Memory of Childhood Trauma before and after Long-term Psychological Treatment of Borderline Personality Disorder

The present study investigated the consistency of self-reports of childhood traumatic events in a sample of 50 patients with a borderline personality disorder (BPD) before and after 27 months of intensive treatment with schema focused therapy or transference focused psychotherapy. The mean number of reported sexual, physical and emotional traumatic events did not change following treatment. Test-retest correlations of the trauma-interview also indicated high stability of the total number of sexual, physical and emotional events reported. The majority of the patients, however, did no longer report at least one of the 33 listed events after psychotherapy, and the majority reported at least one event that they had not mentioned before the start of treatment. These findings were not related to type of treatment or changes in suppression, intrusions, avoidance of intrusions, dissociative symptoms, depressive symptoms, and borderline symptoms.

Journal of Behavior Therapy and Experimental Psychiatry 38, 1-10.
Introduction

Autobiographical memories are compilations, constructions or compositions of knowledge (Bartlett, 1932). In this reconstructive process, many opportunities arise for bias, error, distortion, and forgetting (Conway, 1997). Memories can become inaccessible for some period of time, and may be recalled later given appropriate cues. However, false memories of childhood abuse, among individuals who were not abused, are also possible (for a review see Lindsay & Read, 1994).

Several studies have investigated the consistency of trauma reports outside the context of therapy (e.g., for a review see McNally, 2003a). Results on this issue are inconclusive. Some authors considered traumatic memories to be accurate and stable, while others found that memories changed dramatically over time (Van Giezen, Arensman, Spinhoven & Wolters, 2005). According to Fergusson, Horwood, and Woodward (2000) for example, memory reports of childhood abuse were relatively unstable over time. Over 50% of the subjects recalled traumatic events at one occasion and failed to report it at another one.

Few studies have examined the consistency of trauma reports before and after therapy. This is remarkable since recovered memories have often arisen in the context of treatment. Bernstein et al. (1994) found that reports of childhood abuse were stable over two to six months in a sample of substance dependent outpatients, who were treated for their dependency. Paivio (2001) concluded that in adult survivors of childhood abuse, reports of abuse remained stable between the start of therapy and six months later, whereas level of psychopathology was significantly reduced. Zoellner, Sacks, and Foa (2001) compared memory reports of female assault victims, with either acute or chronic PTSD symptoms at pre- and post-treatment. Victims having acute Posttraumatic Stress Disorder (PTSD) reported a decrease in memory of the index event, while victims with chronic PTSD reported an increase in memory of the index event. According to Foa, Molnar, and Cashman (1995) narratives of rape tended to become longer from pre- to post-treatment assessment. This increase in organization of the narratives was related with an improvement in depression after treatment.

There may be several reasons for changes in the number of reported traumatic experiences. Firstly, experiences that are less accessible (e.g., through dissociation, denial, or thought suppression) may become conscious later on (Melchert & Parker, 1997). Secondly, repeated reliving of traumatic memories during treatment may prime these memories for subsequent recall (Zoellner, et al., 2001). A third possible explanation is that individuals with psychiatric symptoms exaggerate their histories of traumatic experiences, as part of an attempt to explain their current symptoms (Southwick, Morgan, Nicolaou, & Charney, 1997). A fourth possibility is that individuals with frequent intrusive memories gradually recall memories of their trauma as a result of an involuntary re-experiencing of symptoms (Southwick et al., 1997).

In the present study, consistency of self-reports of childhood traumatic events was investigated in a sample of patients with BPD before and after 27 months of intensive psychotherapy. The effects of treatment modality, dissociation, suppression, intrusions, borderline symptoms, and depressive symptoms on memory consistency were also investigated. The study was embedded in a multi-center randomized treatment trial in which the effects of transference focused psychotherapy (TFP) and schema focused therapy (SFT) were studied (Giesen-Bloo et al., 2006). It was
hypothesized that because compared to TFP, SFT explicitly focuses on the exploration of traumatic events, which are supposed to underlie the formation of dysfunctional cognitive schemata (Young, 1994), a larger increase in reported trauma at 27 months was to be expected in the SFT than in the TFP condition. This increase was not expected for TFP with its primary focus on analyzing the present transference, while explicitly focusing on the past is contra-indicated (Yeomans, Clarkin, & Kernberg, 2002).

Method
Measures
Psychiatric diagnosis
Axis I and Axis II diagnoses were assessed at T 1 with the SCID-I (First, Spitzer, Gibbon, & Williams, 1997) and the SCID-II (First, Spitzer, Gibbon, & Williams, 1994).

Trauma interview
Participants were presented with a list of seven sexual events (e.g., incest), 13 physical events (e.g., beatings) and 13 emotional events (e.g., neglect) and were asked to indicate which of these events had ever happened to them before the age of 18 (adapted from Arntz, Dietzel, & Dreessen, 1999). The total number of listed events was 33. All events were read out by the interviewer and events that were reported by the participant were flagged without discussing them. Examples were: Did you have intercourse against your will?, Has anyone ever grabbed you by the throat?, Were you left on your own most of the time? In addition, participants were invited to mention events that were not on the list. After the whole list was filled out, all events were reviewed and participants were asked who the perpetrator(s) was (were), at what age the event(s) had happened, how often the events(s) had happened and how long the events had lasted. Sum scores were calculated for total events as well as for categories of events (sexual, physical, and emotional) by summing the number of reported events. Moreover, two change scores were calculated: 1) the number of changes from 'no' at T 1 to 'yes' at T 2 for sexual, physical and emotional abuse; 2) the number of reverse changes.

Borderline Personality Disorder Severity Index (BPDSI)
The BPDSI (Arntz et al., 2003) is a semi-structured interview that assesses the frequency and severity of manifestations of BPD during the last three months.

Beck Depression Inventory (BDI)
The BDI (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) measures the severity of depressive symptoms during the past week.

Dissociative Experiences Scale (DES)
The DES (Carlson & Putnam, 1993) measures the proneness to experience dissociative phenomena.

White Bear Suppression Inventory (WBSI)
The WBSI (Wegner & Zanakos, 1994) measures the tendency to suppress negative and unwanted thoughts.

**Impact of Event Scale (IES)**

The IES (Horowitz, Wilner, & Alvarez, 1979) assesses signs and symptoms of avoidance and intrusion after traumatic life events.

**Procedure and design**

The study was approved by the Institutional Review Boards of the participating centers (Giesen-Bloo et al., 2006). After a complete description of the study, written informed consent was obtained from all participants. The tests were presented in a fixed order: BPDSI, trauma interview, IES, BDI, DES, and WBSI. These tests were administered at the start of therapy and 27 months later by the same interviewer.

**Therapy and therapists**

Treatment sessions were twice weekly. Therapists received intensive training from experts. Treatment integrity was assured by participation of the therapists in a pilot study, and by weekly local supervision and twice a year inter-center supervision.

**Results**

**Participants**

Eligible participants were outpatients with BPD who participated in a multi center treatment trial (see also Giesen-Bloo et al., 2006). Before treatment (T 1) 84 patients were tested; half of whom had been assigned to TFP and the other half to SFT. At T 2 (27 months after start of treatment) 50 patients were still in treatment (21 TFP, 29 SFT). The remaining 34 patients had either prematurely terminated or completed treatment. The mean age of the 50 patients (45 females) who were still in treatment after 27 months was 31.1 years (SD 8.4) at the start of therapy. Most patients had comorbid Axis I or Axis II diagnoses. The most frequent were: depressive disorder (31 patients), posttraumatic stress disorder (19 patients), social phobia (16 patients), avoidant personality disorder (17 patients), depressive personality disorder (12 patients), and paranoid personality disorder (12 patients).

Mean sum scores on the DES, WBSI, BDI, BPDSI, and IES at both measurements are shown in Table 1. Paired t-tests were used to analyze the differences in mean sum scores. A Bonferroni correction was applied to reduce chance capitalization and so all effects were reported at a 0.01 level of significance. Scores on the WBSI, BDI, BPDSI, and IES intrusion subscale were significantly lower at T 2. Scores on the DES and IES avoidance did not differ significantly between T 1 and T 2.

**Table 1** Mean sum scores on the DES, WBSI, BDI, BPDSI, and IES before start of treatment and after 27 months of 50 BPD patients still in treatment

<table>
<thead>
<tr>
<th>Test</th>
<th>Time 1</th>
<th>Time 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>DES</td>
<td>18.6 (14.4)</td>
<td>14.1 (12.3)</td>
</tr>
<tr>
<td>WBSI</td>
<td>60.0 (9.9)</td>
<td>52.4 (14.3)*</td>
</tr>
</tbody>
</table>
Multivariate analyses of variance showed no significant differences on DES, WBSI, BDI, BPDSI, or IES at T 1 between the 50 patients who were still in therapy and the 34 patients who prematurely terminated or completed therapy, suggesting that no selection bias took place with respect to these measures. T-tests did show significant differences in the number of reported traumatic events at baseline between the 50 patients who were still in treatment \( (M = 11.2, SD = 7.1) \) and the 30 patients (the trauma interview was not administered in four patients) who prematurely terminated or completed treatment \( (M = 15.2, SD = 7.1) \), \( t(79) = 2.06, p < .05 \), suggesting that a selection bias with respect to self-reported traumatization took place.

**Consistency of traumatic events**

Three patients were unable to complete the trauma interview at both measurements. Since very few events were reported that were not on the list, these were not further analyzed. Mean sum scores on the trauma interview at both measurements and test-retest correlations are shown in Table 2.

<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th>Time 2</th>
<th>Test-retest correlations (r)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trauma total</td>
<td>11.2 (7.1)</td>
<td>11.5 (6.9)</td>
<td>.89*</td>
</tr>
<tr>
<td>Sexual trauma</td>
<td>2.1 (2.3)</td>
<td>2.1 (2.2)</td>
<td>.87*</td>
</tr>
<tr>
<td>Physical trauma</td>
<td>4.0 (3.3)</td>
<td>3.6 (3.4)</td>
<td>.82*</td>
</tr>
<tr>
<td>Emotional trauma</td>
<td>5.6 (3.4)</td>
<td>5.8 (3.5)</td>
<td>.79*</td>
</tr>
</tbody>
</table>

*Note. N = 50; drop-outs and early completers were not assessed at Time 2. Standard deviations in parentheses.

Mean sum scores on the trauma interview did not change significantly from T 1 to T 2, \( t(44) = -0.59; p = .56 \). This was also true for the subscales: sexual abuse \( (t [44] = .00; p = 1.00) \), physical abuse \( (t [45] = -1.48; p = .15) \), and emotional abuse \( (t [46] = .77; p = .45) \). Pearson’s correlation coefficient between the number of reported traumatic events before treatment and 27 months later was \( r = .89 \) (p < .001), suggesting little variation over time. This was also true for the subscales (see Table 2). However, only one patient did not change the response to any of the 33 traumatic events included in the interview. All other patients changed their responses to at least one of the events at 27 months, with a maximum of 11 changes (one patient). Of these patients, 80% recalled at least one event at T 2.
that they had not reported at T 1. On the other hand, 83% did not report an event at T 2 that had been reported at T 1. Table 3 shows how these changes varied upon type of abuse. Friedman's ANOVA was applied to test the differences between the percentages. Percentages of change scores from No to Yes differed significantly ($\chi^2(2) = 10.19, p < .01$) between the types of abuse. Wilcoxon tests were used to follow up this finding. A Bonferroni correction was applied and so all effects are reported at a .0167 level of significance. It appeared that the percentage of changes from No to Yes on sexual trauma were significantly lower than the percentages of changes on emotional trauma ($T = 144, p < .01$). No differences were found between sexual and physical trauma or between physical and emotional trauma. Percentages of change scores from Yes to No also differed significantly ($\chi^2(2) = 11.05, p < .01$). Wilcoxon tests showed that the percentage of changes from Yes to No on sexual trauma were significantly lower than the percentages of changes on physical trauma ($T = 83, p < .01$). No differences were found between sexual and emotional trauma or between physical and emotional trauma.

Table 3  Mean percentages of change scores on the trauma interview of 50 BPD patients still in treatment

<table>
<thead>
<tr>
<th></th>
<th>Changes from No to Yes</th>
<th>Changes from Yes to No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexual trauma</td>
<td>5.3 (11.6)</td>
<td>4.7 (10.3)</td>
</tr>
<tr>
<td>Physical trauma</td>
<td>6.1 (8.2)</td>
<td>9.0 (10.9)</td>
</tr>
<tr>
<td>Emotional trauma</td>
<td>9.8 (10.3)</td>
<td>7.9 (11.6)</td>
</tr>
<tr>
<td>Any trauma</td>
<td>6.7 (5.6)</td>
<td>7.6 (6.5)</td>
</tr>
</tbody>
</table>

Note. Standard deviations in parentheses.

The mean number of changes from “no” at T 1 to “yes” at T 2 for sexual, physical, and emotional abuse together was 2.2 (SD 1.8). The mean number of reverse changes was 2.5 (SD 2.1). For instance, at T 1 one patient reported that she did not receive warmth or love from her parents and did not report that particular “event” at T 2. Instead, she reported to have been punished cruelly or unjustly.

Correlates of number of changes on trauma interview

To investigate a possible differential effect of TFP and SFT on mean number of changes on the trauma interview, independent t-tests were performed. There were no significant differences (see Table 4). Partial correlations were used to test the association between trauma change scores (both No to Yes and Yes to No) and thought suppression, intrusions, avoidance of intrusions, borderline symptoms, dissociative symptoms, and depressive symptoms at T 2 (partialling out the T 1 symptom severity). All correlations were non-significant and lower than 0.15.

Table 4  Mean number of changes on trauma interview and standard
deviations for TFP and SFT between T 1 and T 2 of 50 BPD patients still in treatment

<table>
<thead>
<tr>
<th></th>
<th>TFP</th>
<th>SFT</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changes from No to Yes</td>
<td>2.5 (2.0)</td>
<td>2.0 (1.7)</td>
<td>t (44) = -.79; p = .43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changes from Yes to No</td>
<td>2.5 (2.3)</td>
<td>2.5 (2.0)</td>
<td>t (45) = .10; p = .92</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. TFP = Transference Focused Psychotherapy; SFT = Schema Focused Therapy.

Discussion

The present study investigated the consistency of reports of childhood traumatic events in BPD before and after 27 months of intensive psychotherapy. We were interested in the consistency of trauma reports; accuracy was not assessed because no objective reports of what had happened could be obtained. The total number of reported sexual, physical, and emotional traumatic events during childhood remained stable over time, which is comparable to the findings reported by Paivio (2001) after six months of trauma therapy. However, there were many changes in the particular events that were reported. Most of the patients reported changes from Yes to No or from No to Yes, and these changes added up to zero. Unfortunately, Paivio only focused on mean number of reported traumatic events, so it is not known whether the shift in reported events was also present in her study (cf. Bernstein et al., 1994). As to the findings in relation to Yes to No or No to Yes changes, our findings are dissimilar to the outcomes of a study by Ouimette, Read, and Brown (2005). They studied consistency of reports of traumatic stressors in substance use disorder patients. Two of the seven categories of traumatic events used by Ouimette and colleagues were comparable to the ones that were used in the present study. These were physical abuse or assault and sexual abuse or assault. Overall, the percentages of changes from Yes to No as well as from No to Yes appeared to be somewhat lower in the present study. The Yes to No changes in Ouimette’s study were 12% versus 9% for physical trauma in the present study and 8% versus 4.7 % for sexual trauma. The No to Yes changes in Ouimette’s study were 16% versus 6.1% for physical trauma in the present study and 12% versus 5.3% for sexual trauma. Besides differences in study population, these differences in percentages may result from the fact that in the present study very specific events were presented, whereas in Ouimette’s study only one general question for each category of events (i.e. physical abuse or assault) was used.

One possible explanation for the changes in reported events is the existence of a general event schema in patients who have been repeatedly abused, as often is the case in patients with BPD. A person who has been abused repeatedly may have difficulty remembering the details of particular episodes of abuse, because similar events tend to merge into a general event schema (Linton, 1975). Indeed, some survivors of sexual abuse report vague memories of the abuse, which could reflect the way in which different experiences of the same type of event begin to be merged and confused over time (Harvey & Herman, 1994). The present findings may be due to patients remembering one event from a particular schema at T 1 and another event from the same schema at T 2. Another possibility is
that patients had a general level of severity of traumatization in mind corresponding with a certain number of events. This could explain why the number of reported events was stable, despite the shifts in the particular events.

There is no reason to assume that these results are peculiar to memories of traumatic events. Single exposure to an event is more likely to be remembered (e.g., Wagenaar, 1986). Once-salient events become less memorable when more and more similar events are experienced (Linton, 1975). Participants may lose access to specific event memories although retaining more generic personal memories containing the gist of events or a schema of the events (Bartlett, 1932). Most of the separate occasions are forgotten and only the more invariant properties of the event are retained.

In accordance with this view, no evidence was found that psychotherapy resulted in memory amplification for childhood trauma. After 27 months of intensive psychotherapy patients reported the same number of sexual, physical, or emotional traumatic events irrespective of treatment modality. Although one of the treatment modalities, i.e. schema focused therapy, explicitly addressed childhood traumata, no evidence was found that this kind of therapy resulted in a higher number of reported childhood traumata than a treatment in which exploring childhood traumata is contra-indicated, i.e. transference focused psychotherapy. Apparently, generic personal memories remained unchanged while the access to individual traumatic events fluctuated over time possibly due to reduced personal memory strength because of multiple trauma exposure.

Correlates of inconsistency were also investigated in the present study. Although levels of suppression were significantly reduced during treatment in the present study, this did not result in a significant increase in the number of reported events. Moreover, no evidence was found to support the idea that a reduction of intrusive memories is related to changes in autobiographical traumatic memories. Finally, a decrease of depressive or borderline symptoms was also not related to changes in number of reported traumatic events.

A limitation of the present study is that the validity of the trauma interview is yet unknown, so the results have to be interpreted with caution. As many factors may impair the accuracy of memories of past events, problems in encoding, storage, retrieval, or reconstruction all can cause inaccuracies (e.g., Tourangeau, 2000). Especially in the case of childhood experiences, individuals may be prone to distort reports (Lindsay & Read, 1994). According to Brewin, Andrews, and Gotlib (1993) however, there is little reason to link psychiatric status with less reliable recall of childhood experiences, suggesting that patients with BPD do not have a higher chance of inaccuracies. Moreover, this study did not address the accuracy of self-reported traumatic events, but the consistency of self-reports of traumatic events following treatment. Secondly, it would have been worthwhile to follow-up the patients who dropped out of the study, because these patients had reported more traumatic events before treatment. Another problem concerns the fact that consistency of memory is often not defined and measured in a standard way across all studies, thus limiting a comparison of the findings. Finally, the absence of a control group is a limitation. Inclusion of different control groups or a control event would have made it possible to study the effect of treatment itself and for instance the stability of non-traumatic neutral or positive memories.
In conclusion, the present study showed that the mean number of reported sexual, physical and emotional traumatic childhood memories before and after long-term intensive psychotherapy of BPD was stable, but the majority of the patients did no longer report at least one of the 33 listed events after psychotherapy, and the majority reported at least one event that they had not mentioned before the start of treatment. The inconsistencies were not related to type of treatment or changes in suppression, intrusions, dissociation, depressive symptoms, and borderline symptoms.