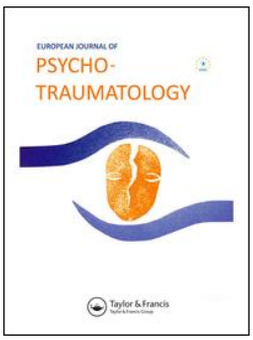

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CLINICAL RESEARCH ARTICLE

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Trauma-focused treatment outcome for complex PTSD patients: results of an intensive treatment programme

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ABSTRACT

Background: Complex PTSD (CPTSD) has been incorporated in the 11th edition of the *International Classification of Diseases* (ICD-11) as a mental health condition distinct from PTSD.

Objective: The objective of the current study is to determine whether individuals classified as having CPTSD can benefit from an intensive trauma-focused treatment, resulting in decreased PTSD and CPTSD symptoms, and loss of diagnoses.

Method: Patients diagnosed with PTSD (N = 308) took part in an intensive 8-day treatment programme combining prolonged exposure, EMDR therapy, psycho-education, and physical activity. The treatment was not phase-based in that it did not contain a stabilization phase or skill training prior to therapy. CPTSD diagnosis was assessed by means of the International Trauma Questionnaire (ITQ) and PTSD diagnosis was assessed with both the ITQ and CAPS-5. Treatment response was measured with the CAPS-5, PCL-5, and ITQ.

Results: Symptoms of both PTSD and CPTSD significantly decreased from pre- to post-treatment resulting in a significant loss of CAPS-5 based PTSD (74.0%) and ITQ-based PTSD and CPTSD diagnoses (85.0% and 87.7%, respectively). No adverse events occurred in terms of suicides, suicide attempts, or hospital admissions.

Conclusions: The results are supportive of the notion that the majority of patients classified as having CPTSD strongly benefit from an intensive trauma-focused treatment for their PTSD.

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KEYWORDS

Complex PTSD; post-traumatic stress disorder; intensive trauma-focused treatment; treatment outcome; ITQ

PALABRAS CLAVE

TEPT complejo; Trastorno de estrés postraumático; tratamiento intensivo centrado; en el trauma; resultado del tratamiento; ITQ

关键词

复杂性PTSD; 创伤后应激障碍; 聚焦创伤强化治疗; 治疗结果; ITQ

HIGHLIGHTS

- The majority, over 85%, of the patients diagnosed with Complex PTSD lost their diagnosis after 8 days of intensive trauma-focused treatment.
- Complex PTSD patients can benefit from trauma-focused treatment and should not be excluded.

Resultado del tratamiento centrado en el trauma para pacientes con TEPT complejo: resultados de un programa de tratamiento intensivo

Antecedentes: El TEPT complejo (TEPT-C) se ha incorporado en la 11ª edición de la *Clasificación Internacional de Enfermedades* (CIE-11) como una condición de salud mental distinta del TEPT.

Objetivo: El objetivo del presente estudio es determinar si las personas clasificadas como con TEPT-C pueden beneficiarse de un tratamiento intensivo centrado en el trauma, lo que resulta en una disminución de los síntomas de TEPT y TEPT-C y la pérdida de diagnóstico de TEPT.

Método: Los pacientes diagnosticados con TEPT (N = 308) participaron en un programa de tratamiento intensivo de 8 días que combina exposición prolongada, terapia EMDR, psicoeducación y actividad física. El tratamiento no se dividió en fases, ya que no contenía una fase de estabilización o entrenamiento de habilidades antes de la terapia. El diagnóstico de TEPT-C se evaluó mediante el Cuestionario Internacional de Trauma (ITQ por sus siglas en ingles) y el diagnóstico de TEPT se evaluó tanto con el ITQ como con CAPS-5. La respuesta al tratamiento se midió con CAPS-5, PCL-5 e ITQ.

Resultados: los síntomas de TEPT y TEPT-C disminuyeron significativamente del pretratamiento al postratamiento, lo que resultó en una pérdida significativa del diagnóstico de TEPT basado en CAPS-5 (74.0%) y diagnósticos de TEPT y TEPT-C basados en ITQ (85.0 y 87.7%, respectivamente). No se produjeron eventos adversos en términos de suicidios, intentos de suicidio o ingresos hospitalarios.

Conclusiones: Los resultados apoyan la noción de que la mayoría de los pacientes clasificados con TEPT-C se benefician significativamente de un tratamiento intensivo centrado en el trauma para su TEPT.

聚焦创伤疗法对于复杂性PTSD患者的治疗结果:强化治疗方案的结果

背景：复杂性PTSD (CPTSD) 已作为不同于PTSD的精神健康疾病, 被纳入《国际疾病分类》第十一次修订版 (ICD-11) 。

目的：本研究旨在确定被归类为患有CPTSD的个体是否可以从聚焦创伤强化治疗中受益, 从而减轻PTSD和CPTSD症状, 且不再符合诊断。

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方法：308名被诊断患有PTSD的患者参加了一项结合延长暴露疗法，EMDR治疗，心理教育和体育锻炼的8天强化治疗方案。由于治疗前不含稳定阶段或技能培训，该治疗不是分阶段的。CPTSD诊断由《国际创伤问卷》(ITQ)评估，PTSD诊断使用ITQ和CAPS-5评估。治疗反应使用CAPS-5, PCL-5和ITQ测量。
结果：从治疗前到治疗后，PTSD和CPTSD症状均显著下降，导致CAPS-5的PTSD诊断(74.0%)以及ITQ的PTSD和CPTSD诊断(分别为85.0和87.7%)的显著减少。在自杀，自杀未遂或住院方面均未发生不良事件。
结论：本结果支持以下观点，即大多数被归类为CPTSD的患者都从针对PTSD的聚焦创伤强化治疗中受益匪浅。

1. Introduction

Complex post-traumatic stress disorder (CPTSD) has been proposed as sibling disorder to post-traumatic stress disorder (PTSD) and incorporated as a separate classification within the 11th edition of the *International Classification of Diseases* (ICD-11) (Maercker et al., 2013; World Health Organization, 2018). Individuals with CPTSD are described as fulfiling the diagnostic criteria for PTSD in combination with suffering from additional disturbances in self-organization (DSO), more specific problems in affect regulation, interpersonal relations, and a negative self-concept (Cloitre et al., 2012; Maercker et al., 2013).

Incorporating CPTSD as a formal syndrome or mental disorder is thought to increase the specificity of the PTSD diagnosis and to reduce overlap with other related conditions (Brewin et al., 2017), which is supported by latent class or profile analyses in various samples (Cloitre, Garvert, Brewin, Bryant, & Maercker, 2013; Cloitre, Garvert, Weiss, Carlson, & Bryant, 2014; Folke, Nielsen, Andersen, Karatzias, & Karstoft, 2019). However, there is still debate about the internal consistency and validity of CPTSD. For example, it has been argued that the construct validity requires more evidence than can be provided by results from latent class and profile analyses alone (Achterhof, Huntjens, Meewisse, & Kiers, 2019; Ford, 2020; but see Cloitre et al., 2020). Arguments against incorporating CPTSD as a psychiatric diagnosis focus on the conflicting definitions of CPTSD (De Jongh et al., 2016; Resick et al., 2012), evidence regarding different symptom severities rather than distinct symptom sets (Wolf et al., 2015), and the absence of standardized measurement tools for the CPTSD diagnosis (De Jongh et al., 2016; Landy, Wagner, Brown-bowers, & Candice, 2015). However, recent attempts have been made to validate self-report measures to assess CPTSD (Hyland et al., 2017; Karatzias et al., 2017; Shevlin et al., 2018) of which the 12-item version of the International Trauma Questionnaire (ITQ) has been proven to be a valid measure to diagnose CPTSD based on the ICD-11 (Cloitre et al., 2018).

In 2012 the *International Society for Traumatic Stress Studies* (ISTSS) treatment guidelines on CPTSD (Cloitre et al., 2011, 2012) recommended a phase-based treatment of CPTSD which implements a stabilization phase before starting trauma-focused treatment, such as prolonged exposure and EMDR therapy. As a response to critical analyses and discussions in the field about these guidelines, the recommendations on this topic have been somewhat adapted, but according to the ISTSS Guidelines Committee, and based upon the principle of 'personalizing medicine', interventions aimed at stability and symptom management may still be needed (ISTSS Guidelines Committee, 2018).

So far, only two meta-analyses suggest that trauma-focused treatment, with or without phased interventions, could be effective for patients that show clinical significant symptoms associated with CPTSD (Karatzias et al., 2019; Mahoney, Karatzias, & Hutton, 2019). However, randomized controlled studies with head-to-head comparisons between phase-based and trauma-focused treatment in patients diagnosed with CPTSD are lacking and needed. To enhance our understanding about the efficacy of trauma-focused therapy for individuals with CPTSD, we investigated whether individuals diagnosed with CPTSD would benefit from an intensive trauma-focused treatment programme without a stabilization phase prior to treatment that has been found to be effective in reducing PTSD of patients who have been exposed to multiple adverse childhood events and suffer from multiple comorbidities (Van Woudenberg et al., 2018). As far as we are aware, we are the first to study treatment outcome of patients with CPTSD with the current established measure for CPTSD, the 12-item International Trauma Questionnaire (ITQ) (Cloitre et al., 2018). We hypothesized that symptoms of PTSD (as indexed by the CAPS-5 and PCL-5) and CPTSD (i.e., PTSD and DSO symptom severity as indexed by the ITQ) would significantly decrease during treatment, resulting in a loss of PTSD or CPTSD diagnoses. Because of earlier assumed difficulties and concerns about safety in treating CPTSD patients with trauma-focused therapies (Cloitre et al., 2012), we determined the safety of the trauma-focused treatment programme for this target group by recording the number of adverse events (suicide, suicide attempts, or hospital admissions) and the proportion of patients that displayed reliable symptom worsening in our sample.

2. Method

2. 1. Participants

Patients were regular referrals from the general practitioner, psychiatrist, or psychologist and treated from February till July 2019 at the Psychotrauma Expertise Centre (PSYTREC), a mental health-care centre in the Netherlands. Inclusion criteria were (1) a PTSD diagnosis as measured with the Clinician-Administered PTSD Scale for DSM-5 (CAPS-5), (2) being at least 18 years old, (3) having sufficient knowledge of the Dutch language to undergo treatment, and (4) did not attempt suicide in the past 3 months. A total of 409 patients were eligible for this research. Of these 409 patients, 52 patients did not give informed consent, 3 patients did not complete treatment and 46 patients missed an ITQ post-treatment score (see Figure 1). In total, 308 patients were included in the study with a mean age of 41.26 (*SD* = 12.70, age range 18–71, 77.6% female). Ethical exemption was assigned by the Medical Ethics Review Committee of the VU University Medical Centre (registered with the US Office for Human Research Protections (OHRP) as IRB00002991, FWA number FWA00017598) and written informed consent was obtained for using the data for scientific research purposes after the patients were informed about the study. The research information was given during the first intake session and patients had 1 week of consideration time. There were no additional advertisements or recruiting procedures.

2. 2. Procedure

Two intake sessions preceded treatment. During the first, the Clinician-Administered PTSD Scale for DSM-5 (CAPS-5; Boeschoten et al., 2018; Weathers et al., 2017), Life Events Checklist for DSM-5 (LEC-5; Weathers et al., 2013) and Mini International Neuropsychiatric Interview (MINI; Lecrubier et al., 1997; Overbeek, Schruers, & Griez, 1999) were administered by trained psychologists. In between intakes 1 and 2, participants filled out the International Trauma Questionnaire (ITQ; Cloitre et al., 2018; Eidhof, Ter Heide, Boeschoten, & Olff, 2018) and PTSD Checklist (PCL-5; Blevins, Weathers, Davis, Witte, & Domino, 2015; Boeschoten, Bakker, Jongedijk, & Olff, 2014) through a web-based Routine Outcome Monitoring tool. During the total 8 days of treatment, participants were asked to fill out the PCL-5 at the beginning of the first therapy session on a daily basis. Nine days after the last treatment session, the post-treatment CAPS-5 measurement was administered at our clinic, and participants were asked to fill out post-treatment measurements of the ITQ and PCL-5 online.

2. 3. Treatment

The intensive trauma-focused treatment format consisted of two consecutive weeks, with 4 days of treatment each week, in which patients went home for the weekend in between (De Jongh et al., 2020; Van Toorenburg et al., 2020; Van Woudenberg et al., 2018; Voorendonk, Sanches, De Jongh, & Van Minnen, 2019; Wagenmans, Van Minnen, Sleijpen, & De Jongh, 2018; Zoet, Wagenmans, Van Minnen, & De Jongh, 2018). The intensive treatment programme is developed to treat patients suffering from severe PTSD and is specifically designed to reduce the drop-out rates for PTSD patients. See Van Woudenberg et al. (2018) for detailed information about the treatment programme. During their treatment, patients stayed at the clinic. The inpatient treatment format was used for practical reasons such as to reduce travel time and to enable patients to follow the tight morning to evening schedule on treatment days. Treatment commenced without a prior preparation or stabilization phase and

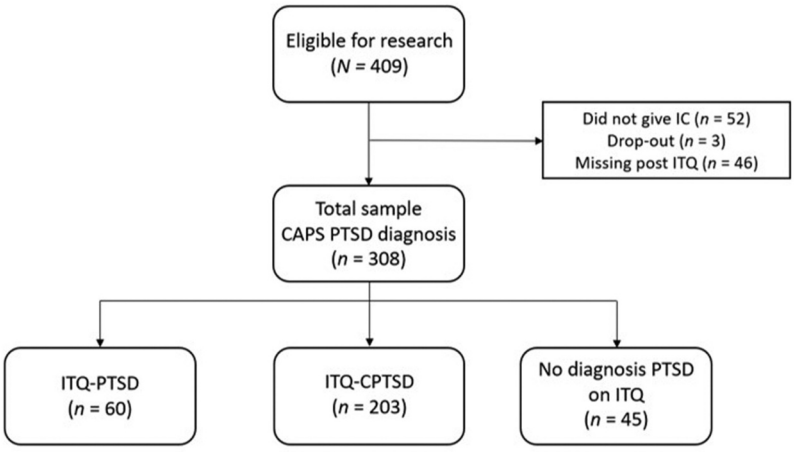

Figure 1. Flow chart participants. CAPS = Clinician-Administered PTSD Scale. ITQ = International Trauma Questionnaire.

consisted of 90 minutes of individual prolonged exposure (PE) in the morning and 90 minutes of individual eye movement desensitization and reprocessing (EMDR) therapy in the afternoon. PE was delivered according to a modified version of the protocol principles described by Foa, Hembree, and Rothbaum (2007). Patients did not receive audio recordings of their sessions so that PE fitted the intensive treatment format and tight schedule. EMDR therapy was delivered according to the Dutch EMDR therapy protocol by De Jongh and Ten Broeke (2013), which was based on the work of Shapiro (2018). Both PE and EMDR therapies were delivered by psychologists who had a master's degree in clinical psychology and were trained in PE and EMDR therapy. The rationale for combining PE and EMDR therapy lies in the notion that these therapies may indeed share some commonalities (such as focus on trauma, Schnyder et al., 2015), but might have different underlying mechanisms (Lee, Taylor, & Drummond, 2006). Therefore, it is plausible that these treatments could enhance each other, and that combining those two effective treatments might lead to more optimal results. Furthermore, a therapist rotation model was used, in which each treatment session was delivered by a different psychologist. It is thought that 'therapist rotation' improves the treatment adherence of therapists and decreases therapists' fear and avoidance behaviour, which is supported by explorative data (Van Minnen et al., 2018).

In between the trauma-focused treatment sessions, patients took part in a physical activity and psycho-education programme, offered in a group setting. The physical activities consisted of in- and outdoor activities of varying intensity such as mountain biking and walking. The purpose of psycho-education was mainly to inform patients on PTSD-related topics, such as symptoms, triggers, and avoidance behaviours but also on the various components of the programme, with room for discussions. It is important to note that no exercises nor skills training regarding emotion regulation, relaxation, or grounding were offered during these psycho-education sessions.

2. 4. Measures

To establish the PTSD diagnosis based on the DSM-5 (American Psychiatric Association, 2013) and measure the change in severity of PTSD symptoms, the Dutch version of the CAPS-5 (Boeschoten et al., 2018) was used at pre- and post-treatment. The CAPS-5 is a diagnostic interview that assesses the four DSM-5 PTSD-related domains: re-experiencing (B), avoidance (C), negative alterations in cognition and mood (D), and alterations in arousal and reactivity (E). The CAPS-5 consists of 20 items about the frequency and intensity of PTSD symptoms that are answered on a 5-point Likert scale ranging from 0 (*absent*) to 4 (*extreme/incapacitating*). According to the CAPS-5 scoring rule (SEV2 rule), a symptom is present whenever the severity rating, after assessing both frequency and intensity rate, is scored to be 2 (*moderate*) or higher. To diagnose PTSD, the SEV2 rule in combination with the DSM-5 algorithm was used (Boeschoten et al., 2018; Weathers et al., 2017). The total severity score is calculated by summing up item 1 to 20, with an overall scoring range between 0 and 80. At pre-treatment, the CAPS-5 month version was administered, whereas the CAPS-5 week version was used at post-treatment. The CAPS-5 Dutch version has good internal consistency and reliability (Boeschoten et al., 2018).

To establish the PTSD and CPTSD diagnoses based on the ICD-11, and measure the change in the severity of PTSD and DSO symptoms, the Dutch version of the ITQ was used at pre- and post-treatment (Cloitre et al., 2018; Eidhof et al., 2018). The ITQ is a self-report measure and consists of 12 items with a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*extremely*). The ITQ consists of three symptom clusters referring to PTSD (re-experiencing, avoidance and sense of threat) and three additional symptom clusters referring to DSO (affective dysregulation, disturbances in relationships, and negative self-concept). The CPTSD diagnosis is constructed as a combination of all PTSD symptom clusters and all DSO symptom clusters. Every symptom cluster consists of two symptoms and only severity scores of 2 or higher are used to indicate a symptom. For both PTSD and CPTSD diagnosis, the endorsement of one of two symptoms from each symptom cluster and an additional functional impairment are required. A patient cannot receive both PTSD and CPTSD diagnoses. The total severity of PTSD and DSO symptom scores is calculated by, respectively, summing up item 1 to 6 and 7 to 12, with a total ITQ score ranging between 0 and 48 (PTSD+DSO). In addition, the three DSO symptom clusters separately have an overall scoring range of 0 to 8, with a total DSO symptom score ranging between 0 and 24. At pre-treatment, the ITQ month version was administered, whereas an ITQ week version was used at post-treatment. The previous versions of the ITQ have been shown to be reliable and valid measures of PTSD and DSO (Hyland et al., 2017; Karatzias et al., 2017; Shevlin et al., 2018), and the currently used 12-item version is recently demonstrated to be a valid measure to diagnose PTSD and CPTSD based on the ICD-11 (Cloitre et al., 2018).

To assess the change in PTSD symptom severity during treatment, the Dutch version of the PTSD

Checklist (PCL-5; Boeschoten et al., 2014) was used as a self-report measure at baseline, on each of the 8 treatment days and at post-treatment. The PCL-5 is based on the PTSD diagnosis of the DSM-5 and consists of 20 items with a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*extremely*). The total severity score is calculated by summing up item 1 to 20, with an overall scoring range between 0 and 80. The PCL-5 has high internal consistency and good validity (Blevins et al., 2015).

The Dutch version of The Life Events Checklist for DSM-5 (LEC-5) (Weathers et al., 2013) was used to assess the type of traumatic events that patients had experienced at baseline. This self-report measure consists of 17 items on which the patients can score whether or not they encountered the traumatic events.

The Dutch version of the Mini International Neuropsychiatric Interview was used (MINI) (Overbeek et al., 1999) to establish a diagnosis for the possible presence of comorbid disorders and assess current suicidal risk. It is a reliable and well-validated structured diagnostic interview to establish DSM-IV diagnosis (Lecrubier et al., 1997). All scores are obtained as a dichotomous score (yes or no), and suicidal risk was categorized as 'no risk', 'low', 'moderate', and 'high'.

2. 5. Statistical analysis

For all statistical analysis, IBM SPSS Statistics version 25 was used and the level of significance was set at a =.05 (two-sided). To check whether the group that had a missing ITQ post-treatment score and was excluded from analysis (n = 46) differed significantly from the completers sample (n = 308) on gender, mean age, suicide risk, comorbidity, type of trauma, ITQ pre-scores, pre- and post-scores of the CAPS-5 and PCL-5, independent sample t-tests and chi-square tests were conducted. Since the assumptions for mixed-design ANOVA were violated (normality, homogeneity of variances), non-parametric options or Welch–Satterthwaite adjusted degrees of freedom were used when needed in the ITQ-PTSD and ITQ-CPTSD group separately. Wilcoxon signed-rank tests were administered on CAPS-5 and PCL-5 scores at pre- and post-treatment, and Mann–Whitney tests were administered on the CAPS-5 and PCL-5 symptom difference scores (post-pre) to compare the change in the two groups. Friedman tests were used on the PCL-5 scores during the 8 days of treatment for both groups separately. Regarding the ITQ scores, paired sample t-tests were used on the ITQ total score and ITQ DSO score at pre- and post-treatment. Independent sample t-tests were used to compare the change on the ITQ total score and ITQ DSO score (post-pre) in the two groups. Wilcoxon signed-rank tests were administered on the ITQ PTSD symptoms and the three ITQ DSO symptom cluster scores at pre- and post-treatment, and a Mann–Whitney test was administered on the ITQ PTSD symptom difference scores (post-pre) to compare the change in the two groups. Clinical relevant symptom change on the CAPS-5 and ITQ at post-treatment was assessed by looking at the percentage that lost a PTSD or CPTSD diagnosis. Loss of PTSD diagnosis on the CAPS-5 was defined as no longer fulfiling the SEV2 rule in combination with the DSM-5 algorithm (Boeschoten et al., 2018; Weathers et al., 2017). Loss of PTSD diagnosis on the ITQ was defined as no longer endorsement of at least one symptom per PTSD symptom cluster or functional impairment. Loss of CPTSD diagnosis on the ITQ was defined as no longer endorsement of one symptom per DSO symptom cluster or functional impairment, or not fulfiling the ITQ-based PTSD diagnosis anymore. To determine whether patients experienced symptom improvement or worsening beyond what could be attributed to measurement error, the reliable change (RC) index was calculated for the CAPS-5 and PCL-5. Pooled standard deviations of pre- and post-measurements were used (Lancaster et al., 2019) in combination with test–retest reliability information from previous research (Blevins et al., 2015; Weathers et al., 2017). Symptom improvement and worsening scores above 14.05 on the CAPS-5 and above 15.89 on the PCL-5 were characterized as reliable changes.

3. Results

The sample of 308 patients consisted of patients suffering from severe PTSD reflected by the high CAPS-5 severity scores, high rates of sexual (80.8%) and physical abuse (92.5%), and elevated suicide risks (74.3%). No differences between the excluded (n = 46) and completers sample (n = 308) could be detected on gender, suicide risk, comorbidity, type of trauma, ITQ pre-scores, PCL-5 pre- and post-scores, and CAPS-5 pre-scores (all ps >.154). Conversely, the excluded sample was significantly younger (p = .008) and had lower CAPS-5 post-scores (p = .019) than the completers sample.

All 308 included patients had a PTSD diagnosis based on the CAPS-5 at baseline. Of these 308 patients, 203 patients (65.9%) met the diagnostic criteria of CPTSD (ITQ-CPTSD group), and 60 patients (19.5%) met the diagnostic criteria of PTSD (ITQ-PTSD group). The remaining 45 patients (14.6%) did not meet the criteria for CPTSD or PTSD diagnosis measured with the ITQ. For patient flow, see Figure 1 and for sample characteristics, see Table 1. In line with previous studies, patients with CPTSD (ITQ-CPTSD group) more often reported a history of sexual abuse and showed a higher rate of comorbidity and elevated suicide rates in comparison to PTSD patients (ITQ-PTSD group). Of all patients that

Table 1. Baseline sample characteristics for the total sample and the ITQ-PTSD and ITQ-CPTSD groups separately.

	Total n = 308	ITQ-PTSD n = 60	ITQ-CPTSD n = 203
	n (%)	n (%)	n (%)
Trauma exposure			
Sexual abuse*	249 (80.8)	43 (71.7)	175 (86.2)
Physical abuse	285 (92.5)	54 (90.0)	190 (93.6)
Natural disasters and severe accidents	208 (67.5)	39 (65.0)	135 (66.5)
Comorbidity			
Depressive	166 (53.9)	22 (36.7)	129 (63.5)
disorders***	137 (44.5)	16 (26.7)	102 (50.2)
Anxiety disorders**			
Suicide risk			
No**	79 (25.6)	23 (38.3)	40 (19.7)
Low	111 (36.0)	23 (38.3)	75 (36.9)
Medium	48 (15.6)	9 (15.0)	35 (17.2)
High**	70 (22.7)	5 (8.3)	53 (26.1)

*p <.05, **p <.01, ***p <.001; significant differences between ITQ-PTSD and ITQ-CPTSD.

showed a history of physical or sexual abuse, most patients (85.1%) had suffered from multiple, repeated traumas. In addition, 57.7% reported sexual abuse during childhood (before age 12).

3. 1. Change in PTSD symptom severity (CAPS-5 and PCL-5)

A significant decrease in CAPS-5 scores (Z = −6.60, p < .001, Cohen's d = 1.51) and PCL-5 scores (Z = −6.71, p < .001, Cohen's d = 1.55) from pre- to post-treatment in the ITQ-PTSD group was found. In addition, a significant decrease in CAPS-5 scores (Z = −12.19, p < .001, Cohen's d = 1.52) and PCL-5 scores (Z = −12.19, p < .001, Cohen's d = 1.53) from pre- to post-treatment in the ITQ-CPTSD group was found. Pre- to post-treatment decline of CAPS-5 scores were not significantly different between the groups (U = 5445.00, p = .213), but the decline in PCL-5 scores from pre- to post-treatment was significantly stronger in the ITQ-CPTSD group compared to the ITQ-PTSD group (U = 5017.50, p = .043). These results are presented in Figure 2. Furthermore, a significant decrease in PCL-5 scores during the 8 days of treatment was found for both the ITQ-PTSD group ($\chi^2(7)$ = 230.57, p < .001) and the ITQ-CPTSD group ($\chi^2(7)$ = 791.21, p < .001; see Figure 2).

3. 2. Change in PTSD and DSO symptom severity (ITQ)

A significant decrease in ITQ total scores was found from pre- to post-treatment in the ITQ-PTSD (t(59) = 14.59, p < .001, Cohen's d = 1.88) and ITQ-CPTSD group (t(202) = 28.17, p < .001, Cohen's d = 1.98). The decline in ITQ total scores from pre- to post-treatment was significantly stronger in the ITQ-CPTSD group compared to the ITQ-PTSD group (t(261) = 3.01, p = .003). A significant decrease in ITQ PTSD symptom scores was found from pre- to post-treatment in the ITQ-PTSD (Z = −6.66, p < .001, Cohen's d = 1.53) and ITQ-CPTSD group (Z = −12.25, p < .001, Cohen's d = 1.53). Furthermore, a significant decrease in ITQ DSO symptom scores was found from pre- to post-treatment in the ITQ-PTSD (t(59) = 9.70, p < .001, Cohen's d = 1.25) and ITQ-CPTSD

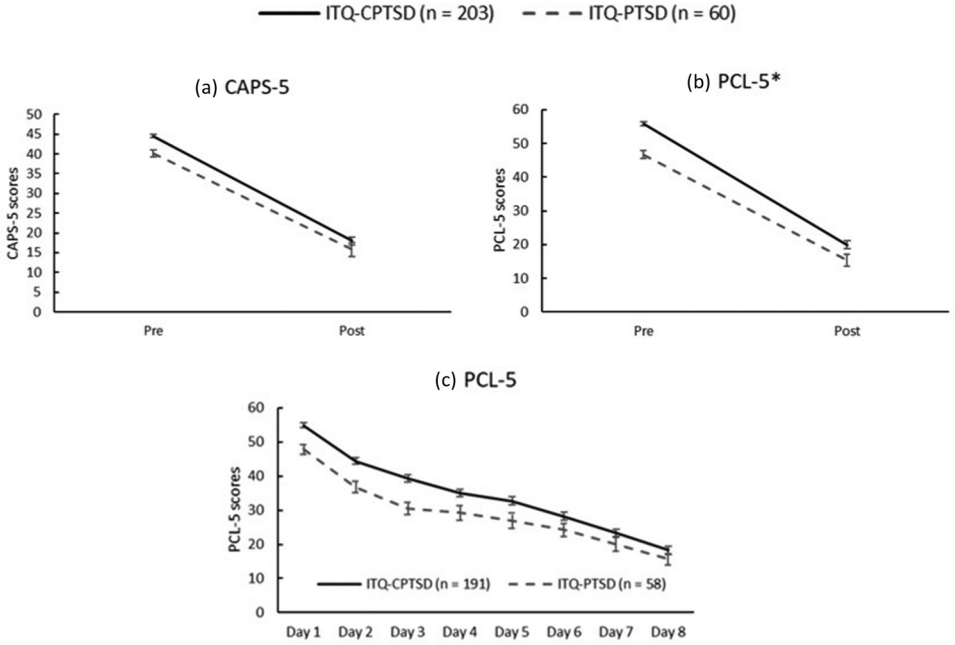

Figure 2. Mean (a) CAPS-5 and (b) PCL-5 scores at pre- and post-treatment and (c) mean PCL-5 scores during treatment for patients with ITQ-CPTSD and ITQ-PTSD diagnosis. *p <.05, **p <.01, ***p <.001; a significant difference in decline between ITQ-CPTSD and ITQ-PTSD group. Error bars represent standard error of the mean (s.e.m.).

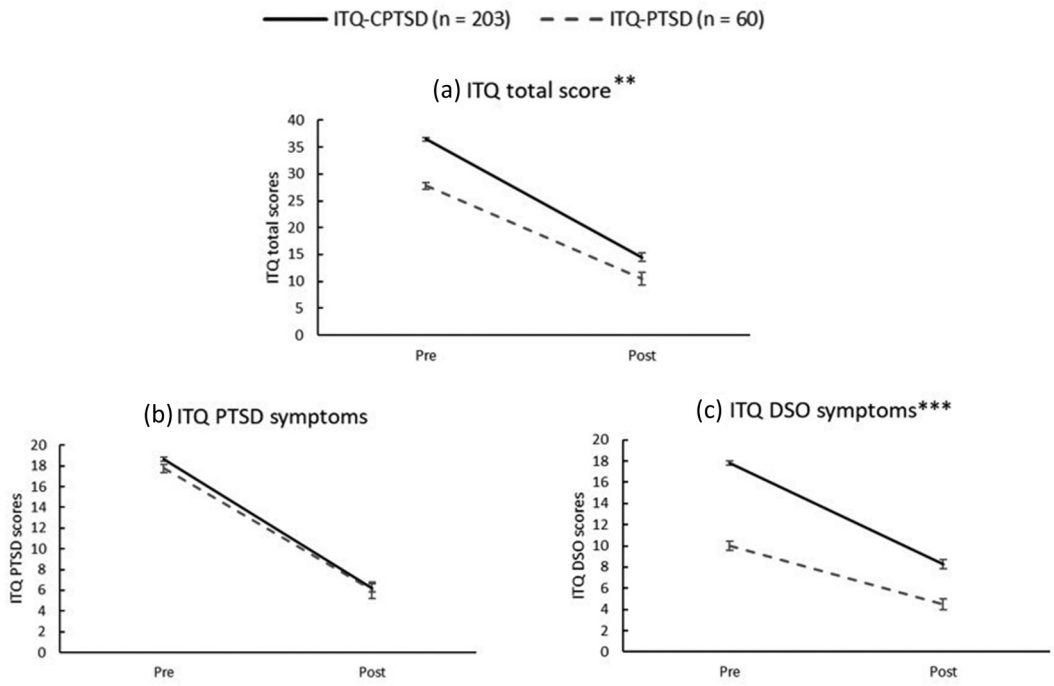

Figure 3. Mean (a) ITQ total, (b) ITQ PTSD symptom and (c) ITQ DSO symptom scores at pre- and post-treatment for patients with ITQ-CPTSD and ITQ-PTSD diagnosis. *p <.05, **p <.01, ***p <.001; a significant difference in decline between ITQ-CPTSD and ITQ-PTSD group. Error bars represent standard error of the mean (s.e.m.).

Table 2. DSO symptom cluster scores (AD = Affect dysregulation, NSC = Negative self-concept, DR = disturbed relationships) at pre- and post-treatment in the ITQ-PTSD (n = 60) and ITQ-CPTSD group (n = 203).

	Pre		Post		Effect size Pre-post
	Mean	*SD*	Mean	*SD*	Cohen's *d*
ITQ-PTSD					
AD***	4.28	*1.53*	1.83	*1.68*	1.34
NSC***	1.88	*1.91*	.85	*1.59*	.69
DR***	3.85	*1.96*	1.80	*1.88*	1.27
ITQ-CPTSD					
AD***	5.42	*1.40*	2.55	*2.16*	1.34
NSC***	6.34	*1.48*	2.77	*2.60*	1.36
DR***	6.05	*1.45*	2.93	*2.38*	1.34

*p <.05, **p <.01, ***p <.001.

group (t(202) = 21.31, p < .001, Cohen's d = 1.50). There was no significant difference in pre- to post-treatment decline of ITQ PTSD symptom scores between the groups (U = 5818.00, p = .599). However, the decline in ITQ DSO symptom scores from pre- to post-treatment was significantly stronger in the ITQ-CPTSD group compared to the ITQ-PTSD group (t (139.17) = 5.56, p < .001). These results are presented in Figure 3. Means and standard deviations for the three DSO symptom clusters per ITQ-PTSD or ITQ-CPTSD group are presented in Table 2, which shows significant decreases in all clusters (all ps <.001) with moderate to large effect sizes.

3. 3. Effect of treatment on loss of diagnoses and symptom improvement

Based on the CAPS-5, 228 patients (74.0%) did not fulfil the diagnostic criteria of PTSD at post-treatment and thus lost their PTSD diagnosis. Also, of those who could be diagnosed with PTSD based on the ITQ at baseline (n = 60), 51 patients (85.0%) lost their ITQ-PTSD diagnosis at post-treatment. Likewise, of those who could be diagnosed with CPTSD based on the ITQ at baseline (n = 203), 178 patients (87.7%) lost their ITQ-CPTSD diagnosis at post-treatment (see Figure 4). Overall, 244 patients (79.2%) showed reliable symptom improvement on the CAPS-5 from pre- to post-treatment (RC index > 14.05), with on average a decrease of 32.10 points (SD = 9.30). In the ITQ-PTSD group, 80.0% showed reliable improvement on the CAPS-5, in the ITQ-CPTSD group 76.4%. In addition, 263 patients (85.4%) showed reliable symptom improvement on the PCL-5 from pre- to post-treatment (RC index > 15.89), with on average a decrease of 39.53 points (SD = 12.63). In the ITQ-PTSD group, 85.0% showed reliable improvement on the PCL-5, in the ITQ-CPTSD group 84.7%.

3. 4. Safety and symptom worsening

There were no adverse events monitored by the clinical staff during the study time frame. None of the patients showed reliable symptom worsening on the

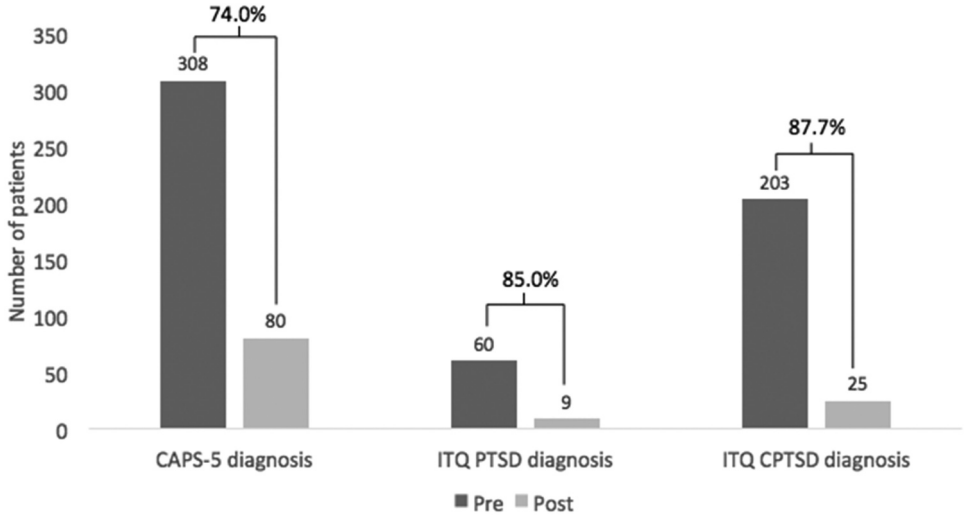

Figure 4. Number of patients with a PTSD diagnosis on CAPS-5 and with a PTSD or CPTSD diagnosis on ITQ at pre- and post-treatment. The percentage reflects the loss of diagnoses.

CAPS-5, nor on the PCL-5, during the duration of the study based on the RC indexes (CAPS-5 > 14.05; PCL-5 > 15.89).

4. Discussion

4. 1. Main findings

The results lend support to our hypothesis that symptoms of both PTSD and CPTSD (PTSD and DSO symptoms) would significantly decrease after trauma-focused treatment. Although CPTSD patients were characterized by somewhat higher severity scores than PTSD patients, both patient groups showed a strong and comparable decrease in PTSD and CPTSD-related symptoms from pre- to post-treatment. This is reflected in a significant level of loss of PTSD and CPTSD diagnoses (85.0% and 87.7%, respectively) based on the International Trauma Questionnaire (ITQ). Further, the absence of adverse events and none of the patients showing reliable symptom worsening from pre- to post-treatment support the safety of treating CPTSD patients with an intensive trauma-focused inpatient treatment programme without a stabilization phase prior to treatment.

To our knowledge, this is the first study to investigate an intensive trauma-focused treatment outcome in a large sample of CPTSD patients (n = 203), formally established with the 12-item ITQ (Cloitre et al., 2018). Several findings are noteworthy. First, while all patients were diagnosed with PTSD based on the CAPS-5, 14.6% did not meet the diagnostic criteria of PTSD based on the ICD-11 criteria as measured with the ITQ, which is in line with the more strict diagnostic criteria for a PTSD diagnosis in the ICD-11 in comparison with the DSM-5. Of the patients who met a CAPS-5 PTSD diagnosis, a large proportion (65.9%) met the criteria for CPTSD based on the ITQ. This is much higher than the prevalence of 13% previously estimated before the ITQ was published (Wolf et al., 2015). The significant decrease in key symptoms of CPTSD, the large proportion of CPTSD patients that lost their diagnosis (87.7%), the decline in emotion regulation difficulties, disturbances in interpersonal relationships, and increase in self-esteem, following intensive trauma-focused treatment, emphasized that we should not deter from offering the option of trauma-focused treatment to CPTSD patients. The commonly held belief that patients with CPTSD warrant a different treatment (e.g. stabilization or skill training in the first treatment phase before the start of trauma-focused treatment) can be questioned based on our results (Cloitre et al., 2011; De Jongh et al., 2016).

4. 2. Limitations

Our results should be considered in light of the limitations of this study, the main being the uncontrolled nature of the study. Since there is no comparison with a control group that was provided with an a priori stabilization programme, we cannot rule out the possibility that additional stabilization could have improved treatment outcome for CPTSD patients even more. Besides, follow-up measurements are needed in future studies, as possible differences between trauma-focused treatment and phase-based treatments might only become visible at follow-up. Also, our treatment programme was provided on an in-patient basis, so that it is unknown whether these results would transfer to outpatient treatment programmes. Furthermore,

the pre- and post-measurements of the PTSD and CPTSD symptoms covered different time-frames (month vs. week) which could have influenced the results, even though strong reductions of symptoms and loss of diagnoses were found. Finally, despite the fact that the ITQ is currently considered an established measure to diagnose a CPTSD diagnosis, classifying individuals based on a self-report measure instead of a clinician-rated instrument such as a clinical interview strongly questions the reliability and validity of the diagnosis (Cloitre et al., 2018).

4. 3. Implications

In conclusion, the results of the present study support the notion that the majority of patients with CPTSD can benefit from intensive trauma-focused psychotherapy. Although a small percentage of patients remained fulfiling the criteria of CPTSD after treatment (12.3%), none of the patients showed reliable symptom worsening on both self-report and clinical interview measures from pre- to post-treatment. This suggests that intensive trauma-focused treatment does not pose significant risks for patients with CPTSD and that we should not prevent CPTSD patients from undergoing evidence-based trauma-focused treatment. The patients that did not recover, may be in need of a longer treatment programme, which would be in line with previous studies showing that adding more sessions can enhance treatment results (Foa et al., 2005). Nevertheless, future controlled research on optimal treatments for all CPTSD patients and support for intensive trauma-focused treatment programmes outside the clinical setting are required.

Disclosure statement

Van Minnen receives income for published book chapters on PTSD and for the training of postdoctoral professionals in prolonged exposure. De Jongh receives income from published books on EMDR therapy and for the training of postdoctoral professionals in this method. Voorendonk and Rozendaal have nothing to disclose.

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