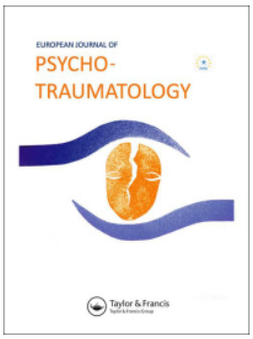

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CLINICAL RESEARCH ARTICLE

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Symptom retention after successful intensive trauma-focused treatment for post-traumatic stress disorder

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ABSTRACT

Background: Evidence suggests that individuals undergoing successful treatment for post-traumatic stress disorder (PTSD) continue to experience PTSD symptoms.

Objective: To determine the extent to which people continue to suffer from PTSD symptoms after intensive trauma-focused treatment and at six-month follow-up, despite no longer meeting diagnostic criteria for PTSD.

Method: In total, 1015 individuals with PTSD participated in an eight-day intensive trauma-focused treatment programme combining psychoeducation, physical activity, prolonged exposure, and EMDR therapy. PTSD symptoms were assessed using the Clinician-Administered PTSD Scale for DSM-5 (CAPS-5) at baseline, post-treatment, and at six-months follow-up. Residual symptoms among those who no longer met PTSD diagnostic criteria were identified. Logistic regression analyses explored baseline predictors of the most persistent symptoms.

Results: CAPS-5 total scores showed a significant reduction from pre- to post-treatment ($d = 1.99$) and remained improved at six-month follow-up ($d = 1.48$), despite a small to moderate increase in symptoms between post-treatment and follow-up ($d = -0.38$). Among those no longer meeting PTSD criteria post-treatment (75.8%) or at follow-up (63.2%), a substantial proportion (56.1% and 44.7% respectively) reported residual symptoms. The most frequently reported residual symptoms at six-months follow-up were negative beliefs (32.2%), negative feelings (28.7%), and intrusive memories (26.9%). The most persistent symptoms, based on odds ratios, were avoidance of thoughts or feelings (C1, OR = 38.38), intrusive memories (B1, OR = 25.00), and negative feelings (D4, OR = 22.12). Predictors of these residual symptoms included number of traumatic events, sexual trauma, suicidality, country of birth and receiving governmental income support.

Conclusions: The results support growing awareness that, after seemingly successful trauma-focused treatment, a notable proportion of patients continue to suffer from specific PTSD symptoms. These findings underscore the importance of continued monitoring and tailored interventions targeting residual symptoms following treatment.

ARTICLE HISTORY

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KEYWORDS

PTSD; intensive trauma-focused treatment; residual symptoms; follow-up; predictors; CAPS-5; post-treatment outcomes

PALABRAS CLAVE

TEPT; tratamiento intensivo centrado en el trauma; síntomas residuales; seguimiento; predictores; CAPS-5; resultados postratamiento

HIGHLIGHTS

- Approximately half of the individuals in the current study who lost their diagnostic status post-treatment still experienced PTSD symptoms.
- The symptoms that were most likely to persist at the six-month follow-up were avoidance of thoughts or feelings, intrusive memories and negative feelings.
- These results underscore the complexity of interpreting treatment outcomes and highlight that the absence of a diagnosis does not guarantee the alleviation of symptoms and associated impairment.

Retención de síntomas después de un tratamiento intensivo exitoso centrado en el trauma para trastorno de estrés postraumático

Antecedentes: La evidencia sugiere que las personas que se someten a un tratamiento exitoso para trastorno de estrés postraumático (TEPT) continúan experimentando síntomas de TEPT.

Objetivo: Determinar en que medida las personas continúan sufriendo síntomas de TEPT después de un tratamiento intensivo centrado en el trauma y al seguimiento a los seis meses, a pesar de ya no cumplir los criterios para el diagnóstico de TEPT.

Metodología: En total, 1015 personas con TEPT participaron en un programa intensivo de ocho días de tratamiento centrado en el trauma que combinó psicoeducación, actividad física, exposición prolongada y terapia EMDR. Los síntomas de TEPT se evaluaron utilizando la Escala de TEPT administrada por el clínico para el DSM-5 (CAPS-5) al inicio, postratamiento y seis meses después. Se identificaron síntomas residuales entre aquellos que ya no cumplían los criterios diagnósticos de TEPT. Los análisis de regresión logística exploraron los predictores iniciales de los síntomas más persistentes. Resultados: Las puntuaciones totales del CAPS-5 mostraron una reducción significativa del pretratamiento al postratamiento ($d = 1.99$) y se mantuvieron mejoradas en el seguimiento a los seis meses ($d = 1.48$), a pesar de un aumento de pequeño a moderado en los síntomas entre el postratamiento y el seguimiento ($d = -0.38$). Entre aquellos que ya no cumplían con los criterios para TEPT en el postratamiento (75.8%) o en el seguimiento (63.2%), una proporción sustancial (56.1%) reportó síntomas residuales. Los síntomas residuales más

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frecuentemente reportados a los seis meses fueron las creencias negativas (32.2%), sentimientos negativos (28.7%) y recuerdos intrusivos (26.9%). Los síntomas más persistentes, según las razones de probabilidades, fueron evitación de pensamientos o sentimientos (C1, OR = 38.38), recuerdos intrusivos (B1, OR = 25.00) y sentimientos negativos (D4, OR = 22.12). Los predictores de estos síntomas residuales incluyeron el número de eventos traumáticos, trauma sexual, suicidalidad, país de nacimiento y el recibir aporte económico gubernamental.

Conclusiones: Los resultados respaldan la creciente conciencia que, después de un tratamiento centrado en el trauma aparentemente exitoso, una proporción importante de pacientes continúa padeciendo síntomas específicos de TEPT. Estos hallazgos subrayan la importancia de continuar monitoreando y de intervenciones personalizadas dirigidas a los síntomas residuales tras el tratamiento.

Meta-analytical research has shown that psychological treatments, such as prolonged exposure therapy (PE), cognitive processing therapy, and eye movement desensitisation and reprocessing (EMDR) therapy, can effectively reduce symptoms of post-traumatic stress disorder (PTSD) with large effect sizes (Yunitri et al., 2023). These findings underscore the potential of these therapies in profoundly improving the lives of individuals with PTSD.

After treatment, the reduction in PTSD symptoms can translate into a loss of PTSD diagnostic status. This refers to no longer meeting the full diagnostic criteria for PTSD as defined by the DSM-5 (American Psychiatric Association [APA], 2013), which is typically assessed using the Clinician Administered PTSD Scale (CAPS-5; Weathers et al., 2013). The DSM-5 defines PTSD as comprising four core symptom clusters: intrusions (cluster B), avoidance (cluster C), negative alterations in cognition and mood (cluster D), and alterations in arousal and reactivity (cluster E; APA, 2013). Diagnostic status is considered lost when an individual no longer meets this full set of criteria (defined by the SEV2-rule), even if some symptoms persist (APA, 2013; Boeschoten et al., 2018; Weathers et al., 2013).

Although guideline-recommended interventions for PTSD are highly efficacious, a substantial subgroup of patients does not respond to treatment. A meta-analysis of 86 studies on first-line guideline-recommended psychological PTSD interventions showed that approximately 40% of the patients were classified as non-responders, with a large range from 0% to 85.7% (Semmlinger et al., 2024). Even among those who do respond – i.e. those who no longer meet the diagnostic criteria for PTSD – many continue to experience residual symptoms as consistently shown in the literature. However, findings vary regarding which specific PTSD symptoms persist. While some studies found intrusive symptoms to be most likely to persist (Cluster B; Gross et al., 2024; Kline et al., 2024; Levi et al., 2022), others found that hyperarousal, irritability/anger, sleep, and concentration difficulties (Cluster E; Kline et al., 2025; Schnurr & Lunney, 2019; Smid et al., 2018; Zayfert & DeViva, 2004) were most likely to remain. Conversely, Larsen et al. (2019) observed clinically significant levels of intrusions (Cluster B) and avoidance (Cluster C) at follow-up. To this end, it is conceivable that these variations in results are due to variations in sample characteristics, assessment measures, treatment methods, and the way in which treatment is organised. Above all, these findings highlight the complexity of treating PTSD, in which simply not meeting the diagnostic criteria may not fully capture a patient's recovery. Patients can lose their DSM-5 diagnostic status and still experience significant impairments (Kline et al., 2024; Varker et al., 2020). This highlights the need to move beyond binary diagnostic outcomes and consider residual symptoms to better understand treatment efficacy and to identify the need for additional support (Schnurr & Lunney, 2015; Springer et al., 2018).

Over the past ten years, several intensive trauma-focused treatment programmes have been developed with the aim of expediting recovery from PTSD symptoms. Researchers have extensively examined its applicability and effectiveness (Hoppen et al., 2023). Such brief treatment formats have demonstrated to be a safe, feasible, and well-tolerated treatment alternative with high retention rates (Ehlers et al., 2014; Hoppen et al., 2023; Van Woudenberg et al., 2018). This applies to patients with PTSD who have been exposed to a wide range of traumatic events, including early childhood sexual abuse (Wagenmans et al., 2018), and those with emotional regulation problems (Van Toorenburg et al., 2020), dissociative symptoms (Zoet et al., 2021), and complex PTSD (CPTSD; Voorendonk et al., 2020). To the best of our knowledge, only one study has been conducted to determine which symptoms are most likely to persist after intensive trauma-focused treatment (Kovacevic et al., 2022). While this study found that persistent symptoms were most commonly observed within the hyperarousal cluster (cluster E), it included only veterans and service members and, therefore, lacks generalisation to a general (i.e. civilian population) with other relevant types of trauma histories (e.g. chronic sexual abuse). Furthermore, the study relied entirely on a

self-report measure (PCL-5), which may have resulted in different symptom prevalence rates compared to a clinician-administered assessment which guarantees a reliably assessed loss of diagnostic PTSD status.

The purpose of the present study was to determine the extent to which people continue to suffer from PTSD symptoms even though they no longer meet the diagnostic criteria for PTSD based on the Clinician-Administered PTSD Scale for DSM-5 (CAPS-5). Considering the results of intensive treatment programmes in which two evidence-based therapies were combined and that showed large effects in previous studies, we expected a significant decrease in PTSD symptoms after treatment. However, based on previous literature, we hypothesised that individuals who no longer meet the diagnostic criteria for PTSD would nonetheless display residual symptoms at post-treatment and six-months follow-up. To identify which PTSD symptoms are most likely to persist following successful intensive trauma-focused treatment, we calculated the odds ratio of retaining each PTSD symptom post-treatment and at the six-month follow-up. In addition, we explored which baseline variables would be predictive of the three most persistent residual PTSD symptoms at the six-month follow-up.

1. Method

1.1. Participants

The current study, conducted at the Psychotrauma Expertise Centre (PSYTREC), a mental healthcare facility in the Netherlands from July 2019 to December 2021, investigated patients with PTSD undergoing an intensive eight-day treatment programme. Referrals were made by various general health care practitioners. Inclusion criteria required participants to meet the diagnostic criteria for PTSD according to the DSM-5, as assessed by the CAPS-5, be at least 18 years of age, and have sufficient understanding of the Dutch language. Exclusion applied to patients who attempted suicide three months prior to treatment. All the participants provided written informed consent. Ethical exemption from the research protocol was obtained from the Medical Ethics Review Committee of the VU University Medical Centre.

A flowchart detailing the patient selection process is shown in Figure 1. Of the 1015 patients included in this study, 811 (80%) were women, aged between 18 and 75 years (mean age = 40.84). The most frequently reported traumatic events for treatment were physical assaults (n = 957, 94,3%) and sexual trauma (n = 888, 87.5%). Comorbid mental health conditions included depression (n = 549, 54.1%) and panic disorder with or without agoraphobia (n = 434, 42.8%) at pre-treatment, with 337 patients (33.2%) reporting a moderate to high suicide risk. Table 1 provides an overview of the baseline characteristics of the sample.

1.2. Interventions

Participants were subjected to an eight-day intensive trauma-focused treatment (2 × 4 consecutive days). See Van Woudenberg et al. (2018) for a description of the treatment programme. After the first four days of treatment, the patients went home for three days, after which they completed the final four days of treatment either remotely via online sessions or

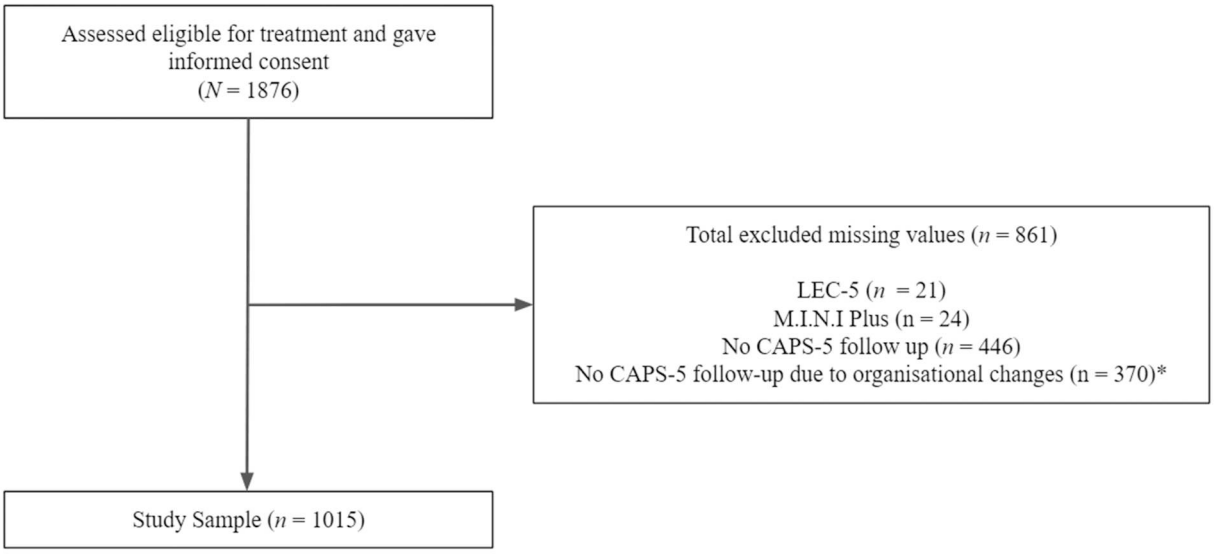

Figure 1. Participant flow.

Note. One case could have had multiple missing data in different assessment instruments. LEC-5 = Life Events Checklist for DSM-5 (Boeschoten et al., 2014). CAPS-5 = The Dutch version of the Clinician-Administered PTSD Scale for DSM-5 (Boeschoten et al., 2018), M.I.N.I. Plus = The Mini International Neuropsychiatric Interview Dutch version (Overbeek et al., 1999). * Due to organisational changes in 2021, some of the participants did not complete a six months follow-up CAPS-5.

Table 1. Baseline characteristics of the sample ($N = 1015$).

Variable	Total group $N = 1015$ N (%)
Comorbidity (M.I.N.I. Plus)	
Depressive episode	549 (54.1%)
Dysthymia current episode	10 (1.0%)
Specific phobia	84 (8.3%)
Generalised Anxiety Disorder	75 (7.4%)
Obsessive Compulsive disorder	77 (7.2%)
Panic disorder with or without agoraphobia current episode	434 (42.8%)
Social phobia	305 (30.1%)
Suicidal risk (M.I.N.I. Plus)	
None or low	675 (66.5%)
Moderate to high	337 (33.2%)
Type of trauma	
Physical abuse	940 (93%)
Sexual abuse	851 (84%)
Life-threatening accidents	680 (84%)

on-site. The treatment consisted of six hours of physical activity, two hours of psychoeducation both in a group setting (divided into 6 sessions), 90-minutes of individual prolonged exposure therapy, and 90 min of individual EMDR therapy per day. Trained clinical therapists administered the treatment sessions using a rotating system, which means that patients are treated by a different therapist each session (Van Minnen et al., 2018). Progress within sessions and compliance with the treatment protocols were reviewed at daily meetings.

1.2.1. Prolonged exposure therapy

Prolonged exposure therapy sessions followed a modified version of the protocol described by Foa et al. (2007). During these sessions, patients revisited traumatic memories by verbally describing the details of the traumatic event in the present tense with their eyes closed. In the current study, imaginal, interoceptive, and in vivo methods were used (for more information, see Craske et al., 2014).

1.2.2. EMDR therapy

EMDR therapy was performed according to a standard protocol (De Jongh & Ten Broeke, 2019; Shapiro, 2018). The version of EMDR therapy used was EMDR 2.0 (see Matthijssen et al., 2021) which utilises a higher dose regarding the working memory load than regular EMDR therapy. Treatment-interfering anticipatory fear was addressed using the flashforward protocol (Logie & De Jongh, 2014).

1.3. Procedure

Prior to entering the treatment programme, two intake sessions were conducted within one week. During the first intake, the inclusion criteria were addressed and participants were informed about the study by a trained psychologist. Additionally, measurements of the CAPS-5, Mini International Neuropsychiatric Interview (M.I.N.I.), and Life Events Checklist-5 (LEC-5) were examined. During the second intake session, a personal treatment plan was set up and the participants signed a written treatment contract, including informed consent. Post-treatment measurements of CAPS-5 were performed eight days after treatment. Six months after treatment, participants were contacted by telephone to monitor possible revictimization (LEC-5) and to conduct the six months follow-up of the PTSD score (CAPS-5). Due to organisational changes, this follow up CAPS-5 measure was phased out as of the treated groups in July 2021.

1.4. Assessments

The Dutch version of the CAPS-5 (Boeschoten et al., 2018) was used to examine the total PTSD severity score and isolated symptoms pre-treatment, eight days after treatment and six months after treatment. The CAPS-5 is a structured interview consisting of 20-items that scores the frequency and intensity of PTSD symptoms within the different clusters on a 5-point Likert scale from 0 (absent) to 4 (extreme). The total CAPS-5 score ranges from to 0–80. CAPS-5 first establishes whether and how an individual is exposed to an actual or imminent threat, serious injury, or sexual assault (criterion A). Index trauma was used as the reference point for administering the scale in accordance with the guidelines provided in the CAPS-5 instruction manual. The CAPS-5 follows the SEV2 scoring rule, which was followed in the assessment of this study (APA, 2013; Boeschoten et al., 2018; Wagenmans et al., 2013). A PTSD diagnosis requires at least one symptom from Criterion B, one from Criterion C, two from Criterion D, and two from Criterion E. Additionally, Criteria F (duration $\geq$1 month) and G (clinically significant distress or impairment) must be met. At pre-treatment and six-months follow-up, the monthly version of the CAPS-5 was used, and at post-treatment, the week-version was used.

The Life Events Checklist (LEC-5; Boeschoten et al., 2014) is a self-report questionnaire consisting of 19 items pertaining to different traumatic events that are known to be a probable cause of PTSD. The LEC-5 was administered pre-treatment, and at the six-month follow-up to administer possible revictimization. The items are dichotomous: 'not experienced it myself' and 'happened to/witnessed it myself'. In the six-month follow-up of the LEC-5, we specifically focused on items relevant to the definition of 'revictimization', concentrating on A-criterion traumatic events. The selected items included: natural disaster, fire, explosion, accident, severe injury, exposure to toxic substances, physical violence, violence with a weapon, sexual violence, other unpleasant sexual

experiences, armed conflict, life-threatening illness, profound human suffering, sudden violent death, sudden accidental death, severe injury, ritual abuse, and torture.

The Dutch version of the Mini International Neuropsychiatric Interview (M.I.N.I.; Overbeek et al., 1999; Sheehan et al., 1998) is a structured clinical interview used to examine comorbid mood and anxiety disorders, as well as suicidal ideation in the current sample. The M.I.N.I. consists of dichotomous items (yes or no) that represent DSM-V criteria.

1.5. Data analysis

Prior to data analyses, data were examined for outliers in the CAPS-5 total score at pre-treatment ($n = 10$) and follow-up ($n = 5$). Extreme values, defined as more than three standard deviations from the mean, were identified, but were determined to be valid data points rather than input errors. As the 5% trimmed mean was consistent with the overall mean, no outliers were excluded from the analysis. Furthermore, the main assumptions for the analyses were tested, and non-parametric tests were used when required. To examine the sample characteristics at baseline, means, standard deviations, and frequency distributions were calculated. Effect sizes were calculated in accordance with Cohen's (1988) guidelines, where 0.2 indicates a small effect, 0.5 a medium effect, and 0.8 or higher a large effect. To examine the representativeness of the analysed sample ($N = 1015$), we compared it to those excluded due to missing follow-up data ($N = 861$). No significant differences were found in sex, education level, or baseline PTSD severity. However, significant differences emerged in age (analysed group older, $p = .008$), psychiatric diagnoses (higher rates of mood disorders, $p = .027$; anxiety disorders, $p = .012$; and schizophrenia, $p = .037$), suicidality (lower rates of moderate-to-high suicidality, $p < .001$), and lower rates of current substance dependence ($p = .009$). The analysed group also reported more trauma exposure overall ($p < .001$), including unwanted sexual experiences ($p = .016$), life-threatening illness or injury ($p = .015$), severe human suffering ($p < .001$), sudden accidental death ($p = .048$), other highly stressful events ($p = .001$), physical assault ($p = .048$), and serious accidents ($p = .028$). Descriptive analyses of the total CAPS-5 scores at each measurement point indicated violations of assumptions of normality, as reflected in the results of the Kolmogorov–Smirnov and Shapiro–Wilk statistics ($p < .001$). Therefore, the Greenhouse-Geisser correction was used in the analyses. To test our first hypothesis that there would be a significant decrease in PTSD symptoms, as measured by the CAPS-5 after treatment, we conducted a one-way repeated-measures ANOVA. For our second hypothesis, we examined the extent to which individual PTSD symptoms either declined or persisted among those who no longer met the diagnostic criteria for PTSD post-treatment, both immediately after treatment and at the six-month follow-up. Descriptive statistics were used for analyses. Specifically, we created two dichotomous dummy variables: one indicating the presence of a CAPS-5 symptom before and after treatment and another indicating whether the patient met the criteria for a PTSD diagnosis according to the CAPS-5 post-treatment. The same approach was used for the follow-up data. Odds ratios were computed to calculate the specific symptoms that were most likely to persist at the six-months follow-up when patients lost their diagnostic status post-treatment. This was performed by generating cross-tabulations of the dummy variables mentioned above and calculating the associated risk estimates. Additionally, explorative multivariate logistic regression analyses were conducted to identify baseline predictors of the three PTSD symptoms with the highest odds of persistence at the six-month follow-up. Twenty baseline variables were included in the models. The variance inflation factor (VIF) was used to assess multicollinearity, with values >3 indicating potential concern. No multicollinearity was observed. Moreover, we calculated symptom distributions at post-treatment and follow-up among participants without a PTSD diagnosis, showing the mean, range, and median of residual CAPS-5 symptoms (items 1–20). All analyses were performed using IBM SPSS Statistics version 28. The level of significance for all statistical analyses was set at $\alpha = .05$.

2. Results

2.1. Change in PTSD symptoms from pre- to post-treatment and at six-months follow-up

The results showed a statistically significant difference in the mean CAPS-5 score among the three time points [F (2, 1013) = 2011.47, $p < .001$; Figure 2]. Bonferroni-corrected pairwise comparisons indicated that the mean post-treatment CAPS-5 score ($M = 15.74$, $SD = 13.32$) was significantly lower than that measured before treatment ($M = 42.78$, $SD = 7.26$; Cohen's $d = 1.99$). Although the mean CAPS-5 score at the six-months follow-up showed a small to medium significant increase compared with the mean score post-treatment (Cohen's $d = -0.38$, 95% CI [−0.45, −0.32], $p < .001$), the mean CAPS-5 score at the six-month follow-up ($M = 20.13$, $SD = 15.43$) remained significantly lower than that at baseline, indicating a large treatment effect (Cohen's $d = 1.48$). Furthermore, the results of the LEC-5 showed that 28.6% ($n = 290$) of the participants reported a form of revictimization at six months follow-up.

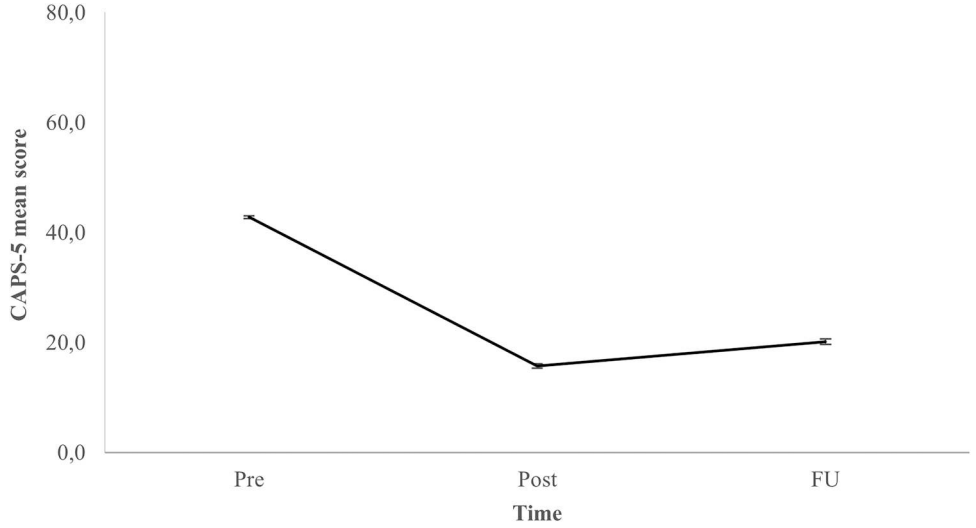

Figure 2. Mean scores of the CAPS-5 scores at pre-treatment (pre), post-treatment (post) and six-months follow-up (FU; $N = 1015$).

2.2. Loss of PTSD diagnostic status and residual symptoms at post-treatment and six-months follow-up

Of the patients who did not fulfil the diagnostic PTSD criteria post-treatment ($n = 769$, 75.8%) and at the six-months follow-up ($n = 641$, 63.2%), 56.1% at post-treatment and 44.7% at the six-month follow-up scored on at least one of the CAPS-5 symptoms. Post-treatment, 34.5% still experienced negative beliefs (D2), 30.2% experienced difficulty falling or staying asleep (E6), and 28.5% experienced difficulty concentrating (E5). At the six-months follow-up, these percentages decreased to 32.2% (D2), 25.3% (E6), and 22.3% (E5). Table 2 also shows the probabilities of each separated symptom cluster as indexed by an odds ratio (95% CI) still being present (severity of the symptom ≥ 2) by the loss of diagnosis post-treatment ($n = 769$) and at the six-month follow-up ($n = 641$). Among participants without a PTSD diagnosis post-treatment, the mean number of residual symptoms was 3.1 (range: 0–14; median: 2). The symptoms most likely to be retained six months after treatment when patients no longer met the PTSD diagnosis post-treatment were, in descending order of odds ratio (OR), avoidance of thoughts or feelings (C1, OR = 38.38), intrusive memories (B1, OR = 25.00), and negative feelings (D4, OR = 22.12). Among participants without a PTSD diagnosis at follow-up, the mean number of residual symptoms was 3.6 (range: 0–17; median: 3).

2.3. Explored predictors of residual PTSD symptoms

Multivariate logistic regression analyses showed that several baseline characteristics were significantly associated with the persistence of the three core residual PTSD symptoms at the six-month follow-up. Significant predictors of persistent avoidance of thoughts or feelings (C1) were number of traumatic events ($p = .040$, OR = 1.23) and moderate-to-high suicidality ($p < .001$, OR = 4.85). Significant predictors of persistent negative feelings (D4) included a history of sexual trauma ($p = .013$, OR = 4.64), country of birth ($p = .046$, OR = 2.99) and receiving governmental income support ($p = .024$, OR = 2.09). A full overview of all the predictors and the results of the multivariate logistic regression analyses are presented in Supplementary Table S1.

3. Discussion

The present study aimed to examine the impact of an intensive trauma-focused treatment programme, combining prolonged exposure and EMDR therapy, on previously reported residual symptoms in individuals with PTSD. As anticipated, the treatment resulted in a substantial reduction in PTSD symptoms post-treatment, with approximately three-quarters of the participants no longer meeting the diagnostic criteria for PTSD. Despite these positive outcomes, a substantial proportion of patients (56.1%) continued to experience PTSD symptoms even after they no longer met the diagnostic criteria for PTSD after treatment, whereas 44.7% continued to experience PTSD symptoms at the six-month follow-up. The types of symptoms with the highest odds of persistence six months after treatment were avoidance of thoughts or feelings, intrusive memories, and negative feelings.

These results are consistent with those of previous studies showing that a combination of intensive evidence-based treatments for PTSD can produce large, rapid reductions in PTSD symptoms across a range of trauma histories (Van Woudenberg et al., 2018; Voorendonk et al., 2023). However, these positive outcomes obscure important clinical realities. In clinical practice, the loss of diagnosis of PTSD is often viewed

Table 2. Percentage of participants ($N = 1015$) retaining each PTSD symptom cluster at pre-treatment, post-treatment and at six-months follow-up according to the CAPS-5, and the likelihood (i.e. odd ratio; 95% CI) of this symptom cluster still being present after treatment and at 6-months follow-up when patients lost their diagnostic status post-treatment.

Symptoms	Pre- treatment			Post-treatment			Six-month follow-up			Conditional probability of retaining the symptom post-treatment			Conditional probability of retaining the symptom at six-month follow-up		
										Lost PTSD diagnosis ($n = 769$)			Lost PTSD diagnosis ($n = 641$)		
	%	*n*	95% CI	%	*n*	95% CI	%	*n*	95% CI	%	*n*	OR (95% CI)	%	*n*	OR (95% CI)
B1. Intrusive memories	97.3	988	0.96–0.98	33.8	343	0.31–0.37	49.7	504	0.47–0.53	17.9	133	24.90 [16.80–36.92]	26.9	167	25 [16.97–36.81]
B2. Recurrent/ distressing dreams	77.0	782	0.75–0.80	25.7	261	0.23–0.28	39.9	405	0.37–0.43	15.0	86	14.40 [9.86–21.02]	24.3	116	11.1 [7.85–15.57]
B3. Dissociative reactions	75.1	762	0.72–0.78	15.8	160	0.14–0.18	22.7	230	0.20–0.25	7.1	40	13.37 [8.74–20.45]	8.4	39	12.25 [8.22–18.26]
B4. Distress about reminders	90.3	917	0.89–0.92	26.2	266	0.24–0.29	43.3	440	0.40–0.46	13.2	92	14.55 [10.15–20.88]	22.5	129	14.23 [10.22–19.82]
B5. Physiological reactivity	94.7	961	0.93–0.96	34.0	345	0.31–0.37	46.6	473	0.44–0.50	19.8	144	18.38 [12.56–26.89]	25.2	151	16.20 [11.53–22.74]
C1. Avoidance of thoughts/feelings	98.3	998	0.98–0.99	30.0	305	0.27–0.33	44.1	448	0.41–0.47	11.5	87	61.23 [38.72–96.83]	17.6	111	38.38 [26.07–56.52]
C2. Avoidance of people / places / situations	91.7	931	0.90–0.93	24.6	250	0.22–0.27	35.4	359	0.32–0.38	11.4	80	14.35 [10.05–20.50]	14.0	82	17.75 [12.69–24.82]
D1. Psychogenic amnesia	48.7	494	0.46–0.52	9.90	100	0.08–0.12	13.6	138	0.11–0.16	7.5	28	635 [3.72–10.86]	10.2	31	4.53 [2.81–7.30]
D2. Negative beliefs	91.5	929	0.90–0.93	46.5	472	0.43–0.50	50.4	512	0.47–0.54	34.5	242	18.65 [11.59–29.99]	32.2	187	13.49 [9.48–19.21]
D3. Negative cognitions about cause or effect	79.1	803	0.77–0.82	24.8	252	0.22–0.28	33.7	342	0.31–0.37	13.7	81	12.12 [8.38–17.52]	18.3	90	10.78 [7.71–15.06]
D4. Negative feelings	96.8	983	0.96–0.98	38.4	390	0.35–0.41	51.4	522	0.48–0.55	22.4	166	31.46 [19.95–49.62]	28.7	177	22.12 [15.10–32.41]
D5. Decreased interest in activities	77.5	787	0.75–0.80	23.4	238	0.21–0.26	32.8	333	0.30–0.36	12.6	74	9.91 [6.83–14.39]	16.6	79	9.86 [7.03–13.81]
D6. Detachment / estrangement	78.7	799	0.76–0.81	27.8	282	0.25–0.31	36.5	370	0.33–0.39	17.8	106	9.48 [6.62–13.59]	21.8	108	8.26 [5.97–11.42]
D7. Restricted range of affect	77.3	785	0.75–0.80	28.9	293	0.26–0.32	38.9	395	0.36–0.42	19.8	116	9.90 [6.86–14.29]	21.9	104	10.27 [7.35–14.36]
E1. Irritability / anger	57.4	583	0.54–0.60	17.0	173	0.15–0.19	27.0	274	0.24–0.30	14.7	65	5.25 [3.44–8.01]	21.4	78	4.70 [3.26–6.77]
E2. Reckless or self- destructive behaviour	16.8	171	0.15–0.19	5.1	52	0.04–0.07	9.5	96	0.08–0.11	4.9	6	7.73 [2.77–21.63]	5.0	5	12.80 [4.62–35.44]
E3. Hypervigilance	93.3	947	0.92–0.95	37.8	384	0.35–0.41	43.7	444	0.41–0.47	23.2	166	18.62 [12.49–27.75]	22.2	131	17.00 [12.14–23.82]
E4. Exaggerated startle	75.1	762	0.72–0.78	25.1	255	0.22–0.28	31.5	320	0.29–0.34	16.7	94	9.20 [6.38–13.25]	15.5	72	12.19 [8.58–17.33]
E5. Difficulty concentrating	87.1	884	0.85–0.89	38.3	389	0.35–0.41	40.5	411	0.37–0.44	28.5	187	7.68 [5.43–10.85]	22.3	122	11.95 [8.63–16.54]

(*Continued*)

Table 2. Continued.

Symptoms	Pre- treatment			Post-treatment			Six-month follow-up			Conditional probability of retaining the symptom post-treatment			Conditional probability of retaining the symptom at six-month follow-up		
										Lost PTSD diagnosis ($n = 769$)			Lost PTSD diagnosis ($n = 641$)		
	%	*n*	95% CI	%	*n*	95% CI	%	*n*	95% CI	%	*n*	OR (95% CI)	%	*n*	OR (95% CI)
E6. Difficulty falling or staying asleep	80.3	815	0.78–0.83	39.4	400	0.36–0.42	43.8	455	0.41–0.47	30.2	182	9.68 [6.60–14.19]	25.3	128	13.95 [9.77–19.90]
G1. Depersonalisation	27.8	282	0.25–0.31	9.1	92	0.07–0.11	11.9	121	0.10–0.14	8.8	17	7.03 [3.66–13.52]	11.7	19	4.29 [2.34–7.87]
G2. Derealization	24.0	244	0.21–0.27	7.0	71	0.05–0.09	10.1	103	0.08–0.12	5.8	10	10.00 [4.50–22.22]	7.1	10	9.77 [4.60–20.73]

Note. CI = Confidence interval. OR = Odds ratio, the probability that the severity of the symptom (score >2) will remain present after treatment and at six-months follow-up.

as the primary treatment endpoint. As a result, patients may be discharged prematurely or without appropriate follow-up despite the presence of ongoing symptoms or functional impairments. This highlights the importance of looking beyond diagnostic status and considering which specific symptoms tend to persist. In this respect, our findings regarding the persistence of the avoidance of thoughts and feelings, intrusive memories, and negative feelings align with those of previous studies. For instance, research showed that intrusive symptoms are among the most challenging to fully resolve following treatment (Gross et al., 2024; Kline et al., 2024). Furthermore, while Larsen et al. (2019) found that 47.1% of patients reported avoidance symptoms after successful treatment, Gross et al. (2024) found that the avoidance cluster was the least likely to be endorsed. It is worth noting that Gross et al. (2024) analysed symptom clusters rather than individual symptoms, whereas Larsen et al., (2019) used group means and scale-based cut-off scores rather than diagnostic criteria to determine the level of residual symptoms, which may account for this discrepancy. Interestingly, while both Schnurr and Lunney (2019) and Zayfert and DeViva (2004) found that hyperarousal symptoms were particularly persistent, these were not as prominent in our findings. These outcome differences may also reflect variability in the type of trauma across studies. For example, patients in our sample predominantly had been exposed to sexual violence (87.5%) and physical violence (94.3%), whereas Schnurr and Lunney's (2019) study sample predominantly contained female veterans with lower rates of sexual trauma (68.5%) and physical assault (14.9%) than in the present study. Similarly, the results of Zayfert and DeViva (2004) were based on a small sample of 27 persons, with fewer participants reporting sexual abuse (52% childhood sexual abuse and 15% adult sexual abuse) and physical abuse (4% childhood physical abuse and 15% adult physical abuse) than in our study.

Although the findings of this study largely align with previous research on the persistence of PTSD symptoms following treatment, our study adds to the limited body of research examining predictors of residual symptoms. Results from an exploratory multivariate regression analysis identified several significant predictors of residual symptomatology six months after treatment. Number of traumas at baseline was found to predict the persistence of avoidance of thoughts and feelings (Criterion C1). Notably, participants who reported moderate-to-high levels of suicidality at baseline were nearly five times more likely to continue experiencing avoidance symptoms (C1) at follow-up, underscoring the importance of addressing suicidality as a potential barrier to full recovery. Exposure to sexual violence emerged as a robust predictor of persistent negative feelings (Criterion D4),

with individuals exposed to such trauma being nearly five times more likely to report ongoing negative feelings post-treatment. In addition to trauma-related factors, contextual vulnerabilities contributed to symptom persistence. Specifically, country of birth (i.e. being born outside the Netherlands) was also linked to persistent negative feelings (D4), pointing to the potential influence of cultural or systemic factors on treatment outcomes. Similarly, receiving governmental income support was associated with sustained negative feelings (D4), suggesting that socioeconomic stressors may impede emotional recovery. Moreover, the fact that avoidance, intrusive memories, and negative feelings emerged as the most frequent residual symptoms in the present study suggests that extended interventions or periodic booster sessions, designed to consolidate therapeutic gains and manage emergent difficulties (Hendriks et al., 2018; Wesner et al., 2014), may be critical for sustained recovery. This is particularly relevant given the small- to moderate increase in symptoms observed in our study from post-treatment to six-month follow-up ($d = -0.38$), despite overall sustained treatment gains. Although other studies on intensive trauma-focused interventions have reported either stable or improved outcomes at longer-term follow-up (e.g. Hurley, 2018; Klaeth et al., 2024), some have also observed slight increases in symptoms (e.g. Kolthof et al., 2022; Voorendonk et al., 2023; Yasinski et al., 2022). Such fluctuations may be related to differences in sample size, characteristics (e.g. military vs civilian, presence of comorbidities), follow-up duration, or outcome measures (e.g. clinician-rated vs self-report). Future research should investigate the optimal formats and durations of follow-up strategies. For instance, developing structured aftercare plans by implementing regular assessments to monitor residual symptoms and detect relapse risk early (Rodriguez et al., 2012).

The conceptualisation of recovery from PTSD remains debatable. Although the terms loss of diagnostic status and remission are often used interchangeably, they reflect conceptually distinct outcomes (Morina et al., 2014). Loss of diagnostic status refers specifically to no longer meeting the full DSM-5 diagnostic criteria for PTSD, whereas remission typically denotes a broader recovery profile, including low symptom severity, restored functioning, and improved quality of life (Benfer & Litz, 2023; Murphy et al., 2017; Schnurr & Lunney, 2015). The absence of a diagnosis does not necessarily indicate complete symptom resolution or restored functioning. Defining recovery solely through diagnostic status is insufficient and risks overlooking clinically significant residual symptoms (Springer et al., 2018). Debates around the operationalisation of remission highlight concerns regarding binary cut-offs (e.g. Murphy et al., 2017), the functional impact of subclinical symptoms (e.g. Bryant et al., 2023), and the narrow focus on symptom counts rather than quality of life (e.g. Benfer & Litz, 2023). To this end, effect sizes such as Cohen's d may offer additional nuances, although they remain limited in capturing the multidimensional nature of recovery. Future research should prioritise resolving residual symptoms and considering outcome measures that capture broader indicators of recovery, such as quality of life (Benfer & Litz, 2023).

Several strengths and limitations of this study should be considered when interpreting the results. One of the strengths is the inclusion of a six-month follow-up period, which provides valuable insights into the long-term effects of the intervention. Additionally, our study utilised the CAPS-5 (Clinician-Administered PTSD Scale for DSM-5) to assess PTSD symptoms, which is a more comprehensive structured interview than other commonly used self-report measures such as the PCL-5 (e.g. Kovacevic et al., 2022). This likely enhanced the reliability of our findings. The large sample size further strengthened the generalisability of our results. Despite these strengths, this study has several limitations. First, because the findings are based on a treatment-seeking civilian population with PTSD and reflect only those patients who could be followed up after treatment, they should be generalised with caution. Second, given that a considerable number of participants were excluded from the analysis, many of whom were excluded because of organisational changes in the follow-up procedures (370 participants), it is important to acknowledge that the results may not fully represent the broader population. Third, the absence of a control group limits our ability to directly compare the observed treatment outcomes on residual symptoms with those from the standard care or non-treatment groups. Finally, we were unable to monitor potential external factors that may have occurred during the follow-up period, except that almost 30 percent of the individuals experienced revictimization according to LEC-5. Although re-exposure to traumatic events cannot be prevented, the inclusion of a six-month follow-up still offers valuable initial insights into the long-term trajectory of PTSD symptoms post-treatment. Future research should further investigate the role of external factors in symptom progression to provide a more comprehensive understanding of the factors influencing long-term recovery.

In conclusion, although intensive treatment trajectories such as our eight-day programme were highly effective for many participants, the persistence of specific PTSD symptoms in over half of those who no longer met diagnostic criteria at post-treatment, and in 45% of those who had lost their PTSD diagnosis at six-month follow-up, underscores the importance of moving beyond diagnostic status toward a more

comprehensive, individualised, and sustained approach to PTSD recovery. Therapists should be mindful of this phenomenon and be open to the use of additional interventions to address lingering symptoms and prevent relapse, if necessary. Future research could explore the most effective combinations or sequences of interventions for addressing different symptoms and identify predictive factors that may help reduce these lingering complaints, ultimately aiming to promote sustained recovery and improve overall quality of life for individuals affected by PTSD.

Disclosure statement

De Jongh receives income from published books on EMDR therapy and from the training of postdoctoral professionals using this method. The other authors have no conflicts of interest to declare.

Ethical standard statement and patient consent statement

All the participants provided written informed consent. Ethical exemption from the research protocol was obtained from the Medical Ethics Review Committee of the VU University Medical Centre (registered with the US Office for Human Research Protection [OHRP] as IRB00002991, FWA number FWA00017598).

Data availability statement

The data that support the findings of this study are not publicly available because of privacy restrictions, but are available from the corresponding author upon reasonable request.

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References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Publishing.

Benfer, N., & Litz, B. T. (2023). Assessing and addressing functioning and quality of life in PTSD. *Current Treatment Options in Psychiatry*, *10*(1), 1–20. https://doi.org/10.1007/s40501-023-00284-8

Boeschoten, M. A., Bakker, A., Jongedijk, R. A., Van Minnen, A., Elzinga, B. M., Rademaker, A. R., & Olff, M. (2014). *Clinician administered PTSD scale for DSM-5–Dutch version*. Arq Psychotrauma Expert Groep.

Boeschoten, M. A., Van der Aa, N., Bakker, A., Ter Heide, F. J. J., Hoofwijk, M. C., Jongedijk, , R. A., Van Minnen, A., Elzinga, B. M., & Olff, M. (2018). Development and evaluation of the Dutch Clinician-Administered PTSD Scale for DSM-5 (CAPS-5). *European Journal of Psychotraumatology*, *9*(1), 1546085. https://doi.org/10.1080/20008198.2018.1546085

Bryant, R. A., McFarlane, A. C., Silove, D., O'Donnell, M. L., Forbes, D., & Creamer, M. (2023). The lingering impact of resolved PTSD on subsequent functioning. *Focus*, *21*(3), 290–295. https://doi.org/10.1176/appi.focus.2302101

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Erlbaum.

Craske, M. G., Treanor, M., Conway, C. C., Zbozinek, T., & Vervliet, B. (2014). Maximizing exposure therapy: An inhibitory learning approach. *Behaviour Research and Therapy*, *58*, 10–23. https://doi.org/10.1016/j.brat.2014.04.006

De Jongh, A. J. C. M., & Ten Broeke, E. (2019). *Handboek EMDR: Een geprotocolleerde behandelmethode voor de gevolgen van psychotrauma*. Pearson Assessment and Information.

Ehlers, A., Hackmann, A., Grey, N., Wild, J., Liness, S., Albert, I., Deale, A., Stott, R., & Clark, D. M. (2014). A randomized controlled trial of 7-day intensive and standard weekly cognitive therapy for PTSD and emotion-focused supportive therapy. *American Journal of Psychiatry*, *171*(3), 294–304. https://doi.org/10.1176/appi.ajp.2013.1304552

Foa, E. B., Hembree, E. A., & Rothbaum, B. O. (2007). *Prolonged exposure therapy for PTSD: Emotional processing of traumatic experiences: Therapist guide*. Oxford University Press. https://doi.org/10.1093/med:psych/9780195308501.001.0001.

Gross, G. M., Spiller, T. R., Ben-Zion, Z., Rubenstein, A., Pietrzak, R. H., Duek, O., Hoff, R., & Harpaz-Rotem, I. (2024). Unraveling PTSD: Symptom cluster change during and 1 year after veterans' residential PTSD treatment. *Psychological Trauma: Theory, Research, Practice, and Policy*, *16*(5), 889–899. doi.org/10.1037tra0001734

Hendriks, L., de Kleine, R. A., Broekman, T. G., Hendriks, G.-J., & van Minnen, A. (2018). Intensive prolonged exposure therapy for chronic PTSD patients following multiple trauma and multiple treatment attempts. *European Journal of Psychotraumatology*, *9*(1), 1425574. https://doi.org/10.1080/20008198.2018.1425574

Hoppen, T. H., Kip, A., & Morina, N. (2023). Are psychological interventions for adult PTSD more efficacious and acceptable when treatment is delivered in higher frequency? A meta-analysis of randomized controlled trials. *Journal of Anxiety Disorders*, *95*(1), 102684. https://doi.org/10.1016/j.janxdis.2023.102684

Hurley, E. C. (2018). Effective treatment of veterans with PTSD: Comparison between intensive daily and weekly EMDR approaches. *Frontiers in Psychology*, *9*, 1458. https://doi.org/10.3389/fpsyg.2018.01458

Klaeth, J. R., Jensen, A. G., Auren, T. J. B., & Solem, S. (2024). 12-month follow-up of intensive outpatient treatment for PTSD combining prolonged exposure therapy, EMDR and physical activity. *BMC Psychiatry*, *24*(1), 225. https://doi.org/10.1186/s12888-024-05893-7

Kline, A. C., McCabe, C. T., Campbell, J. S., & Walter, K. H. (2024). Residual posttraumatic stress disorder and depression symptoms following a residential posttraumatic stress disorder treatment program for US active duty service members. *Psychological Trauma: Theory, Research, Practice, and Policy*, *16*(S1), S502–S510. https://doi.org/10.1037/tra0001621

Kline, A. C., Otis, N. P., Crocker, L. D., Glassman, L. H., Hunt, W. M., & Walter, K. H. (2025). Residual symptoms following trauma-focused treatment for comorbid post-traumatic stress disorder and major depressive disorder. *Journal of Psychiatric Research*, *182*, 42–49. https://doi.org/10.1016/j.jpsychires.2025.01.010

Kolthof, K. A., Voorendonk, E. M., Van Minnen, A., & De Jongh, A. (2022). Effects of intensive trauma-focused treatment of individuals with both post-traumatic stress disorder and borderline personality disorder. *European Journal of Psychotraumatology*, *13*(2), 2143076. https://doi.org/10.1080/20008198.2022.2143076

Kovacevic, M., Haney, A. M., Sullivan, C. P., Kramer, L. B., & Chard, K. M. (2022). Four profiles of symptom change in residential cognitive processing therapy. *Journal of Anxiety Disorders*, *90*, 102585. https://doi.org/10.1016/j.janxdis.2022.102585

Larsen, S. E., Fleming, C. J., & Resick, P. A. (2019). Residual symptoms following empirically supported treatment for PTSD. *Psychological Trauma: Theory, Research, Practice, and Policy*, *11*(2), 207–215. https://doi.org/10.1037/tra0000384

Levi, O., Ben Yehuda, A., Pine, D. S., & Bar-Haim, Y. (2022). A sobering look at treatment effectiveness of military-related posttraumatic stress disorder. *Clinical Psychological Science*, *10*(4), 690–699. https://doi.org/10.1177/21677026211051314

Logie, R. D. J., & De Jongh, A. (2014). The "Flashforward procedure": Confronting the catastrophe. *Journal of EMDR Practice and Research*, *8*(1), 25–32. https://doi.org/10.1891/1933-3196.8.1.25

Matthijssen, S. J., Brouwers, T., van Roozendaal, C., Vuister, T., & de Jongh, A. (2021). The effect of EMDR versus EMDR 2.0 on emotionality and vividness of aversive memories in a non-clinical sample. *European Journal of Psychotraumatology*, *12*(1), 1956793. https://doi.org/10.1080/20008198.2021.1956793

Morina, N., Wicherts, J. M., Lobbrecht, J., & Priebe, S. (2014). Remission from post-traumatic stress disorder in adults: A systematic review and meta-analysis of long term outcome studies. *Clinical Psychology Review*, *34*(3), 249–255. https://doi.org/10.1016/j.cpr.2014.03.002

Murphy, D., Ross, J., Ashwick, R., Armour, C., & Busuttil, W. (2017). Exploring optimum cut-off scores to screen for probable posttraumatic stress disorder within a sample of UK treatment-seeking veterans. *European Journal of Psychotraumatology*, *8*(1), 1398001. https://doi.org/10.1080/20008198.2017.1398001

Overbeek, T., Schruers, K., & Griez, E. (1999). *MINI: Mini International Neuropsychiatric Interview, Dutch version 5.0 (DSM-IV)*. Internal Publication University of Maastricht.

Rodriguez, P., Holowka, D. W., & Marx, B. P. (2012). Assessment of posttraumatic stress disorder-related functional impairment: A review. *Journal of Rehabilitation Research & Development*, *49*(5), 649. https://doi.org/10.1682/JRRD.2011.09.0162

Schnurr, P. P., & Lunney, C. A. (2015). Differential effects of prolonged exposure on posttraumatic stress disorder symptoms in female veterans. *Journal of Consulting and Clinical Psychology*, *83*(6), 1154–1160. https://doi.org/10.1037/ccp0000031

Schnurr, P. P., & Lunney, C. A. (2019). Residual symptoms following prolonged exposure and present-centered therapy for PTSD in female veterans and soldiers. *Depression and Anxiety*, *36*(2), 162–169. https://doi.org/10.1002/da.22871

Semmlinger, V., Leithner, C., Klöck, L. M., Ranftl, L., Ehring, T., & Schreckenbach, M. (2024). Prevalence and Predictors of Nonresponse to Psychological Treatment for PTSD: A meta-analysis. *Depression and Anxiety*, *2024*(1), 9899034. https://doi.org/10.1155/2024/9899034

Shapiro, F. (2018). *Eye movement desensitization and reprocessing (EMDR) therapy: Basic principles, protocols, and procedures* (3rd ed.). The Guilford Press.

Sheehan, D. V., Lecrubier, Y., Sheehan, K. H., Amorim, P., Janavs, J., Weiller, E., Hergueta, T., Baker, R., & Dunbar, G. C. (1998). The Mini-International Neuropsychiatric Interview (MINI): the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *Journal of Clinical Psychiatry*, *59*(20), 22–33.

Smid, G. E., van der Meer, C. A. I., Olff, M., & Nijdam, M. J. (2018). Predictors of outcome and residual symptoms following trauma-focused psychotherapy in police officers with posttraumatic stress disorder. *Journal of Traumatic Stress*, *31*(5), 764–774. https://doi.org/10.1002/jts.22328

Springer, K. S., Levy, H. C., & Tolin, D. F. (2018). Remission in CBT for adult anxiety disorders: A meta-analysis. *Clinical Psychology Review*, *61*, 1–8. https://doi.org/10.1016/j.cpr.2018.03.002

Van Minnen, A., Hendriks, L., Kleine, R. D., Hendriks, G. J., Verhagen, M., & De Jongh, A. (2018). Therapist rotation: A novel approach for implementation of trauma-focused-treatment in post-traumatic stress disorder. *European Journal of Psychotraumatology*, *9*(1), 1492836. https://doi.org/10.1080/20008198.2018.1492836

Van Toorenburg, M. M., Sanches, S. A., Linders, B., Rozendaal, L., Voorendonk, E. M., Van Minnen, A., & De Jongh, A. (2020). Do emotion regulation difficulties affect outcome of intensive trauma-focused treatment of patients with severe PTSD? *European Journal of Psychotraumatology*, *11*(1), 1724417. https://doi.org/10.1080/20008198.2020.1724417

Van Woudenberg, C., Voorendonk, E. M., Bongaerts, H., Zoet, H. A., Verhagen, M., Lee, C. W., Van Minnen, A., & De Jongh, A. (2018). Effectiveness of an intensive treatment programme combining prolonged exposure and eye movement desensitization and reprocessing for severe post-traumatic stress disorder. *European Journal of Psychotraumatology*, *9*(1), 1487225. https://doi.org/10.1080/20008198.2018.1487225

Varker, T., Brand, R. M., Ward, J., Terhaag, S., & Phelps, A. (2020). Efficacy of synchronous telepsychology interventions for people with anxiety, depression, posttraumatic stress disorder, and adjustment disorder: A rapid evidence assessment. *Psychological Services*, *17*(4), 456–469. https://doi.org/10.1037/ser0000366

Voorendonk, E. M., De Jongh, A., Rozendaal, L., & Van Minnen, A. (2020). Trauma-focused treatment outcome for complex PTSD patients: Results of an intensive treatment programme. *European Journal of Psychotraumatology*, *11*(1), 1783955. https://doi.org/10.1080/20008198.2020.1783955

Voorendonk, E. M., Sanches, S. A., Tollenaar, M. S., Hoogendoorn, E. A., de Jongh, A., & van Minnen, A. (2023). Adding physical activity to intensive trauma-focused treatment for post-traumatic stress disorder: Results of a randomized controlled trial. *Frontiers in Psychology*, *14*, 1215250. https://doi.org/10.3389/fpsyg.2023.1215250

Wagenmans, A., Van Minnen, A., Sleijpen, M., & De Jongh, A. (2018). The impact of childhood sexual abuse on the outcome of intensive trauma-focused treatment for PTSD. *European Journal of Psychotraumatology*, *9*(1), 1430962. https://doi.org/10.1080/20008198.2018.1430962

Weathers, F. W., Blake, D. D., Schnurr, P. P., Kaloupek, D. G., Marx, B. P., & Keane, T. M. (2013). *The Clinician-Administered PTSD Scale for DSM-5 (CAPS-5)*. [Assessment] www.ptsd.va.gov.

Wesner, A. C., Gomes, J. B., Detzel, T., Guimarães, L. S. P., & Heldt, E. (2014). Booster sessions after cognitive-behavioural group therapy for panic disorder: Impact on resilience, coping, and quality of life. *Behavioural and Cognitive Psychotherapy*, *43*(5), 513–525. https://doi.org/10.1017/S1352465814000289

Yasinski, C. W., Watkins, L. E., Maples-Keller, J. L., Ragsdale, K. A., Sherrill, A. M., Burton, M. S., Rauch, S. A. M., & Rothbaum, B. O. (2022). Long-term effectiveness of a prolonged exposure-based intensive outpatient program for veterans with posttraumatic stress disorder. *Journal of Psychiatric Research*, *152*, 313–320. doi:10.1016/j.jpsychires.2022.06.029

Yunitri, N., Chu, H., Kang, X. L., Wiratama, B. S., Lee, T. Y., Chang, L. F., Liu, D., Kustanti, C. Y., Chiang, K., Chen, R., Tseng, P., & Chou, K. R. (2023). Comparative effectiveness of psychotherapies in adults with posttraumatic stress disorder: A network meta-analysis of randomised controlled trials. *Psychological Medicine*, *53*(13), 6376–6388. https://doi.org/10.1017/S0033291722003737

Zayfert, C., & DeViva, J. C. (2004). Residual insomnia following cognitive behavioral therapy for PTSD. *Journal of Traumatic Stress: Official Publication of the International Society for Traumatic Stress Studies*, *17*(1), 69–73. https://doi.org/10.1023/B:JOTS.0000014679.31799.e7

Zoet, H. A., de Jongh, A., & van Minnen, A. (2021). Somatoform dissociative symptoms have no impact on the outcome of trauma-focused treatment for severe PTSD. *Journal of Clinical Medicine*, *10*(8), 1553. https://doi.org/10.3390/jcm10081553