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To cite this article: Renée Beer, Maïke Garbade, Anna Keßler, Anna Rita Verardo, Peter Niederhuber, Olga Uralova, Cedric Sachser & Elisa Pfeiffer (2026) Evaluation of the effectiveness of EMDR therapy for children and adolescents in Ukraine during war, European Journal of Psychotraumatology, 17:1, 2713259, DOI: [10.1080/20008066.2026.2713259](https://doi.org/10.1080/20008066.2026.2713259)

To link to this article: <https://doi.org/10.1080/20008066.2026.2713259>



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BASIC RESEARCH ARTICLE



Evaluation of the effectiveness of EMDR therapy for children and adolescents in Ukraine during war

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ABSTRACT

Background: In Ukraine, an entire generation of children is directly or indirectly affected by chronic exposure to potentially traumatic events due to the ongoing war, and many children may develop trauma-related disorders including posttraumatic stress disorder (PTSD). Eye Movement Desensitization and Reprocessing (EMDR) therapy was implemented for therapists treating children and adolescents in Ukraine. The aim of this study was to investigate the effectiveness of this evidence-based treatment for children and adolescents living amid ongoing war.

Objective: The aim of this study was to evaluate the effectiveness of EMDR therapy for children and adolescents living under ongoing war conditions in Ukraine.

Methods: EMDR for Children and Adolescents (C&A) is implemented in Ukraine by EMDR C&A trainers from three European countries (the Netherlands, Germany, and Italy), who trained Ukrainian therapists. Outcome data from $N = 151$ children and adolescents (62.9% female, $M = 10.87$ years; $SD = 4.34$, range 1–17) treated by $n = 32$ therapists have been analysed. Children and parents completed the CATS-2 to measure self- and caregiver-reported symptoms of PTSD before and after treatment. The data collection period occurred from June 2023 to January 2025.

Results: At the end of treatment, the patients reported significant reductions in PTSD symptoms, with large pre-post effect sizes for DSM-5 PTSD ($d_{\text{self-report}} = 1.83$; $d_{\text{caregiver report}} = 1.93$), ICD-11 PTSD ($d_{\text{self-report}} = 1.62$; $d_{\text{caregiver report}} = 1.57$), ICD-11 CPTSD ($d_{\text{self-report}} = 1.63$; $d_{\text{caregiver report}} = 1.74$), and DSM-5 pre-school PTSD ($d = 1.72$).

Conclusion: Despite the methodological limitations of this study, the results suggest that EMDR can be delivered effectively to children and adolescents in regions impacted by ongoing war. Future studies should replicate these findings and evaluate the effects of EMDR during war conditions using a randomised controlled design.

Evaluación de la eficacia de la terapia EMDR en niños y adolescentes de Ucrania durante la guerra

Antecedentes: En Ucrania, toda una generación de niños se ve afectada, directa o indirectamente, por la exposición crónica a acontecimientos potencialmente traumáticos debido a la guerra en curso, y muchos niños pueden desarrollar trastornos relacionados con el trauma, incluido el trastorno por estrés postraumático (TEPT). La desensibilización y reprocesamiento por movimientos oculares (EMDR) se puso en práctica entre los terapeutas que tratan a niños y adolescentes en Ucrania. El objetivo de este estudio fue investigar la eficacia de este tratamiento basado en la evidencia para niños y adolescentes que viven en medio de una guerra en curso.

Objetivo: El objetivo de este estudio fue evaluar la eficacia de la terapia EMDR en niños y adolescentes que viven en condiciones de guerra en Ucrania.

Métodos: La terapia EMDR para niños y adolescentes (C&A, por sus siglas en inglés) se aplica en Ucrania por formadores de EMDR C&A procedentes de tres países europeos (Países Bajos, Alemania e Italia), quienes capacitaron a terapeutas ucranianos. Se analizaron los datos de resultados de $N = 151$ niños y adolescentes (62,9% mujeres, $M = 10,87$ años; $DE = 4,34$, rango 1–17) tratados por $n = 32$ terapeutas. Tanto los niños como los padres completaron el CATS-2 para evaluar los síntomas del TEPT, según lo informado por ellos mismos y por los cuidadores, antes y después del tratamiento. El periodo de recopilación de datos abarcó desde junio de 2023 hasta enero de 2025.

ARTICLE HISTORY

Received 26 March 2026

Revised 21 July 2026

Accepted 28 July 2026

KEYWORDS

EMDR; children; war; trauma-focused treatment; Ukraine

PALABRAS CLAVE

EMDR; niños; guerra; tratamiento centrado en el trauma; basado en la evidencia; Ucrania

HIGHLIGHTS

- This study suggests that Eye Movement Desensitization and Reprocessing therapy can significantly reduce trauma-related symptoms in children and adolescents living amid the ongoing war in Ukraine.
- The research provides promising preliminary indications that evidence-based psychological interventions may help reduce PTSD symptoms during ongoing conflict, though controlled studies are needed to establish their efficacy in such settings.
- The findings underscore the urgent need for accessible trauma-focused mental health care for young people affected by war and humanitarian crises.

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 Supplemental data for this article can be accessed online at <https://doi.org/10.1080/20008066.2026.2713259>.

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Resultados: Los pacientes refirieron mejoras significativas en los síntomas del TEPT al finalizar el tratamiento, con efectos de gran magnitud entre la evaluación previa y la posterior para el TEPT según el DSM-5 (d en la autoevaluación = 1,83; d según el informe de los cuidadores = 1,93), el TEPT según la CIE-11 (d según el autoinforme = 1,62; d según el informe de los cuidadores = 1,57), el TEPT complejo según la CIE-11 (d según el autoinforme = 1,63; d según el informe de los cuidadores = 1,74) y el TEPT en edad preescolar según el DSM-5 (d = 1,72). Conclusión: A pesar de las limitaciones metodológicas de este estudio, los resultados sugieren que la EMDR puede aplicarse de forma eficaz a niños y adolescentes en regiones afectadas por una guerra en curso. Los estudios futuros deberían replicar estos hallazgos y evaluar los efectos de la EMDR en condiciones de guerra utilizando un diseño controlado aleatorizado.

Abbreviations: CPTSD: Complex Posttraumatic Stress Disorder; CPTSS: Complex Posttraumatic Stress Symptoms; C&A: Children & Adolescents; CATS-2: Child and Adolescent Trauma Screen – Version 2; EBTs: Evidence-Based Treatments; EMDR: Eye Movement Desensitization and Reprocessing; PFA: Psychological First Aid; PTEs: Potentially Traumatic Events; PTSD: Posttraumatic Stress Disorder; PTSS: Posttraumatic Stress Symptoms; REML: Restricted Maximum Likelihood; TF-CBT: Trauma-Focused Cognitive Behavioral Therapy

1. Introduction

The war in eastern Ukraine has been ongoing since 2014, long before Russia's full-scale aggression began in February 2022. Many Ukrainian children have never experienced life without war, and the impact of war and forced displacement on children's mental health is profound. Research by Attanayake et al. (2009), which synthesised data from a sample of approximately 8000 minors, suggests a significantly higher prevalence of mental health disorders in children exposed to such environments than in the general population. Furthermore, the structural degradation of infrastructure inherent in war and conflict zones severely compromises the accessibility and efficacy of healthcare systems, particularly specialised mental health services (Danese et al., 2025; UNICEF, 2024).

Not all children exposed to potentially traumatic events (PTEs) develop trauma-related mental health conditions. In the general population – not living in war zones –, only a small percentage (16%) develops post-traumatic stress disorder (PTSD) after PTE exposure, with rates varying by gender and type of event (Alisic et al., 2014). A more recent meta-analysis reports PTSD rates between 12% under DSM-5 criteria and 20% under DSM-IV criteria (Visser et al., 2025). In both meta-analyses, PTSD appears to be significantly more common in girls than in boys, and is more often associated with interpersonal trauma than with non-interpersonal trauma (Alisic et al., 2014; Visser et al., 2025). However, specific data on the effects of conflict and war on child development remain unclear (Kadir et al., 2019). Nonetheless, studies show a higher prevalence of PTSD, depression, and anxiety disorders among children during and post-conflict as compared with the general population (Qeshta et al., 2019). In the long run, childhood psychological trauma as a transdiagnostic factor triples the risk of mental disorders such as depression, anxiety, bipolar disorder, psychosis, or personality

disorders in adulthood (Hogg et al., 2023). Therefore, it is urgent to provide evidence-based treatment to children in need to prevent greater suffering in individuals and families, as well as higher costs for mental and physical health that society will face when these children become adults.

Beyond the risk of developing mental health conditions, children in these circumstances are deprived of developmental opportunities and basic resources. Therefore, psychological and psychosocial interventions for war-affected children should be multileveled, specifically tailored to the child's needs, trauma-informed, and strength- and resilience-oriented (Bürgin et al., 2022). Many children can overcome trauma-related problems without professional interventions, but others need some form of intervention to do so (Beer & De Roos, 2026). The Inter-Agency Standing Committee (IASC, 2007) proposed a multilevel intervention pyramid, outlining four levels of support for mental health and psychosocial needs in emergencies, differentiating between levels of need, including 1. the provision of essential (basic) services and security, 2. community and family support, 3. focused non-specialised support, and 4. specialised support. Within this multilevel intervention pyramid, evidence-based, trauma-focused treatments such as Trauma-Focused Cognitive Behavioral Therapy (TF-CBT), developed by Cohen et al. (2016), and Eye Movement Desensitization and Reprocessing (EMDR), developed by Shapiro (2018), can be categorised as specialised support. Both treatments are recommended in international guidelines as evidence-based options for children and adolescents with PTSD (ISTSS, 2019; NICE, 2018; WHO, 2013).

Treatments for PTSD are based on conceptualising PTSD as a consequence of *past* events; a sense of *current threat* persists, even though the threat was in the past. However, for people who are exposed to continuous actual or threatened traumatic events, the sense of current threat is functional and adaptive for survival.

Since it may be relevant to differentiate between past, current, and ongoing events to better understand the effectiveness of interventions, Yim et al. (2024) conducted a systematic review of the effectiveness and feasibility of psychological interventions for populations living in conditions of ongoing threat. The overall conclusion of the review is that psychological interventions for trauma-affected people living in ongoing stress are feasible and most likely beneficial.

This review included four studies on the effectiveness of various CBT interventions for children exposed to traumatic events living in conditions of ongoing socio-political conflict and organised violence (Barron et al., 2013, 2016; Dawson et al., 2018; Thabet et al., 2005) and one case series (Zaghrou-Hodali et al., 2008) on EMDR in a group setting. Regrettably, the findings of these studies have limited value due to methodological shortcomings. While there is preliminary evidence for the effectiveness of TF-CBT in reducing PTSD symptoms among children during the war in Ukraine (Pfeiffer et al., 2025), no study to date has examined the effectiveness of individual EMDR therapy for these children and adolescents.

1.1. Aim of this study

Therefore, this study aims to evaluate the potential effectiveness of individual EMDR therapy for children and adolescents who are exposed to ongoing potentially traumatic events in Ukraine.

2. Methods

Pfeiffer et al. (2023, 2025) launched the ‘TF-CBT Ukraine’ project in 2022; the ‘EMDR Ukraine’ project started in 2023 and used similar evaluation strategies. Both projects aim to examine whether evidence-based trauma-focused treatments (EBTs) can also be effective for children living in *ongoing* conditions of threat, danger, violence, and loss. This project comprises outcome data from children treated by therapists who had attended the regular EMDR C&A training programme, provided by certified EMDR C&A trainers from three European countries to Ukrainian therapists during the large-scale invasion. Data were collected between June 2023 and January 2025. This longitudinal pre-post, uncontrolled, non-blinded treatment study received positive IRB approval from Zhytomyr Ivan Franko State University in Ukraine (Number: 01-07032023). All therapists gave their written informed consent prior to study inclusion.

2.1. Recruitment and participants

The Ukrainian therapists who had attended any of these EMDR C&A trainings were invited to share outcome data of their patients with the scientific evaluation team at Ulm

University and the Catholic University of Eichstätt-Ingolstadt. The participating children had been referred to the therapists in their regular work settings. There were no special procedures for recruiting children. There were no specific inclusion or exclusion criteria for patients.

2.2. Treatment

EMDR therapy is an individual-oriented approach that addresses problems stemming from disturbing memories of adverse or traumatic experiences (cf. Laliotis et al., 2021; Shapiro, 2018). It is based on the theory of Adaptive Information Processing, which holds that current problems (symptoms) arise from distressing memories that have not been adequately processed. Symptoms are expected to decrease or even resolve when these memories are reprocessed adaptively (Shapiro, 2018). The process involves activating relevant memories, that is, mental representations of events, and then engaging the client in a distracting task, usually with an external stimulus, such as following back-and-forth moving fingers with the eyes, thereby initiating dual attention. For children who cannot (yet) make eye movements, alternative tasks or stimulation are used, such as tactile stimulation. Protocolised procedures are required to optimise standardised application worldwide, thus increasing the ability to disseminate the treatment and test its effectiveness through scientific research (De Jongh et al., 2024). To this end, the EMDR standard protocol has been developed. For children at various developmental stages, adaptations are required to facilitate effective application; children with preverbal trauma are treated with the EMDR storytelling method (Beer & De Roos, 2026). The effectiveness of EMDR using the standard protocol for adults, adolescents, and children with PTSD has been tested in over 30 RCTs (De Jongh et al., 2024).

2.3. EMDR training pathway

The pathway leading to accreditation as an EMDR Europe C&A Practitioner varies across European countries. In some countries, therapists may start only after being accredited as an EMDR Europe Practitioner; in others, they may start earlier, after completing part of this pathway. The level of experience with EMDR among the trainees varied. Some had only recently started working with EMDR, while others already had extensive experience. All therapists were invited to participate in consultation groups after their training. Consultation was provided by consultants from the same country as the trainer to align with the training content. Consultation is usually competence-based, meaning that therapists must demonstrate their competency in correctly applying the elements of EMDR therapy as taught in their training, using video fragments. This approach assesses

therapists' adherence to treatment. To evaluate the required competency, consultants use a European competency-based framework (<https://www.emdr-europe.org/get-accredited>). Additionally, therapists can ask questions about their cases.

2.4. Measures

All measures had previously been translated into Ukrainian and Russian for the TF-CBT Ukraine project (Pfeiffer et al., 2023). Data were collected via paper-and-pencil questionnaires, completed by the child and caregiver (pre- and post-treatment), and subsequently entered by therapists into an anonymised online survey.

2.4.1. Patient assessment

Potentially traumatic events (PTEs) and posttraumatic stress symptoms (PTSS) according to DSM-5 and ICD-11 criteria for children and adolescents from 7 to 21 years were assessed using the self- and caregiver versions of the *Child and Adolescent Trauma Screen Second Version* (CATS-2; Sachser et al., 2022). First, a 15-item PTE checklist assessed PTE exposure (0 = no, 1 = yes). Subsequently, 25 items assessed PTSS over the past 4 weeks (0 = Never, 1 = Sometimes, 2 = Often, 3 = Almost Always). Sum scores for the DSM-5 PTSD severity score (range 0–60), the ICD-11 PTSD severity score (range 0–18), and the ICD-11 complex posttraumatic stress disorder (CPTSD) severity score (range 0–36) were calculated according to Sachser et al. (2022). In the current study, the reliability of the self-report ranged from acceptable to excellent ($\alpha_{\text{DSM-5 PTSD}} = .91$, $\alpha_{\text{ICD-11 PTSD}} = .71$, $\alpha_{\text{ICD-11 CPTSD}} = .83$). For the parallel caregiver version, reliability ranged from moderate to excellent ($\alpha_{\text{DSM-5 PTSD}} = .90$, $\alpha_{\text{ICD-11 PTSD}} = .68$, $\alpha_{\text{ICD-11 CPTSD}} = .79$).

For children younger than 7 years of age, the CATS preschool version (Sachser et al., 2017) was used to assess PTEs and PTSS via caregiver report. First, PTEs were assessed using a 15-item PTE checklist (0 = no, 1 = yes). This was followed by a 16-item symptom checklist, assessing symptom frequency over the past two weeks (0 = Never, 1 = Sometimes, 2 = Often, 3 = Almost Always). A sum score for the DSM-5 PTSD severity score (range 0–48) was calculated. In the current study, the measure exhibited excellent reliability ($\alpha = .90$).

Socio-demographic information, such as age, gender, and current location, was collected using a standardised questionnaire.

2.5. Statistical analyses

2.5.1. Patient outcomes

As recommended by Sachser et al. (2022), to assess PTSD/CPTSD severity scores in children and

adolescents aged 7 years or older, items 1–20 (range 0–60) of the symptom checklist were summed to calculate the DSM-5 severity score, including only the highest score of items 9, 10, and 15. The ICD-11 PTSD severity score (range 0–18) was calculated by summing items 2, 3, 6, 7, 17, and 18. The ICD-11 CPTSD score (range 0–36) is the sum of the ICD-11 PTSD severity score plus the sum of the ICD-11 Disturbances in self-organisation severity score (9b, 9d, 10a, 13, 14, 15a). For preschool children, the PTSD-severity score was calculated by summing the items on the CATS (range 0–48).

Following intention-to-treat (ITT) principles, the primary analyses included all patients who underwent pre-treatment CATS-2 screening, regardless of drop-out, treatment dose, or missing post-treatment data.

For all CATS-2 outcomes (DSM-5 and ICD-11) and self vs. caregiver reports, mixed-effects models were fitted, including fixed effects for time and for the covariates trauma load at pre-treatment, age, gender, and child location (inside Ukraine vs. other countries), as well as the time $\times$ gender, time $\times$ age, and time $\times$ location interactions. Mixed-effects models can handle missing data under the missing-at-random assumption. Parameters were estimated using the restricted maximum likelihood (REML) method. Repeated measures data were modelled using an unstructured covariance matrix, based on the comparison of likelihood-based model fit criteria (AIC and BIC).

Effect sizes (Cohen's d) were calculated from the model-derived t values of the pairwise comparisons by transforming them into d for dependent samples, following Feingold (2009). The calculation was based on the estimated marginal means from the linear mixed model. Using a linear mixed model with REML estimation, all available data were included in parameter estimation, so participants with incomplete measurement time points were retained in the analyses. Positive Cohen's d values indicate symptom reduction because effect sizes were calculated based on the difference between baseline and post-treatment scores (baseline minus post-treatment).

Given the longitudinal design of the study, data were nested within participants and therapists. For children and adolescents aged 7 years or older, all models fit better when nesting for both parameters. For preschool children, the model with two random effects did not converge. Therefore, this model was nested only within therapists, as this produced a better fit than a model nested only within patients.

Data analyses were conducted using IBM Statistics, Version 29.0. All tests were two-tailed, and an alpha level of $p < .05$ was used. To profile the sociodemographics, descriptive statistics (means, standard deviations, ranges, and frequencies) were computed.

3. Results

3.1. Study sample

A total of $N = 208$ patients were submitted by the participating therapists ($N = 33$). Because a single therapist treated a large number of patients ($n = 57$), these data were examined in greater detail and compared with those of all other patients. The results showed that all post-CATS-2 scores for these patients were zero. Because of this irregularity, these data were excluded from the analysis, as their validity is questionable. The remaining therapists ($N = 32$) treated between 1 and 12 patients with EMDR therapy ($M = 4.72$, $SD = 2.50$). The final patient sample (who completed pre-treatment assessment) thus comprised $N = 151$ children, adolescents, and young adults (62.9% female), with a mean age of 10.78 years ($SD = 4.34$, range 1–17). Of those, $n = 32$ (21.2%) were preschool age (1–6 years), and $n = 119$ (78.8%) were 7 years or older. At baseline, $n = 109$ (72.2%) were still located in Ukraine (See Table 1). The other patients were residing in 12 different countries, primarily in Europe. The most common countries were Poland ($n = 11$, 7.3%), Germany ($n = 9$, 6.0%), and Canada ($n = 5$, 3.3%).

For the 7+ years sample, 8.4% [10 of 119] of the data were missing at post-treatment, and for the preschool sample, 3.1% [1 of 32]. Participants with or without missing data did not differ significantly in baseline characteristics, including gender, trauma load, and CATS-2/CATS pre-treatment scores. Only in the 7+ sample was a significant difference in the reported number of PTEs at pre-treatment ($M_{\text{missing}} = 5.50$, $M_{\text{completed}} = 3.28$, $t(108) = -3.186$, $p = .002$) in the caregiver-reported data between patients with and without missing data at post-treatment.

3.2. Patient outcomes

Participants aged 7 years and older reported an average of 3.58 different PTEs ($SD = 2.21$, range 0–12). Table 2 shows the prevalence of traumatic experiences,

based on self- and caregiver-reports for participants aged 7 years and older. The most frequent traumatic events were 'war' ($n = 79$; 66.4%), 'bullying' ($n = 44$; 37.0%), and 'witnessing domestic violence' ($n = 39$; 32.8%). For preschool children, caregivers reported an average of 2.84 PTEs ($SD = 1.80$, range = 0–8). The most frequent traumatic events were 'war' ($n = 25$, 78.1%), 'experience of an accident/injury' ($n = 5$, 15.6%), and 'witnessing family violence' ($n = 5$, 15.6%; see Table 2).

Estimated means and standard errors of the CATS-2/CATS scores based on the linear mixed effect models are shown in Table 3. A significant main effect of time was found for all PTSD severity scores in both age groups, using self- and caregiver reports. Large pre-post effect sizes were observed for DSM-5 PTSD ($d_{\text{self-report}} = 1.83$; $d_{\text{caregiver report}} = 1.93$), ICD-11 PTSD ($d_{\text{self-report}} = 1.62$; $d_{\text{caregiver report}} = 1.57$), ICD-11 CPTSD ($d_{\text{self-report}} = 1.63$; $d_{\text{caregiver report}} = 1.74$), and DSM-5 preschool PTSD ($d = 1.72$). No significant interaction effects or effects of the control variables age, gender, and location were found. For the number of traumatic events, a significant main effect emerged for DSM-5 PTSS and ICD-11 complex posttraumatic stress symptoms (CPTSS) in self-reports of children aged 7 years and older, but not for ICD-11 PTSS, with a higher trauma load at pre-treatment associated with a higher mean level of PTSS. For patients aged 7 years and older, the therapist-level random intercept was significant in all linear mixed models (self- and caregiver report), indicating meaningful variability in outcomes between therapists (see Table 4 in the online supplement for more details).

4. Discussion

This is the first study to evaluate the outcomes of EMDR therapy for children and adolescents in Ukraine during the ongoing war. Results showed a significant reduction in PTSS/CPTSS from baseline to post-treatment across all age groups and diagnostic criteria (DSM-5 and ICD-11). This indicates that, despite the ongoing war, EMDR therapy can substantially alleviate PTSS. Although the effect sizes in the present study were smaller than those for TF-CBT (Pfeiffer et al., 2025), they remain large. Improvements were observed regardless of patients' age, gender, or location. This indicates that EMDR may be effective regardless of patients' age or gender, or whether they remain in Ukraine or reside elsewhere. Preschool children ($n = 32$), aged 0–6, benefited from treatment to a comparable extent as older children. This is an important finding, as it suggests that treatment of PTSS is also possible for young children.

Interestingly, reductions in PTSS varied across therapists, but this effect was observed only in patients aged 7 years and older. Previous research on TF-CBT

Table 1. Descriptive characteristics of the study sample at pre-treatment assessment.

	Total sample ($N = 151$)	Age 7+ ($n = 119$)	Age 0–6 ($n = 32$)
Age (M(SD))	10.78 (4.34)	12.44 (3.23)	4.62 (1.43)
Gender (female) (n %)	95 (62.9)	80 (67.2)	15 (46.9)
Current location (n %)			
Inside Ukraine	109 (72.2)	83 (69.7)	26 (81.3)
Outside Ukraine	42 (27.8)	36 (30.3)	6 (18.8)
Trauma load		3.58 (2.21) ^a	2.84 (1.80)
Change at DSM-5 PTSS	–	–23.85 (10.54) ^a	–20.81 (9.59)
Change at ICD-11 PTSS	–	–7.68 (3.84) ^a	–
Change at ICD-11 CPTSS	–	–13.81 (6.89) ^a	–

^aData based on CATS-2 self-report. Note. PTSS = posttraumatic stress symptoms; CPTSS = complex posttraumatic stress symptoms.

Table 2. Prevalence rates of reported traumatic events. Self- and caregiver report.

Traumatic event	Age 7+ Self-report (N = 119) n (%)	Age 7+ Caregiver-report (n = 110) n (%)	Age 0–6 Caregiver-report (n = 32) n (%)
Natural disaster	10 (8.4)	7 (6.4)	1 (3.1)
Accident/injury	38 (31.9)	34 (30.9)	5 (15.6)
Experiencing robbery	–	–	3 (9.4)
Experiencing family violence	29 (24.4)	28 (25.5)	3 (9.4)
Experiencing community violence	32 (26.9)	23 (20.9)	1 (3.1)
Attacked with weapon / Violent attack	3 (2.0)	3 (2.7)	2 (6.3)
Witnessing family violence	39 (32.8)	36 (32.7)	5 (15.6)
Witnessing community violence	27 (22.7)	20 (18.2)	3 (9.4)
Witnessing violent attack	–	–	8 (25.0)
Being touched on private parts	–	–	2 (6.3)
Sexual violence/abuse	15 (12.6)	8 (7.3)	4 (12.5)
Online sexual violence/abuse	6 (5.0)	3 (2.7)	–
Bullying	44 (37.0)	43 (39.1)	–
Online bullying	11 (9.2)	6 (5.5)	–
Sudden loss	21 (17.6)	20 (18.2)	4 (12.5)
Scary medical procedure	24 (20.2)	31 (28.2)	3 (9.4)
War	79 (66.4)	73 (66.4)	25 (78.1)
Other not specified event	48 (40.3)	48 (43.6)	22 (68.8)

Table 3. Estimated means and standard errors from the linear mixed-effect models.

	Estimates pre-treatment (M (SE))	Estimates post-treatment (M (SE))	Statistics	R ² _m	R ² _c
<i>Self-report (7+ age)</i>					
CATS-2 DSM-5 PTSS	33.35 (1.17)	9.50 (1.23)	$p < .001$	.65	.75
CATS-2 ICD-11 PTSS	9.91 (0.43)	2.23 (0.45)	$p < .001$	.57	.72
CATS-2 ICD-11 CPTSS	18.39 (0.79)	4.44 (0.82)	$p < .001$	.59	.72
<i>Caregiver-report (7+ age)</i>					
CATS-2 DSM-5 PTSS	32.97 (1.26)	8.52 (1.32)	$p < .001$	.64	.76
CATS-2 ICD-11 PTSS	9.07 (0.43)	1.90 (0.45)	$p < .001$	.56	.69
CATS-2 ICD-11 CPTSS	17.92 (0.78)	4.19 (0.81)	$p < .001$	.60	.72
<i>Caregiver-report (3–6 age)</i>					
CATS DSM-5 PTSS	27.87 (2.25)	6.72 (2.35)	$p < .001$	.60	.72

Note: PTSS = posttraumatic stress symptoms; CPTSS = complex posttraumatic stress symptoms.

in both Norway and Germany has shown that therapist-related variables such as gender, clinical experience, or theoretical background were not significantly associated with reductions in PTSS in children and adolescents (Pfeiffer et al., 2020). This suggests that factors beyond stable therapist characteristics may have contributed to the variability observed in the present study. Potential explanations include that contextual factors surrounding the delivery of EMDR influenced treatment outcomes. In particular, wartime conditions may have played a role, such as the level of ongoing threat exposure, whether the therapy took place in a city under active bombardment, or whether sessions were conducted online versus in person. Additionally, the degree to which the therapist adequately applied the protocol may have been influential. Such situational variables may have affected not only the therapeutic process but also patients' perceived safety and emotional engagement, thereby moderating symptom reduction. Future studies need to assess and investigate these factors more thoroughly.

Notably, participants in the present study reported fewer PTEs ($M = 3.58$ PTEs) compared to the samples in the study of Pfeiffer et al. (2025) ($M = 4.64$ PTEs) and other child and adolescent samples who received

mental health treatment in Germany ($M = 4.57$ PTEs), Norway ($M = 3.81$ PTEs), and the USA ($M = 5.26$ PTEs) (Sachser et al., 2022). War-related trauma was by far the most frequently reported PTE. This may be because a substantially larger proportion of patients, considerably more than in Pfeiffer et al. (2025), were still residing in Ukraine at the beginning of treatment, making war exposure the most acute and distressing PTE for these patients. Moreover, the CATS-2/CATS measure does not assess the frequency or intensity of PTEs, but only whether patients have experienced this type of PTE. However, the PTEs most frequently reported, war trauma, domestic violence, and bullying, were consistent with the findings of Pfeiffer et al. (2025). Thus, the results confirm that domestic violence and bullying, alongside war-related trauma, constitute common PTEs among Ukrainian children and adolescents undergoing treatment.

The non-completion/dropout rates (no post-treatment data in 8.4% of children aged 7 and older, and 3.1% of preschool children) were considerably lower than those reported in the TF-CBT Ukraine project (16.1–19.2%) (Pfeiffer et al., 2025) and other individual trauma-focused EBTs (10.6–15.5%) (Simmons et al., 2021). These low dropout rates could be interpreted as further evidence that EMDR can be feasibly

and effectively implemented during an ongoing war. However, this finding should be interpreted with caution, as several therapists might not have uploaded data for all patients, but only for those who completed treatment. Future research should further examine additional factors related to the feasibility of EMDR in conflict settings, using both quantitative and qualitative approaches.

For the overall evaluation of interventions in these conditions with recent and ongoing PTEs, other indicators beyond effectiveness are also relevant, such as cost-efficiency, acceptability, feasibility, and sustainability. Additionally, they should not cause harm. Yim et al. (2024) concluded that the interventions included in their review are feasible for populations under ongoing stress, most likely beneficial, and no evidence of harm was found.

In addition to therapies to reduce PTSS, Psychological First Aid (PFA) programmes should be available in these conditions, to promote stress reduction and to prevent trauma-related problems. Hermosilla et al. (2023) conducted a systematic review of the evidence on the efficacy of PFA interventions and concluded that the evidence is scant due to methodological shortcomings in the studies. The findings from all studies suggest that PFA positively impacts symptom reduction, stress regulation, and improved functioning. However, these findings cannot be generalised due to the methodological problems. Given the consequences of the political situation for many children worldwide, the need is urgent for building evidence on the efficacy of both PFA and treatment interventions for PTSS.

5. Limitations

Although the findings of this study are promising, we highlight several limitations that may limit their generalizability. (1) The study was conducted using an uncontrolled design due to practical and funding constraints. Therefore, we cannot conclude that EMDR is proven effective also in ongoing trauma situations. However, the literature indicates that PTSD rarely resolves without intervention once it persists longer than 6 months (Hiller et al., 2016). Given the demonstrated effectiveness of EMDR (in non-ongoing-trauma situations), as shown in 13 randomised controlled studies (Beer et al., 2023) and several meta-analyses (John-Baptiste Bastien et al., 2020; Moreno-Alcázar et al., 2017), it seems justified to recommend that future projects focus on the sustainable implementation and dissemination of EMDR in Ukraine and other countries under comparable conditions. (2) There are only pre- and post-measurements, no follow-up measures. The literature has demonstrated the importance of follow-up measures for assessing the long-term effects of treatment (Hoppen et al., 2024). (3) Regrettably, the number of EMDR

sessions has not been monitored systematically. As a result, we do not know whether the length of treatment was comparable to or different from that of children living under other conditions. (4) It is unknown whether therapists used additional interventions during the EMDR therapies included in the study. Therapists were instructed to upload data pre- and post- EMDR therapy to evaluate treatment effectiveness. Therefore, this is unlikely, although it was not explicitly checked. (5) No measures were included for comorbid disorders (such as depression or anxiety), although it is clear from the literature that PTSD is mostly paralleled by comorbid disorders (Attanayake et al., 2009; Beer & De Roos, 2026). (6) Additionally, we did not monitor how long ago the relevant event(s) took place and for how long problems existed before treatment was requested. The CATS-2 measure unfortunately only assesses whether the patient experienced the traumatic event, not its frequency, intensity, or when and where it occurred. (7) We do not know what happened to the children whose measures were not uploaded. For many therapists, uploading pre- and/or post-data was difficult for various reasons, including power outages, limited time or priority, or incomplete understanding of the instructions. Another significant factor may be that therapists were not required to upload data, whereas TF-CBT therapists were required to do so for certification. (8) A further limitation concerns missing follow-up data. Although linear mixed-effects models are robust under the assumption of missing at random (MAR), this assumption cannot be verified. If participants with poorer treatment responses were more likely to discontinue participation, treatment effects may have been overestimated. (9) With $n = 32$, the final patient sample only contained a small number of preschool-aged children. As a result, the linear mixed-effects model including random intercepts for both participants and therapists did not converge. Therefore, this model was nested within therapists only. (10) A significant random effect for the therapist variable indicates variability between therapists' treatment. Therefore, future studies should analyse therapist-specific and contextual variables (e.g. therapists' location, level of training, consultation, and experience with EMDR, as well as whether EMDR was conducted in person or online) to explore the causes of these differences. (11) A closer examination of the data from a therapist who had treated 57 cases revealed implausible values. In order to rule out any bias in the data, his cases, which accounted for around a quarter of the total, were excluded from the analysis.

6. Conclusion

This is the second study investigating PTSD symptom improvement following the implementation of an EBT

for PTSS in an ongoing conflict setting, building on the previous study on TF-CBT implementation in Ukraine (Pfeiffer et al., 2025). Although the current open-label, single-arm design does not allow conclusions about treatment efficacy or establish the intervention as evidence-based in this specific context, it provides important preliminary evidence on symptom changes and the feasibility of delivering EMDR therapy in an active conflict setting. Both treatments show promising results, given the ongoing war and the need to provide treatment under difficult conditions. The value of this project lies in strengthening the conclusions from the TF-CBT study and making them more generalisable to other EBTs in the specific context in Ukraine. To ensure long-term benefit, trauma-focused interventions, including EMDR, need to be sustainably implemented, structurally embedded, and widely disseminated across Ukraine. This is essential to ensure that as many children and adolescents as possible have access to evidence-based trauma-focused care – both during the war and in the post-war recovery period.

As demonstrated in this project, close collaboration between local and international mental health specialists is crucial to successfully delivering and scaling up evidence-based interventions in crisis settings. Continued investment in training, supervision, and infrastructure is needed to maintain treatment quality and expand reach. Accordingly, greater and sustained funding should be directed toward strengthening mental health systems, supporting workforce development, and ensuring the long-term availability of trauma-focused care for war-affected youth. Sadly, Ukraine is not the only country where children are growing up amid devastating war. Effective and efficient treatments are urgently needed for children in conflict regions facing these conditions.

Acknowledgements

We thank all collaborating partners for their contributions: the participating children, parents, and therapists; the supervisors who coached the therapists; the interpreters Olga Bleychuk, Victoria Alekseewa, and Marjana Soltys, who provided translations during training, supervision groups, and project meetings; and the EMDR Ukraine Association and Open Doors for organising the supervision groups. For their support through active engagement, we thank Isabel Fernandez and Olivier Piedfort-Marin, the previous and current presidents of the EMDR Europe Association, and Oksana Nakonechna, president of the EMDR Ukraine Association.

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CRedit: **Renée Beer**: Conceptualization, Supervision, Writing – original draft, Writing – review & editing; **Maike Garbade** and **Anna Keßler**: Data Curation, Formal Analysis, Methodology, Project Administration, Writing –

Original Draft, and Writing – Review & Editing; **Anna Rita Verardo**: Writing – original draft; **Peter Niederhuber**: Writing – original draft; **Olga Uralova**: Project administration; **Cedric Sachser**: Methodology, writing – review & editing; **Elisa Pfeiffer**: Conceptualization, Data Curation, Funding Acquisition, Methodology, Project Administration, Resources, Software, Writing – Original Draft, Writing – Review & Editing.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by the Porticus Foundation (EP and CS, grant number GR-076737).

Data availability statement

The data are available from the authors, EP and AK, at the Catholic University of Eichstätt-Ingolstadt, upon request.

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