Behaviour Research and Therapy 61 (2014) 136–141

Contents lists available at ScienceDirect

Behaviour Research and Therapy

journal homepage: www.elsevier.com/locate/brat

Shorter communication

Non-suicidal self-injury during an exposure-based treatment in patients with posttraumatic stress disorder and borderline features

Antje Krüger [a, b, *], Nikolaus Kleindienst [a], Kathlen Priebe [a], Anne S. Dyer [c], Regina Steil [d], Christian Schmahl [a], Martin Bohus [a]

[a] Department of Psychosomatic Medicine and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Germany
[b] Department of Psychology and Sports Sciences, Institute of Psychology, University of Münster, Germany
[c] Department of Psychology and Psychotherapy, School of Social Science, University of Mannheim, Germany
[d] Department of Psychology and Sports Sciences, Institute of Psychology, Johann Wolfgang Goethe University, Frankfurt am Main, Germany

ARTICLE INFO

Article history:
Received 4 March 2014
Received in revised form
6 August 2014
Accepted 11 August 2014
Available online 20 August 2014

Keywords:
Non-suicidal self-injury
Exposure-based treatment
Posttraumatic stress disorder
Dialectical behavioural therapy

ABSTRACT

Patients with posttraumatic stress disorder (PTSD) and features of borderline personality disorder (BPD) often show non-suicidal self-injury (NSSI). However, patients with on-going NSSI are mostly excluded from PTSD treatments and NSSI during PTSD treatment has rarely been investigated. The aim of the present study was to evaluate the course of NSSI during an exposure-based PTSD treatment.

This study focused on a subset ($n = 34$) of data from a randomised controlled trial that tested the efficacy of a residential PTSD programme (DBT-PTSD) in comparison to a treatment-as-usual wait-list. In this subset we compared a) NSSI during treatment between participants who had or had not engaged in NSSI pre-treatment and b) NSSI between treatment weeks that included exposure interventions vs. those that did not. We further compared the outcome between participants with vs. without NSSI at pre-treatment.

At pre-treatment, 62% participants reported on-going NSSI. During treatment, the percentage of participants carrying out NSSI decreased to 38% ($p = 0.003$). The rates of NSSI were similar in treatment weeks with exposure compared to weeks without. Similar results were observed for the frequency of NSSI. At the end of treatment, participants showed comparable improvement in PTSD symptoms regardless of whether or not they had exhibited NSSI beforehand.

Introduction

Non-suicidal self-injury (NSSI) is defined as the direct and deliberate destruction of one's own body tissue in the absence of suicidal intent (Nock & Favazza, 2009). Common forms of NSSI are cutting, severely scratching, or burning the skin, banging, or hitting; often, more than one means is employed (Kleindienst et al., 2008). In adult non-clinical samples, the lifetime prevalence of engaging in NSSI has been reported to be 4–6% (Klonsky, 2011; Klonsky, Oltmanns, & Turkheimer, 2003), while in clinical samples, the prevalence is 19–25% (Briere & Gil, 1998). NSSI is most frequently performed as an emotion regulation strategy with the aim of finding relief from aversive emotional arousal, numbness, or dissociative symptoms (Klonsky, 2009).

NSSI is often seen in individuals with borderline personality disorder (BPD), BPD features (Skodol et al., 2002) or posttraumatic stress disorder (PTSD) (Gratz & Tull, 2012). Patients with a history of childhood sexual abuse (CSA) have an increased risk of developing BPD, with an odds ratio of 7.6 (Cutajar et al., 2010). Patients with PTSD that is attributable to CSA have high rates of NSSI (Weierich & Nock, 2008).

For both BPD and PTSD, effective treatment programmes do exist. Dialectical behaviour therapy (DBT) has been proven to be highly effective for BPD (Stoffers et al., 2012), while trauma-focused cognitive-behavioural therapies have been shown to be highly effective for PTSD and are recommended as first-line treatments (National Collaborating Centre for Mental Health, 2005; Watts et al., 2013). Medium to large effect sizes have been reported for patients with PTSD after CSA (Taylor & Harvey, 2010). However, for individuals with both PTSD after CSA and BPD features, neither of

* Corresponding author. Department of Psychosomatic Medicine and Psychotherapy, Central Institute of Mental Health, J 5, 68159 Mannheim, Germany. Tel.: +49 2 51 83 34 13 2; fax: +49 2 51 83 31 33 1.
E-mail address: antje.krueger@uni-muenster.de (A. Krüger).

http://dx.doi.org/10.1016/j.brat.2014.08.003
0005-7967/

these treatments show sufficient empirical evidence, as PTSD patients with co-occurring BPD symptoms such as NSSI, severe dissociation or suicidality are often excluded from treatment studies (Bradley, Greene, Russ, Dutra, & Westen, 2005). Additionally, subgroup analyses of participants with NSSI are usually not reported.

DBT focuses on dysfunctional behaviour patterns including NSSI and suicidality (Linehan, 1993). Reducing posttraumatic stress is supposed to be a treatment target only once previous targets are under control, and thus should take place in the second phase of therapy. This implies that patients must usually undergo many months of standard DBT before PTSD treatment can start. These rules are based on clinical experience and on the assumption that dysfunctional behaviour such as self-harm might increase under the emotional distress triggered by exposure to traumatic memories. Therefore, it seems reasonable that many clinical trials on PTSD treatments have excluded patients with on-going suicidal ideation and/or NSSI due to safety reasons (Bradley et al., 2005). This practice is in line with a substantial number of therapists who question the safety of exposure elements for PTSD patients and report a reluctance to use these interventions (Becker, Zayfert, & Anderson, 2004; Cahill, Foa, Hembree, Marshall, & Nacash, 2006).

However, this leads to the problem that a large proportion of PTSD patients with on-going NSSI are not receiving appropriate PTSD treatment. Such patients usually find themselves in a vicious circle of intrusive traumatic memories, highly aversive emotions, a lack of emotion regulation strategies, and dysfunctional behavioural strategies which are highly effective in reducing stress in the short run (Reitz et al., 2012). Standard DBT is able to teach such patients stress-tolerance skills and emotion regulation strategies, which leads to a reduction of NSSI and suicidality but not to a sufficient reduction in PTSD symptoms (Harned et al., 2008; Linehan, Comtois, Murray, et al., 2006). Early promising data suggest a combination of DBT and trauma-focused interventions as an effective treatment approach for patients suffering from co-morbid PTSD and BPD features (Bohus et al., 2013; Harned, Korslund, Foa, & Linehan, 2012; Harned, Korslund, & Linehan, 2014).

Despite the high prevalence of NSSI in PTSD, the occurrence and course of dysfunctional behaviours such as NSSI during PTSD treatment has rarely been investigated. To the authors' knowledge, only two studies, both by Harned and colleagues, have assessed the efficacy and safety of exposure-based PTSD treatment in patients with PTSD and BPD and recent suicidal or serious NSSI behaviour (Harned et al., 2012, 2014).

In the first study (Harned et al., 2012), all participants ($N = 13$) received one year of standard DBT. The prolonged exposure protocol was implemented during this year only if all the following criteria were met: no current risk of suicide, no suicide attempts or NSSI in the past two months, the ability to control life-threatening behaviours, no serious therapy-interfering behaviour, the patient's first priority target had to be PTSD, and the patient had to be able and willing to experience intense emotions without escaping. Ten participants started the exposure phase on average at Week 18.5. During this phase, two (20%) participants engaged in NSSI, and one of these individuals also made a suicide attempt. PTSD symptom reduction was significant in the post- and follow-up assessments, and revealed large effect sizes.

In the second study (Harned et al., 2014) participants ($N = 26$) were randomly assigned to DBT either with or without a prolonged exposure (PE) component. The criteria for starting PE were the same as those used in the earlier trial. Only six participants (35%) in the DBT + PE condition completed the treatment. Of these six participants, two (33.3%) had a relapse in intentional self-injury (one suicide attempt, one NSSI event). PTSD symptoms decreased in both conditions, with large effect sizes. Significantly higher improvement was observed in the DBT + PE condition than in the DBT-alone condition.

To examine the efficacy of a DBT treatment designed specifically for patients with CSA-related PTSD and co-morbid BPD features, we conducted a RCT that tested the efficacy of a 12-week modularised DBT programme for PTSD patients who also met at least 4 of the 9 DSM-IV BPD criteria or had certain other diagnoses. The results of this trial are reported elsewhere (Bohus et al., 2013). This programme, titled DBT-PTSD, is a multi-component trauma-focused treatment that combines PTSD-specific interventions with DBT strategies (Steil, Dyer, Priebe, Kleindienst, & Bohus, 2011) with the reduction of PTSD symptoms as one of its main treatment goals. It was conducted as a 12 weeks residential treatment with 2 weekly individual sessions and different group interventions, e.g. DBT skills-training. The DBT-PTSD programme is based on a dynamic treatment hierarchy and contains three treatment phases. In the first phase (three weeks), participants learn to identify their individual avoidance strategies (e.g., NSSI or other non-life-threatening dysfunctional behaviours, emotions, or cognitions) and to use specific DBT skills to control these behaviours. The second phase contains trauma-focused interventions, and aims at reducing PTSD symptoms. Trauma focused interventions include cognitive interventions and in sensu exposure of the currently most distressing traumatic event. During this phase patients are encouraged to listen daily to the related tape. If participants engage in NSSI, trauma-focused interventions are shortly interrupted and a micro-behavioural analysis is conducted with the goal of finding better strategies to control the dysfunctional behaviour. The third phase focuses on interventions to radically accept the traumatic events.

For safety reasons, as well as due to the lack of empirical data at the time the study was planned, the programme was conducted under residential conditions. As reported in the main publication on this study (Bohus et al., 2013), we found a significant symptom reduction in the treatment group in comparison to the treatment-as-usual wait list (TAU-WL) group with large between-group effect sizes.

The present article presents an evaluation of a subset of the data from this RCT that looks specifically at the relationship between NSSI and exposure interventions. The following research questions were investigated: 1) would the actual occurrence of NSSI events and the urge to commit NSSI increase during exposure-based treatment; and if yes, would these increases differ between participants who had engaged in NSSI at pre-treatment and those who had not? 2) Would participants who had engaged in NSSI pre-treatment and those who had not differ in PTSD symptomatology at post-treatment?

Methods

Participants

Participants in the RCT were females who ranged in age from 17 to 65 years. Inclusion criteria were a DSM-IV diagnosis of CSA-related PTSD and at least one of the following additional diagnoses: eating disorder, current major depression, current substance abuse, or meeting $\geq$4 DSM-IV criteria for BPD. The latter inclusion criterion was defined to increase variance in order to study the impact of the number of BPD criteria on treatment outcome in the initial study (Bohus et al., 2013). We followed the recommendation of Skodol et al. (2002) who call a cluster of 4 BPD criteria “borderline features”.

Exclusion criteria were a lifetime diagnosis of schizophrenia, current substance dependence, body mass index <16.5, intellectual disability, medical conditions contradicting the exposure protocol (e.g., severe cardiovascular disorder), and a life-threatening suicide attempt within the last 4 months.