DH and MBT-IOP.

## Statistical Analyses

Analyses were performed on all available data using IBM SPSS Statistics Version 25.0 for Windows. The prevalence of trauma was examined using both dimensional (means) and categorical scores on the CTQ at baseline using two-tailed independent sample *t*-tests and chi-square tests, as appropriate.

For predictor and moderator analyses, multilevel modelling was used with participants as random effect to best accommodate the missing data that are an inevitable feature of longitudinal follow-up and to deal with the dependency of repeated measures within subjects over time. Time points were coded -6, -5, -4, -3, -2, -1, and 0, implying that regression coefficients involving time measured the rate of change from baseline to 36-month follow-up and regression intercepts referenced group differences at the last time point. Based upon previous analyses, random slopes of change were assumed. Models with quadratic time functions or quadratic (interaction) terms did not show a better fit based on the Akaike Information Criterion (60) or Schwarz's Bayesian Information Criterion (61). For reasons of parsimony, we therefore report linear models. Treatment groups were coded 0=MBT-IOP and 1=MBT-DH. Consequently, differences in slope refer to differences in the slope of MBT-DH compared with MBT-IOP. For the mixed models, the main effect of trauma is reported, along with the interaction effects with treatment group and the rate of change from baseline to 36 months across all levels of trauma (for both treatment groups combined). The critical coefficients for each trauma predictor are (a) the two-way trauma (present/absent) predictor  $\times$  time interaction, indicating the predictive value of the level of trauma on the rate of change, and (b) the three-way predictor  $\times$  time  $\times$  group interaction, indicating the moderating role of trauma on the rate of change. To investigate the robustness of models, we also ran mixed model analyses for the two-way interaction (predictor  $\times$  time) separately. As these analyses

yielded similar results, only estimates from the three-way interaction model are reported. Results of two-way interaction models are available upon request from the first author.

## **Results**

### **Prevalence of Trauma**

There were no significant pre-treatment differences between patients randomized to MBT-IOP and MBT-DH in terms of demographic and clinical features, and baseline levels of the outcome measures (see Table 1). There were also no differences in the prevalence of trauma types and overall trauma between patients randomized to MBT-IOP and MBT-DH. In total, 86% of patients had scores above the cut-off for the presence of substantial trauma on at least one of the trauma categories (see Table 1). Emotional neglect was most common (66%), followed by emotional abuse (57%) and sexual abuse (40%). Physical neglect (37%) and physical abuse (22%) were somewhat less prevalent, but still substantially higher than in community samples. Around 20% of patients reported several types of trauma, while less than 15% did not meet criteria for substantial trauma.

### **Trauma as Predictor and Moderator of Treatment Outcome**

Results of the multilevel analyses are summarized in Table 2. Multilevel estimates and model parameters from the three-way interaction models of all trauma predictors for each of the outcome measures are available in Supplemental Table S1.

For symptom severity, in contrast to predictions, patients with and without trauma showed similar rates of change in MBT-DH, and patients with a history of emotional or physical neglect even tended to show a faster rate of change in MBT-DH compared with those without such a history (see Figure 1). Yet, patients scoring above the cut-off on emotional neglect, emotional abuse, sexual abuse, or physical neglect, showed a slower rate

of change in MBT-IOP compared with patients without trauma. For physical abuse, a similar trend was observed, but this trend did not reach significance ( $p=.062$ ). Thus, contrary to expectations, trauma had a differential impact on treatment outcome in MBT-DH and MBT-IOP in terms of improvement in symptomatic distress.

Trauma was less predictive of treatment outcome in terms of improvement in borderline symptoms and interpersonal problems. For borderline symptoms, only emotional neglect showed a significant moderating effect ( $p=.028$ ). As Figure 2 shows, patients in MBT-IOP with high levels of emotional neglect showed a slower rate of improvement in BPD features compared with those without substantial levels of emotional neglect, whereas in MBT-DH, patients with a history of emotional neglect showed a slightly greater rate of improvement compared with those without such a history. None of the other trauma types predicted changes in borderline symptoms in MBT-DH or MBT-IOP.

There was only a trend ( $p=.064$ ) for physical abuse to moderate changes in interpersonal problems in MBT-IOP versus MBT-DH. Patients with high levels of physical abuse tended to show a slower rate of change in MBT-IOP compared with those without substantial physical abuse, whereas in MBT-DH, there was a trend for patients with high levels of physical abuse to show greater improvement compared with patients without trauma on interpersonal problems (see Figure 3). None of the other trauma types predicted changes in interpersonal problems.

### **Discussion**

Three major sets of findings emerged based on this study. First, consistent with studies reporting that up to 90% of individuals with BPD have a history of early adversity (12), childhood trauma was very common in BPD patients referred to MBT, with 86% of patients having scores above the cut-off for the presence of substantial childhood trauma. Most

patients reported high levels of emotional neglect, emotional abuse, and sexual abuse, while physical neglect and physical abuse were somewhat less common, but still more prevalent compared with community samples. Importantly, about 15% of BPD patients did not report elevated levels of childhood trauma.

Second, and contrary to predictions, childhood trauma was not a strong predictor of outcome in MBT, with some important exceptions. Patients with elevated levels of emotional neglect, emotional or sexual abuse, or physical neglect in childhood, tended to show slower rates of improvement in terms of symptom severity in MBT-IOP compared with those without a history of trauma, while in MBT-DH, patients with a history of trauma seemed to show similar, and in some cases even greater, rates of improvement in symptom severity compared with those without such a history. The fact that the less intensive outpatient treatment may provide less containment and scaffolding of mentalizing and general functioning compared with the more intensive day hospitalization program may in part explain these findings. Patients with a history of childhood trauma may show higher levels of symptomatic distress during the intensive treatment phase and after the end of treatment in MBT-IOP, as these individuals may struggle to develop robust mentalizing, more secure attachment relationships, and epistemic trust, as they may find it more difficult to deal with the inevitable struggles and challenges that life brings. BPD patients with elevated levels of childhood trauma may benefit in this respect from the more containing environment of a day hospital setting, leading them to achieve similar and sometimes perhaps even greater improvements than those achievable in an outpatient setting. Moreover, the high levels of epistemic distrust that are typically associated with trauma may play an important role in this context as well, as patients in MBT-IOP may more readily find themselves in a state of isolation between therapeutic sessions, cut off from interpersonal experiences that allow the recalibration of the mind when faced with new challenges. Although these assumptions



remain to be empirically investigated, they are consistent with earlier findings from this trial showing that, on average, it took BPD patients in MBT-IOP slightly longer to achieve similar therapeutic improvements than patients in MBT-DH (50).

Finally, trauma seemed to have less impact on changes in BPD symptoms and interpersonal problems, but the few significant findings again favored MBT-DH. Hence, overall, these findings suggest that MBT-DH may be slightly more effective than MBT-IOP in the treatment of patients with substantial childhood trauma. Yet, a greater focus on trauma treatment in the early phase of MBT-IOP might further reduce the observed difference in effectiveness with MBT-DH. Specifically, BPD patients with severe childhood trauma may require more specific interventions as a critical prerequisite for change in order to develop more robust mentalizing, secure attachment, epistemic trust, and the associated capacity for salutogenesis.

Findings from this study need to be interpreted in the context of important limitations. First, childhood trauma was assessed using a brief self-report measure. Although the validity of the CTQ is fairly well established, recall and reporting bias may have influenced the findings of this study. Moreover, cut-off criteria used in this study were based on normative data from a US sample. The fact that analyses using the dimensional scores from the CTQ yielded similar results provide some confidence in the robustness of the findings reported in this study. Second, replication of these findings in larger samples is needed, as the relatively small sample size may have limited statistical power. Finally, this study reported post-hoc analyses using data from a larger trial that was not specifically conducted to investigate the impact of trauma on outcome in MBT-DH and MBT-IOP. Hence, the current findings should be considered preliminary.

## **Conclusions**

Despite these limitations, this study suggests that trauma does not have substantial effects on MBT for BPD overall, although patients with substantial trauma showed somewhat better outcomes in MBT-DH than in MBT-IOP. More research is needed to investigate whether a greater focus on trauma in the initial phases of MBT may further improve treatment outcomes of MBT for BPD and MBT-IOP specifically.

### References

1. Luyten P, Campbell C, Allison E, Fonagy P. The mentalizing approach to psychopathology: State of the art and future directions. *Annu Rev Clin Psychol.* 2020;16:297-325.
2. Slotema CW, Wilhelmus B, Arends LR, Franken IHA. Psychotherapy for posttraumatic stress disorder in patients with borderline personality disorder: a systematic review and meta-analysis of its efficacy and safety. *Eur J Psychotraumatol.* 2020;11:1796188.
3. Bohus M, Schmahl C, Fydrich T, Steil R, Muller-Engelmann M, Herzog J, Ludascher P, Kleindienst N, Priebe K. A research programme to evaluate DBT-PTSD, a modular treatment approach for Complex PTSD after childhood abuse. *Borderline Personality Disorder and Emotional Dysregulation.* 2019;6:7.
4. Luyten P, Campbell C, Fonagy P. Borderline personality disorder, complex trauma, and problems with self and identity: A social-communicative approach. *J Pers.* 2020;88:88-105.
5. Luyten P, Fonagy P: Mentalizing and trauma. in *Handbook of mentalizing in mental health practice.* Edited by Bateman A, Fonagy P. 2nd ed. Washington, DC, American Psychiatric Publishing; 2019. pp. 79-99.
6. Asnes AG, Leventhal JM. Connecting the dots in childhood and adolescent trauma. *Arch Pediatr Adolesc Med.* 2011;165:87-89.
7. Herman J: *Trauma and recovery.* New York, NY, Basic Books; 1992.
8. Meichenbaum D: *A clinical handbook/practical therapist manual for assessing and treating adults with post-traumatic stress disorder (PTSD).* Waterloo, Canada, Institute Press; 1994.
9. Terr LC. Childhood traumas: An outline and overview. *Am J Psychiatry.* 1991;148:10-20.
10. Cicchetti D, Toth SL. Child maltreatment. *Annu Rev Clin Psychol.* 2005;1:409-438.
11. McLaughlin KA, Green JG, Gruber MJ, Sampson NA, Zaslavsky AM, Kessler RC. Childhood adversities and adult psychiatric disorders in the National Comorbidity Survey

Replication II: Associations with persistence of DSM-IV disorders. *Arch Gen Psychiatry*. 2010;67:124-132.

12. Stepp SD, Lazarus SA, Byrd AL. A systematic review of risk factors prospectively associated with borderline personality disorder: Taking stock and moving forward. *Personal Disord*. 2016;7:316-323.

13. de Aquino Ferreira LF, Queiroz Pereira FH, Neri Benevides AML, Aguiar Melo MC. Borderline personality disorder and sexual abuse: A systematic review. *Psychiatry Res*. 2018;262:70-77.

14. Ball JS, Links PS. Borderline personality disorder and childhood trauma: Evidence for a causal relationship. *Curr Psychiatry Rep*. 2009;11:63-68.

15. Chanen AM, Kaess M. Developmental pathways to borderline personality disorder. *Curr Psychiatry Rep*. 2012;14:45-53.

16. Kingdon DG, Ashcroft K, Bhandari B, Gleeson S, Warikoo N, Symons M, Taylor L, Lucas E, Mahendra R, Ghosh S, Mason A, Badrakalimuthu R, Hepworth C, Read J, Mehta R. Schizophrenia and borderline personality disorder: Similarities and differences in the experience of auditory hallucinations, paranoia, and childhood trauma. *J Nerv Ment Dis*. 2010;198:399-403.

17. Afifi TO, Mather A, Boman J, Fleisher W, Enns MW, Macmillan H, Sareen J. Childhood adversity and personality disorders: Results from a nationally representative population-based study. *J Psychiatr Res*. 2011;45:814-822.

18. Belsky DW, Caspi A, Arseneault L, Bleidorn W, Fonagy P, Goodman M, Houts R, Moffitt TE. Etiological features of borderline personality related characteristics in a birth cohort of 12-year-old children. *Dev Psychopathol*. 2012;24:251-265.

19. Bornovalova MA, Hicks BM, Iacono WG, McGue M. Stability, change, and heritability of borderline personality disorder traits from adolescence to adulthood: A longitudinal twin study. *Dev Psychopathol.* 2009;21:1335-1353.
20. Distel MA, Trull TJ, Derom CA, Thiery EW, Grimmer MA, Martin NG, Willemsen G, Boomsma DI. Heritability of borderline personality disorder features is similar across three countries. *Psychol Med.* 2008;38:1219-1229.
21. Kendler KS, Aggen SH, Czajkowski N, Roysamb E, Tambs K, Torgersen S, Neale MC, Reichborn-Kjennerud T. The structure of genetic and environmental risk factors for DSM-IV personality disorders: A multivariate twin study. *Arch Gen Psychiatry.* 2008;65:1438-1446.
22. Torgersen S, Lygren S, Oien PA, Skre I, Onstad S, Edvardsen J, Tambs K, Kringlen E. A twin study of personality disorders. *Compr Psychiatry.* 2000;41:416-425.
23. Distel MA, Middeldorp CM, Trull TJ, Derom CA, Willemsen G, Boomsma DI. Life events and borderline personality features: The influence of gene-environment interaction and gene-environment correlation. *Psychol Med.* 2011;41:849-860.
24. Bowlby J: *Attachment and loss, Vol. 2: Separation: Anxiety and anger.* New York, NY, Basic Books; 1973.
25. Mikulincer M, Shaver PR: *Attachment in adulthood: Structure, dynamics and change.* New York, NY, Guilford Press; 2007.
26. Long M, Verbeke W, Ein-Dor T, Vrticka P. A functional neuro-anatomical model of human attachment (NAMA): Insights from first- and second-person social neuroscience. *Cortex.* 2020;126:281-321.
27. Feldman R. The neurobiology of human attachments. *Trends Cogn Sci.* 2017;21:80-99.
28. Ein-Dor T, Mikulincer M, Doron G, Shaver PR. The attachment paradox: How can so many of us (the insecure ones) have no adaptive advantages? *Perspect Psychol Sci.* 2010;5:123-141.

29. Ellis BJ, Boyce WT, Belsky J, Bakermans-Kranenburg MJ, van Ijzendoorn MH. Differential susceptibility to the environment: An evolutionary–neurodevelopmental theory. *Dev Psychopathol.* 2011;23:7-28.
30. Luyten P, Campbell C, Fonagy P. Rethinking the relationship between attachment and personality disorder. *Curr Opin Psychol.* 2021;37:109-113.
31. Teicher MH, Samson JA. Childhood maltreatment and psychopathology: A case for ecophenotypic variants as clinically and neurobiologically distinct subtypes. *Am J Psychiatry.* 2013;170:1114-1133.
32. Holmes J. Disorganized attachment and borderline personality disorder: A clinical perspective. *Attach Hum Dev.* 2004;6:181-190.
33. Main M, Hesse E: Adult lack of resolution of attachment-related trauma related to infant disorganized/disoriented behavior in the Ainsworth strange situation: Linking parental states of mind to infant behavior in a stressful situation. in *Attachment in the preschool years: Theory, research, and intervention.* Edited by Greenberg MT, Cicchetti D, Cummings EM. Chicago, IL, University of Chicago Press; 1990. pp. 339-426.
34. Levy KN, Beeney JE, Temes CM. Attachment and its vicissitudes in borderline personality disorder. *Curr Psychiatry Rep.* 2011;13:50-59.
35. Fonagy P, Luyten P: A multilevel perspective on the development of borderline personality disorder. in *Developmental Psychopathology Vol 3: Maladaptation and psychopathology.* Edited by Cicchetti D. 3rd ed. New York, NY, John Wiley & Sons; 2016. pp. 726-792.
36. Widom CS. Posttraumatic stress disorder in abused and neglected children grown up. *Am J Psychiatry.* 1999;156:1223-1229.
37. Cloitre M, Scarvalone P, Difede J. Posttraumatic stress disorder, self- and interpersonal dysfunction among sexually retraumatized women. *J Traum Stress.* 1997;10:437-452.

38. Campbell C, Tanzer M, Saunders R, Booker T, Allison E, Li E, O'Dowda C, Luyten P, Fonagy P. Development and validation of a self-report measure of epistemic trust. *PLoS ONE*. 2021;16:e0250264.
39. Fonagy P, Campbell C, Constantinou M, Higgitt A, Allison E, Luyten P. Culture and psychopathology: An attempt at reconsidering the role of social learning. *Dev Psychopathol*. 2021:(Epub ahead of print).
40. Bateman A, Fonagy P: *Handbook of mentalizing in mental health practice*. 2nd ed. Washington, DC, American Psychiatric Press; 2019.
41. Storebø OJ, Stoffers-Winterling JM, Völlm BA, Kongerslev MT, Mattivi JT, Jørgensen MS, Faltinsen E, Todorovac A, Sales CP, Callesen HE, et al. Psychological therapies for people with borderline personality disorder. *Cochrane Database Syst Rev*. 2020.
42. Bateman A, Constantinou MP, Fonagy P, Holzer S. Eight-year prospective follow-up of mentalization-based treatment versus structured clinical management for people with borderline personality disorder. *Personal Disord*. in press.
43. Oehlman Forbes D, Lee M, Lakeman R. The role of mentalization in child psychotherapy, interpersonal trauma, and recovery: A scoping review. *Psychotherapy*. 2021;58:50-67.
44. Byrne G, Slead M, Midgley N, Fearon P, Mein C, Bateman A, Fonagy P. Lighthouse Parenting Programme: Description and pilot evaluation of mentalization-based treatment to address child maltreatment. *Clin Child Psychol Psychiatry*. 2018:1359104518807741.
45. Barlow J, Slead M, Midgley N. Enhancing parental reflective functioning through early dyadic interventions: A systematic review and meta-analysis. *Infant Ment Health J*. 2020.
46. Midgley N, Besser SJ, Fearon P, Wyatt S, Byford S, Wellsted D. The Herts and Minds study: feasibility of a randomised controlled trial of Mentalization-Based Treatment versus usual care to support the wellbeing of children in foster care. *BMC Psychiatry*. 2019;19:215.

47. Byrne G, Murphy S, Connon G. Mentalization-based treatments with children and families: A systematic review of the literature. *Clin Child Psychol Psychiatry*. 2020;25:1022-1048.
48. Smits ML, Feenstra DJ, Eeren HV, Bales D, Laurensen EMP, Blankers M, Soons MBJ, Dekker JJM, Lucas Z, Verheul R, Luyten P. Day hospital versus intensive out-patient mentalisation-based treatment for borderline personality disorder: a multicentre randomised clinical trial. *Br J Psychiatry*. 2019;216:79-84.
49. Smits ML, Feenstra DJ, Bales DL, Blankers M, Dekker JJM, Lucas Z, Kamphuis JH, Busschbach JJ, Verheul R, Luyten P. Day Hospital versus Intensive Outpatient Mentalization-Based Treatment: 3-year follow-up of patients treated for borderline personality disorder in a multicentre randomized clinical trial. Manuscript submitted for publication. 2020.
50. Smits ML, Feenstra DJ, Bales DL, Blankers M, Dekker JJM, Lucas Z, Kamphuis JH, Busschbach JJV, Verheul R, Luyten P. Day hospital versus intensive outpatient mentalization-based treatment: 3-year follow-up of patients treated for borderline personality disorder in a multicentre randomized clinical trial. *Psychological Medicine*. 2020;(Epub ahead of print).
51. Blankers M, Smits ML, Feenstra DJ, Horn EK, Kamphuis JH, Bales DL, Lucas Z, Remeus MGA, Dekker JJM, Verheul R, Busschbach JJV, Luyten P. The cost-effectiveness of day hospital versus intensive outpatient mentalization-based treatment: economic evaluation alongside a randomized controlled trial with 36-month follow-up. Submitted 2021.
52. De Beurs E: Brief Symptom Inventory 18, -BSI 18-, Handleiding herziene editie. Leiden, PITS B.V.; 2011.
53. Derogatis LR: Brief Symptom Inventory. Baltimore, MD: Clinical Psychometric Research; 1975.



54. Distel MA, De Moor MHM, Boomsma DI. Nederlandse vertaling van de Personality Assessment Inventory - Borderline kenmerken schaal (PAI-BOR): normgegevens, factorstructuur en betrouwbaarheid. [Dutch translation of the Personality Assessment Inventory – Borderline Features scale (PAI-BOR): Norms, factor structure and reliability]. *Psychologie en Gezondheid*. 2009;37:38-46.
55. Horowitz LM, Alden LE, Wiggins JS, Pincus AL: Inventory of Interpersonal Problems: Manual. San Antonio, TX, The Psychological Corporation; 2000.
56. Zevalkink J, de Geus J, Hoek W, Berghout CC, Brouwer D, Riksen-Walraven JMA, Kooiman K, Katzko M: Manual IIP-64-NL: Inventory of Interpersonal Problems - Dutch version (version 4.2) Amsterdam, Internal report Nederlands Psychoanalytisch Instituut; 2012.
57. Bernstein D, Fink L: Child Trauma Questionnaire: A retrospective self-report questionnaire and manual. San Antonio, Psychological Corp; 1998.
58. Bernstein DP, Stein JA, Newcomb MD, Walker E, Pogge D, Ahluvalia T, Stokes J, Handelsman L, Medrano M, Desmond D, Zule W. Development and validation of a brief screening version of the Childhood Trauma Questionnaire. *Child Abuse Negl*. 2003;27:169-190.
59. Thombs BD, Bernstein DP, Lobbestael J, Arntz A. A validation study of the Dutch Childhood Trauma Questionnaire-Short Form: Factor structure, reliability, and known-groups validity. *Child Abuse Negl*. 2009;33:518-523.
60. Bozdogan H, Sclove S. Multi-sample cluster analysis using Akaike's Information Criterion. *Ann Inst Stat Math*. 1984;36:163-180.
61. Schwarz GE. Estimating the dimension of a model. *Ann Stat*. 1978;6:461-464.

**Declaration of Conflicting Interests**

Patrick Luyten is involved in the development, training, and dissemination of mentalization-based treatments.

Figure 1. Slopes of improvement in general distress of patients in MBT-DH versus patients in MBT-IOP with either substantial history or no history of emotional neglect, physical neglect, sexual abuse, and emotional abuse.

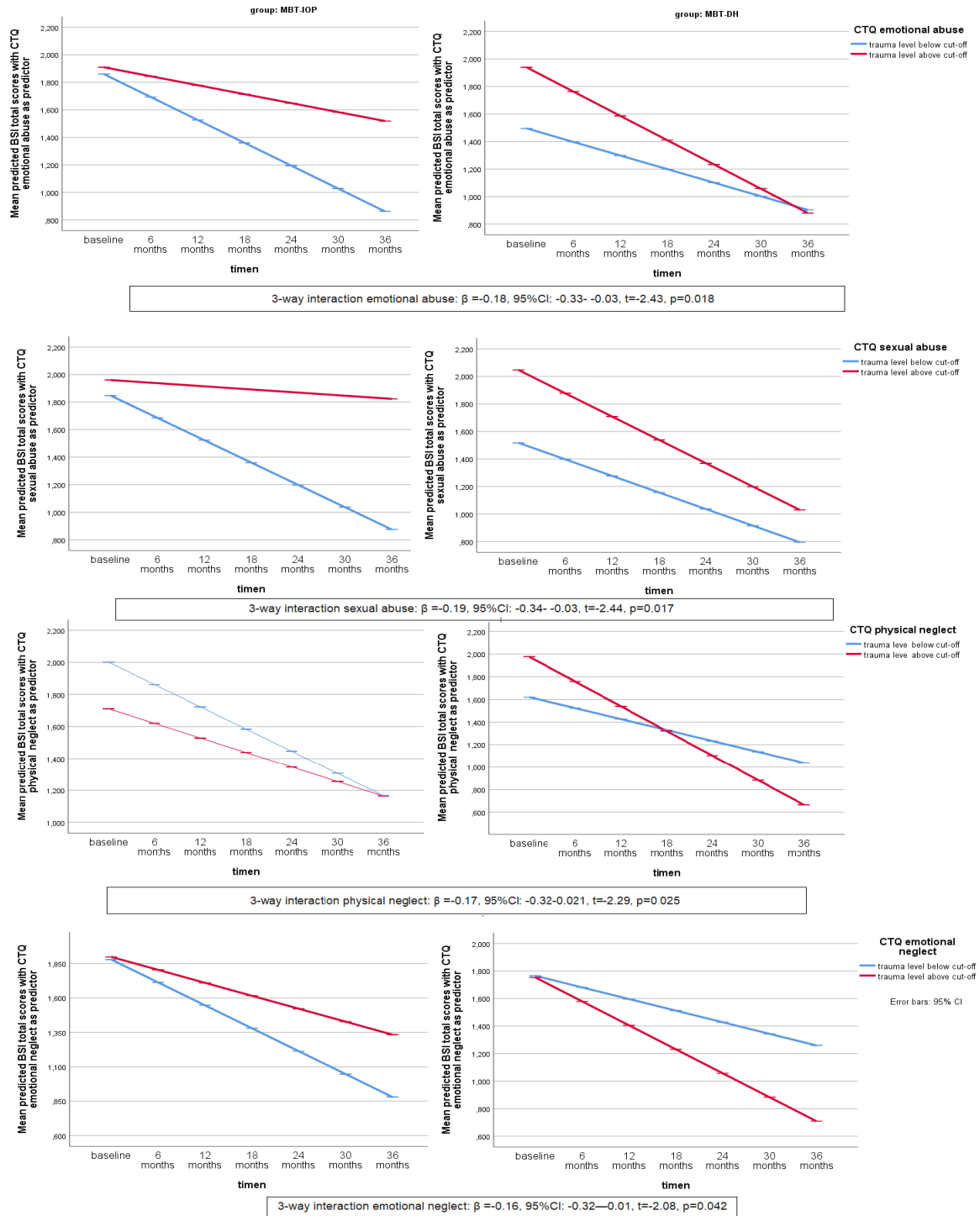


Figure 2. Slopes of improvement in borderline symptoms of patients in MBT-DH versus patients in MBT-IOP with either substantial history or no history of emotional neglect.

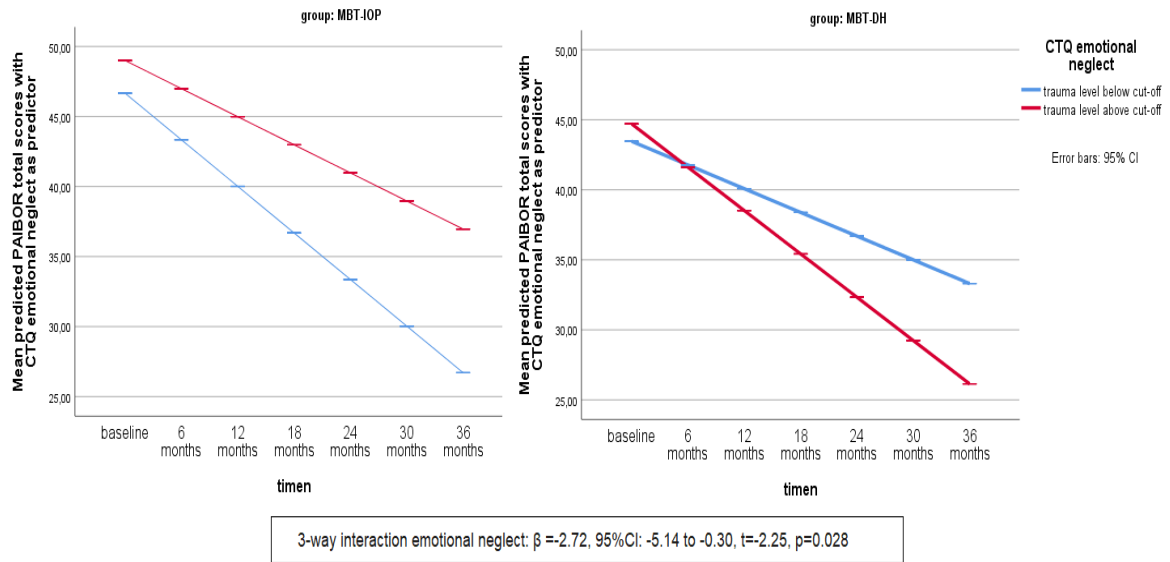


Figure 3. Slopes of improvement in interpersonal problems of patients in MBT-DH versus patients in MBT-IOP with either substantial history or no history of trauma in terms of physical abuse.

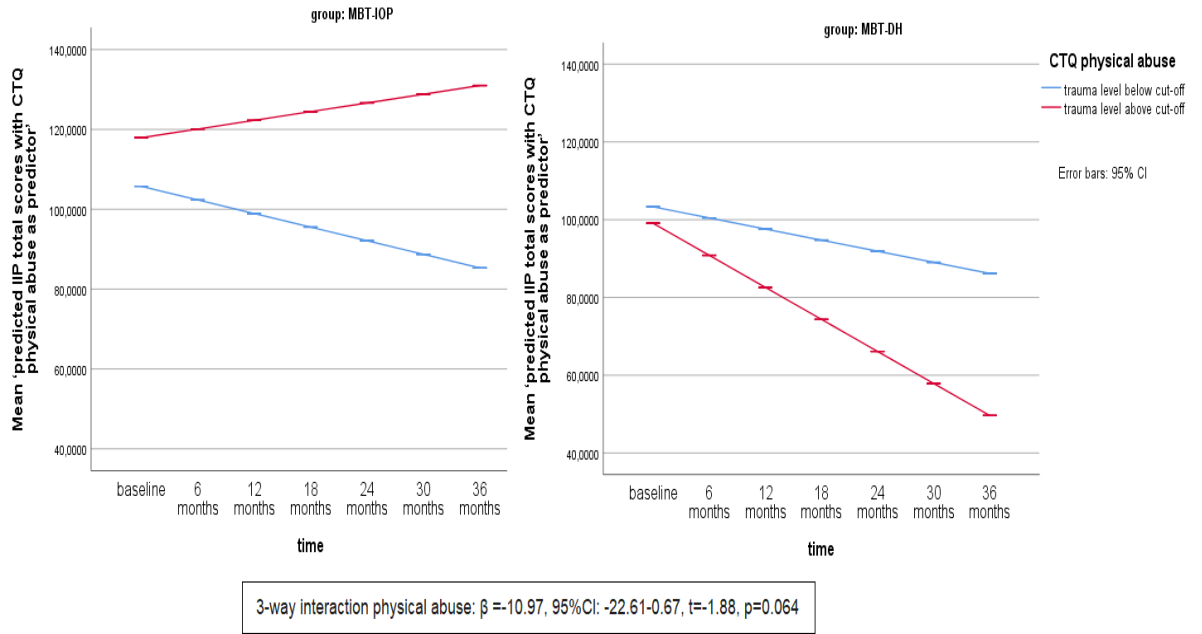


Table 1. Prevalence of childhood trauma among patients in MBT-Day Hospitalization (MBT-DH) and Intensive Outpatient MBT (MBT-IOP)

Childhood Trauma Questionnaire	Total Group (n=83)				MBT-IOP (n=34)				MBT-DH (n=49)				$\chi^2$ *	
	M	SD	Above cut-off		M	SD	Above cut-off		M	SD	Above cut-off			p
			n	%			n	%			n	%		
Physical abuse	7.60	4.521	18	22	7.00	3.618	6	18	8.02	5.048	12	25	.457	
Physical neglect	8.95	3.111	31	37	9.18	3.424	13	38	8.80	2.901	18	37	.889	
Sexual abuse	8.76	5.450	33	40	8.00	4.824	11	32	9.29	5.835	22	45	.251	
Emotional abuse	14.87	5.483	47	57	13.88	5.044	18	53	15.55	5.719	29	59	.573	
Emotional neglect	16.00	4.971	55	66	15.32	4.804	22	65	16.47	5.079	33	67	.802	
CTQ total score	56.18	17.084			53.38	15.727			58.12	17.865				
	Total Group (n=83)				MBT-IOP (n=34)				MBT-DH (n=49)					
At least 1 trauma category above cut-off			71	86			29	85			42	86	.957	
Number of trauma categories above cut-off													.581	
0			12	15			5	14.7			7	14		
1			19	23			8	23.5			11	22		
2			18	22			8	23.5			10	20		
3			14	17			8	23.5			6	12		
4			13	16			3	8.8			10	20		
5			7	8			2	5.9			5	10		

Table 2. Summary of p-values related to interaction effects of CTQ subscales as predictor of treatment outcome overall and between MBT-IOP and MBT-DH.

Type of childhood trauma	Symptom Distress (BSI)		Interpersonal Problems (IIP)		Borderline Symptomatology (PAI-BOR)	
	predictor×time	predictor×time×group	predictor×time	predictor×time×group	predictor×time	predictor×time×group
Physical abuse	.233	.062	.244	.064	.109	.140
Physical neglect	.449	.025*	.916	.690	.785	.569
Sexual abuse	.139	.017*	.225	.130	.985	.651
Emotional abuse	.149	.019*	.097	.110	.298	.174
Emotional neglect	.044*	.042*	.323	.396	.158	.028*