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CLINICAL RESEARCH ARTICLE

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Role of baseline emotion dysregulation and perceived daily stress in adherence to and completion of narrative exposure therapy among forced migrants

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ABSTRACT

Background: Forced migrants are at risk of developing post-traumatic stress disorder (PTSD). Narrative exposure therapy (NET) is an empirically supported treatment for forced migrants with PTSD. However, multiple barriers can make it difficult for them to consistently engage in and complete mental health treatment. Identifying factors contributing to the feasibility of NET could enhance its treatment outcomes.

Objectives: The first aim was to examine whether baseline levels of perceived daily stress and emotion dysregulation were associated with NET completion. The second aim was to test whether these baseline measures were associated with NET adherence, while considering pretreatment PTSD symptom severity. In this study, completion was defined as having completed the full treatment protocol, while adherence was defined as the total number of attended treatment sessions relative to the total number of planned sessions.

Method: An uncontrolled observational study was conducted at an outpatient mental health clinic. Treatment-seeking forced migrants ($N = 86$, 59% identifying as women, age range 19–63 years) with PTSD were monitored while engaging in NET. Pretreatment measures were considered as indicators: a perceived stress scale, difficulties in emotion regulation scale, and a PTSD checklist. Information on NET session attendance, treatment protocol adherence, and completion was derived from medical records. Analyses were carried out using logistical and hierarchical regression analysis.

Results: First, baseline levels of perceived daily stress and emotion dysregulation were not found to be associated with NET completion rates. Secondly, baseline perceived daily stress scores were significantly associated with treatment adherence, although not when controlling for baseline PTSD symptom severity. Overall, NET adherence could not be attributed to baseline measures.

Conclusions: The lack of significant findings could be due to the limited sample size or methodological choices. Alternative factors impacting NET treatment completion and session adherence could be considered for future research.

El papel de la desregulación emocional basal y el estrés cotidiano percibido en la adherencia y la finalización de la terapia de exposición narrativa entre migrantes forzados

Antecedentes: Los migrantes forzados están en riesgo de desarrollar trastorno de estrés postraumático (TEPT). La TERAPIA DE EXPOSICIÓN NARRATIVA (NET por su sigla en inglés) es un tratamiento con respaldo empírico para migrantes forzados con TEPT. Sin embargo, múltiples barreras les impiden participar de forma constante y completar el tratamiento de salud mental. La identificación de los factores que contribuyen a la viabilidad de la NET podría mejorar los resultados del tratamiento.

Objetivos: El primer objetivo fue examinar si los niveles basales de estrés cotidiano percibidos y la desregulación emocional se asociaron con la finalización de la NET. El segundo objetivo fue evaluar si estas medidas basales se asociaban con la adherencia a la NET, considerando la gravedad de los síntomas de TEPT pretratamiento. En este estudio, la finalización se definió como haber completado el protocolo de tratamiento total, mientras que la adherencia se definió como el número total de sesiones de tratamiento a las que asistió en relación con el número total de sesiones planificadas.

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Narrative exposure therapy; forced migrants; post-traumatic stress disorder; emotion regulation; daily stressors; dropout; treatment completion

PALABRAS CLAVE

Terapia de exposición narrativa; migrantes forzados; trastorno de estrés postraumático; regulación emocional; estresores cotidianos; abandono; finalización del tratamiento

HIGHLIGHTS

- Committing to and completing trauma-focused therapy may be particularly challenging for forced migrants.
- Difficulties in emotion regulation before the start of treatment were unrelated to treatment adherence and completion.
- High daily stress before the start of treatment was also unrelated to treatment adherence and completion by forced migrants.

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Método: Se condujo un estudio observacional no controlado en una clínica de salud mental ambulatoria. Se monitoreó a migrantes forzados que buscaban tratamiento ($N = 86$, 59% identificados como mujeres, rango de edad: 19–63 años) con TEPT mientras participaban en la NET. Se consideraron como indicadores las medidas pretratamiento: la escala de estrés percibido, una escala de dificultades en la regulación emocional y una lista de chequeo para TEPT. La información sobre la asistencia a las sesiones de NET, la adherencia al protocolo de tratamiento y la finalización se obtuvo de los historiales médicos. Se realizaron análisis de regresión logística y jerárquica.

Resultados: Primero, no se encontró que los niveles basales de estrés cotidiano percibido y desregulación emocional se asociaran con las tasas de finalización de la NET. Segundo, los puntajes de estrés cotidiano percibidos se asociaron significativamente con la adherencia al tratamiento, aunque no al controlar la gravedad de los síntomas de TEPT basales. En general, la adherencia a la NET no se pudo atribuir a las medidas basales.

Conclusiones: La falta de hallazgos significativos podría deberse al tamaño limitado de la muestra o a decisiones metodológicas. Se podrían considerar otros factores que inciden en la finalización del tratamiento y la adherencia a las sesiones de NET para futuras investigaciones.

1. Introduction

Forced migrants living in high-income countries form a heterogeneous population, encompassing those seeking refuge from war and conflict and those who have been trafficked. Over the past decade, the Netherlands has seen a rapid increase in asylum applications (Asylum Information Database, 2022) in conjunction with a constant influx of identified survivors of sex trafficking (National Rapporteur on Trafficking in Human Beings and Sexual Violence against Children, 2021). Before, during, and following migration, most forced migrants face various human rights violations, through exposure to war atrocities, sexual and gender-based violence, torture, and (political) confinement (UNHCR, 2021). Moreover, forced migrants may have held various marginalized positions throughout their lives, e.g. due to their residential status, ethnicity, religion, gender identity, and/or sexual orientation (HRC, 2023; Hynie, 2018). These ongoing adversities and stressful social circumstances may exacerbate mental health problems, including post-traumatic stress disorder (PTSD) (Gleeson et al., 2020). Narrative exposure therapy (NET) is an empirically supported treatment for traumatized individuals, including forced migrants with PTSD (Siehl et al., 2021). However, for this population, multiple situational barriers prevent consistent participation in and completion of mental health treatment (Byrow et al., 2020). Identifying factors contributing to the feasibility of NET could enhance treatment outcomes (Semmlinger & Ehring, 2022) and inform the planning of the NET treatment trajectory. To inform clinical practice, the present study considered baseline perceived daily stress and emotion dysregulation as potential indicators of treatment completion and adherence among forced migrants, while considering pretreatment PTSD symptom severity.

Prevalence rates of PTSD among forced migrants are high (Patanè et al., 2022), and symptom severity

has been found to impact treatment course and outcomes (Mitchell et al., 2023). Research confirms the efficacy of NET for forced migrants, yet its feasibility in naturalistic settings has received less attention (Siehl et al., 2021). A meta-analysis on treatment discontinuation in PTSD patients showed an overall dropout rate of 18.28% on average (Imel et al., 2013). However, for both NET and forced migrants, information on dropout and adherence are largely unknown (Semmlinger & Ehring, 2022). Discontinuation of treatment before symptom reduction is problematic for various reasons. First of all, for patients themselves, dropping out of exposure treatment may aggravate symptoms, which, in turn, may elicit or increase distrust in mental health services (Semmlinger & Ehring, 2022). Secondly, in high-income countries, mental health services for forced migrants are scarce, and treatment discontinuation and non-attendance put further (financial) strain on health systems, e.g. through the costs of cancelled sessions or worsening of symptoms over time (Nowak et al., 2022). Therefore, gaining a better understanding of the number of sessions planned compared to those attended or successfully delivered according to the treatment protocol could provide valuable insight into the implementation and feasibility of NET for forced migrants.

Having arrived in the host country, forced migrants face lengthy residential procedures, uncertain living conditions, and limited social embeddedness, while not being able to provide their own livelihood (Silove et al., 2017; VluchtelingenWerk, 2021). The perceived lack of control or worries about these daily stressors can negatively impact the mental health of forced migrants, including PTSD (Gleeson et al., 2020). As suggested in previous research, daily stressors could potentially impede the course of treatment (Droždek et al., 2013; Li et al., 2016), e.g. through cancelled sessions or necessary deviations from the treatment protocol (Waller, 2009). Indeed, therapists are known to

be hesitant in initiating treatment with forced migrants (Ter Heide & Smid, 2015). However, prior research on the impact of daily stressors on the course of treatment for forced migrants is inconclusive (Bruhn et al., 2018; Djelantik et al., 2020; Kaltenbach et al., 2020). More research is needed to understand whether daily stressors affect treatment completion and adherence by forced migrants.

Emotion dysregulation is a critical phenomenon with respect to PTSD. These two constructs can co-occur and mutually reinforce and perpetuate each other over time (Seligowski et al., 2015). To engage in trauma-focused therapy, patients must be able to handle arousal caused by exposure to traumatic memories (Schauer & Elbert, 2010). For patients with emotion regulation difficulties, tolerating this arousal can be particularly challenging and may exceed their abilities (Gjerstad et al., 2024). This could result in increased avoidance, no-shows, diminished treatment outcome, and even discontinuation of treatment (Frye & Spates, 2012). As in trauma survivors more generally, it is likely that prior adversities and current social circumstances similarly impede forced migrants' ability to regulate emotions (Ehring & Quack, 2010). Furthermore, PTSD and emotion dysregulation have been found to coincide in refugee samples (Doolan et al., 2017). Although prior studies have underlined the interrelatedness of emotion dysregulation and PTSD treatment outcome (McLean & Foa, 2017), its influence on treatment completion and adherence among forced migrants is largely unknown.

The present study was part of a larger research project on processes of change in a clinical sample of forced migrants with PTSD (Ghafoerkhan et al., 2020). The overarching focus of this project was on the interplay between perceived daily stress, emotion dysregulation, and mood, and PTSD symptom severity during NET. To gain insight into factors influencing NET adherence and completion, the current study examined differences between the number of planned sessions in relation to those attended or successfully delivered according to the NET treatment protocol. More specifically, this was done by examining the role of baseline perceived daily stress and emotion dysregulation in NET adherence and completion, while accounting for baseline PTSD symptom severity.

1.1. Objective

The present study focused on treatment-seeking forced migrants living in the Netherlands. Those who were diagnosed with PTSD and engaged in NET were followed in a naturalistic clinical setting. The first aim was to examine whether baseline levels of perceived daily stress and emotion dysregulation were associated with NET completion. The second aim was to test whether baseline levels of perceived

daily stress and emotion dysregulation were associated with NET adherence, while accounting for PTSD symptom severity at baseline. While conceptualizations and operationalizations of treatment adherence differ, in this study adherence was defined as a patient's attendance of a session that took place in line with the NET treatment protocol (Schauer et al., 2011). Information about session attendance and adherence to the NET protocol was derived from session notes within patients' medical records.

2. Method

2.1. Patients and setting

This study took place at an outpatient mental health clinic in the capital region of the Netherlands. The clinic's multidisciplinary teams offer mental health services to traumatized asylum seekers, refugees, and survivors of sex trafficking. Upon referral, clinical diagnoses are established in a routine psychiatric assessment at intake. At the study site, NET was considered a first-choice treatment for patients who reported multiple traumas at intake and suffered from PTSD. All medical records are kept digitally, and session notes of each meeting are routinely entered digitally by therapists. For the purposes of this study, patients ($N = 86$) engaging in NET were followed.

Patients' sociodemographic characteristics are presented in Table 1. Patients aged ≥ 18 years, meeting all of the following criteria, were considered for inclusion: (1) forced migrant who has faced interpersonal violence, such as war, conflict, sex trafficking, or sexual orientation and gender identity and expression (SOGIE)-related violence; (2) PTSD as a primary diagnosis; (3) NET treatment indication; and (4) cognitively able to give consent to participate in the study. Patients were excluded if they: (1) had recently (< 6 months ago) completed another trauma-focused therapy; or (2) showed signs of an acute crisis, such as acute suicidality or acute severe psychosis, or suffered from persistent substance abuse. During the inclusion period, all patients meeting the inclusion and exclusion criteria were considered for participation and invited to take part in the study; no selection was made.

2.2. Design and ethical approval

The overarching observational uncontrolled study focused on mechanisms of change and the feasibility of NET (see Ghafoerkhan et al., 2020 for the study protocol). Ethical approval for the study at large was granted by the Medical Ethics Committee, Leiden The Hague Delft in the Netherlands (P17.270). The study was preregistered at the Dutch Trial register (NL61808.058.17: <https://www.toetsingonline.nl/to/>)

Table 1. Sociodemographic information of the patients at baseline.

	Completers		Non-completers		Full sample	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Gender						
Female	41	64	10	46	51	59
Region of origin						
East Africa	19	30	7	32	26	30
West Africa	16	25	6	27	22	26
Middle East	12	20	4	18	17	20
Eastern Europe	8	13	–	–	8	9
Asia	3	5	4	18	7	8
Other	5	8	1	5	6	7
Primary reasons for forced migration ^a						
Conflict/war	18	28	8	36	26	30
Sex trafficking	19	30	3	14	22	26
SOGIE-related violence	19	30	9	41	28	33
Other	17	27	6	30	23	27
Highest level of education						
Primary school	24	38	10	46	34	40
High school	14	22	4	18	18	21
Higher education	26	41	8	36	34	40
Permanent residency ^b	33	52	12	55	45	52
Steady place of residence ^c	30	50	11	50	41	48
Employed/student ^d	18	28	7	32	25	29
In a relationship	21	33	6	27	27	31
Living with children	17	27	8	36	25	29

Note: $N = 86$ ($n = 64$ completers and $n = 22$ non-completers). Participants were on average 34.8 years old ($SD = 10.8$). Participant age and gender did not differ between completers and non-completers.

^aCategories may overlap within individuals.

^bThose who held a Dutch/EU passport or permanent refugee status.

^cThose who lived in independent housing.

^dThose who either had steady employment or were full-time students.

SOGIE = sexual orientation, gender identity, and expression.

ccmo_search.nsf/fABRpop?readform&unids=D707FF3CE1AFE7D3C125881F00152BB7).

2.3. Intervention

NET is an individually delivered trauma-focused psychotherapy and, in the current study, was applied as such. NET has been found to be effective in reducing PTSD among refugees, asylum seekers, and survivors of sex trafficking (Brady et al., 2021; Siehl et al., 2021). During NET, traumatic, positive, bereavement, and offender-related experiences are integrated into a patient's life narrative by means of exposure techniques. Important elements of NET are laying out one's lifeline using symbols like a rope, stones, and flowers during the first session; in-depth narration of important (traumatic) life events; and reading back the written life narration during the final session. The NET study protocol recommends a total number of 12–16 sessions (Schauer et al., 2011). In the protocol, it is stressed that regular attendance during NET is crucial to allow for optimal processing and in-depth exposure during and between sessions. For more information, readers are referred to the NET manual (Schauer et al., 2011).

2.4. Measures

2.4.1. Treatment completion

A dichotomous variable was created such that patients who completed all elements of the NET protocol were

considered completers (1 = 'completer'), whereas all others were considered non-completers (0 = 'non-completer'). To be considered a NET completer, a patient's medical records needed to demonstrate that all elements of the NET protocol were completed (i.e. the lifeline session; several exposure sessions, including the discussion of 'stones' and 'flowers'; and the final session, during which the full narration is read aloud). To ensure a representative sample of patients engaging in NET in a naturalistic setting, all completers were considered for the study, regardless of the eventual number of sessions or treatment length.

2.4.2. Treatment adherence

The Treatment Adherence index was only calculated for patients who were considered 'completers' according to the measure 'treatment completion' described in Section 2.4.1. For these treatment completers, session notes entered in their medical records by NET therapists were used to obtain information about attendance and protocol adherence. If session notes referred to any typical NET elements, such as 'laying out the lifeline', 'exposure', 'talking about a stone/flower', or 'reading back the life narrative', the session was counted as a 'NET session'. Alternatively, if session notes lacked such terms, but instead included phrasings such as 'unable to perform exposure' or information on another urgent matter, such as 'negative outcome asylum procedure' or 'escalating conflict in home country', this was considered a 'non-

adherence' session to the NET protocol (for full scoring codes, see Supplementary Material 1). Finally, if the patient did not show up or cancelled the session at the last minute, it was coded as 'non-attendance' of the planned session. From this information, two indices were created, one being the total number of NET sessions (in line with the NET protocol) and the other being the total number of 'non-adherence' sessions (the total number of sessions that did not adhere to the NET protocol plus non-attended sessions).

Finally, an index representing the total number of true NET sessions relative to the total number of planned therapy sessions was calculated. This ratio variable was created by dividing the total number of NET sessions by the total number of planned NET sessions (i.e. the sum of the total number of NET sessions and total number of non-attended sessions) and standardizing to a scale ranging between 0 and 100, with a score of '0' indicating that none of the planned sessions successfully took place, and a score of '100' indicating that the patient attended all of the planned sessions, and these sessions took place in line with the NET treatment protocol.

This study partially took place during the coronavirus disease 2019 (COVID-19) pandemic. The pandemic and its restrictions created an unprecedented and unique situation; sessions missed owing to the pandemic and its associated regulations were therefore not included in the NET attendance variable. If session notes indicated that a session was missed owing to, for example, a 'positive COVID test', 'schools closed due to regulations', or 'need to self-isolate', this missed session was left out of any of the above-mentioned calculations. It is important to note that these sessions were rescheduled at a later time, ensuring that no elements of the NET treatment protocol were omitted as a result of COVID-19-related disruptions.

2.4.3. Perceived Stress Scale (PSS)

The PSS questionnaire measures perceived stress by assessing how unpredictable, uncontrollable, and overloading patients feel that their daily lives and stressors have been during the past month (Cohen et al., 1983). In this study, both the original English version and a back-translated Dutch version (van Eck et al., 1996) were used, or items were administered with the help of an interpreter. The scale uses 10 items scored on a five-point Likert scale, ranging from 0 = 'never' to 4 = 'very often'. The sum of the total score can range between 0 and 40, with a higher score indicating higher perceived stress. Scores between 0 and 13 are considered indicative of 'low stress', scores between 14 and 26 'moderate stress', and scores between 27 and 40 'high perceived stress'. An example item is: 'In the last month, how often have you felt confident about your ability to handle

your personal problems?' The original version of the PSS was found to have acceptable psychometric properties (Lee, 2012). No psychometric information is available for the Dutch version. In this sample, the scale had an acceptable Cronbach's alpha of $\alpha = .71$.

2.4.4. Difficulties in Emotion Regulation Scale – Short Version (DERS-18)

The DERS-18 questionnaire measures difficulties in emotion regulation using 18 items scored on a five-point Likert scale, ranging from 1 = 'almost never' to 5 = 'almost always' (Victor & Klonsky, 2016). In this study, both the original English version and a back-translated Dutch version (Neumann et al., 2010) were used, or questions were posed with the support of an interpreter. The sum of the total score can range between 18 and 90, with higher scores indicating more difficulties in emotion regulation. An example item is: 'When I'm upset, I feel ashamed with myself for feeling that way'. The DERS-18 was found to have good psychometric properties, for both the original version (Victor & Klonsky, 2016) and for the translated Dutch version (Neumann et al., 2010). In this sample, Cronbach's alpha was .78.

2.4.5. PTSD Checklist for DSM-5 (PCL-5)

The PCL-5 measures the symptom severity of PTSD over the past month using 20 items on a five-point Likert scale, ranging from 0 = 'not at all' to 4 = 'extremely'. The PCL-5 was administered without referring to a specific traumatic event. Instead, participants were instructed to consider the cumulative impact of significant or distressing experiences from their past. In this study, both the original English version and a back-translated Dutch version (Boeschoten et al., 2014a) were used, or items were administered with the support of an interpreter. The summed total symptom severity score can range between 0 and 80, with a higher score indicating a higher severity of PTSD symptoms. A cut-off score of 31–33 is suggested to be indicative of PTSD (U.S. Department of Veterans Affairs, 2022). An example item is: 'In the past month, how much were you bothered by feeling very upset when something reminded you of the stressful experience?' The original version of the PCL-5 was found to have good psychometric properties (Blevins et al., 2015), as was the translated Dutch version (Hoeboer et al., 2024). In this sample, the scale had a good Cronbach's alpha of .87.

2.4.6. Traumatic life events

Two checklists were used to assess traumatic life events: the Life Events Checklist for DSM-5 (LEC-5) and the Early Trauma Inventory Self Report – Short Form (ETI-SR-SF). Both the original English version and a back-translated Dutch version (Boeschoten et al., 2014b) were used for this study, or the support of an

interpreter was used to pose questions. The LEC-5 measures lifetime prevalence of 16 types of potentially traumatizing events, plus one open-ended response option. For the worst event, the patient is asked follow-up questions on the timing, frequency, and nature of the event. This measure is considered to have good psychometric properties (Gray et al., 2004). The ETI-SR-SF assesses potentially traumatizing events before the age of 18 years in 27 items (Bremner et al., 2007), with particular attention to childhood (sexual) abuse. The psychometric properties of this measure can be considered good (Bremner et al., 2007).

2.5. Procedure

Data collection was undertaken between February 2018 and March 2022. When patients met the inclusion criteria, their practitioner or a researcher informed them about the study. Upon willingness to participate, a pre-treatment assessment was scheduled from one week prior to the start of NET to right before the start of NET, during which informed consent was signed. Assessments were mainly carried out by the primary researchers (RG, HvH), research assistants/interns, or, in some cases, by the NET therapists themselves. Because of variations in spoken languages and reading proficiency, the administration of the measures was adapted to the patients' communication needs (e.g. using interpreters). NET was administered by 36 trained therapists, all of whom had a medical or clinical psychology background at the master's or post-master's level. Medical records were monitored by the researchers to derive information about the treatment process. All session notes were independently double-coded by trained coders, who were either bachelor's or master's level psychologists. Coders received training from the principal investigators, and any discrepancies or uncertain cases were discussed jointly until consensus was reached to ensure consistency and reliability in coding. The study partially overlapped with the COVID pandemic. During this period, for three patients less than 25% of their sessions were held online.

2.6. Statistical analyses

All participants who initiated NET were included in the analyses; because this was a single-arm observational study without random allocation, a traditional intention-to-treat framework was not applicable (McCoy, 2017). Logistic regression analysis was used to test whether baseline emotion dysregulation and perceived stress differentiated between patients who completed NET treatment and those who did not.

Multiple linear regression analysis was used to test whether the NET session adherence ratio was associated with baseline daily stress levels, emotion dysregulation, and PTSD symptom severity. To address

concerns that the original adherence index conflated missed sessions with non-NET sessions, we also decomposed adherence into two complementary indices among completers: attendance rate and NET content adherence. Attendance rate was defined as the proportion of sessions attended out of all scheduled sessions (attended + no-shows + cancellations). NET content adherence was defined as the proportion of attended sessions in which NET was delivered [$\text{NET}/(\text{NET} + \text{non-NET})$]. As a robustness check, attendance rate was recalculated using no-shows only (excluding cancellations). Because these analyses were exploratory sensitivity checks and intended to check robustness rather than formal hypothesis testing, we report effect sizes (Spearman's ρ) without p -values to avoid overemphasizing statistical significance in a modest sample.

Regression models were evaluated by testing whether individual predictors were significantly associated with the original NET session adherence ratio. Predictors were added to the model in two separate steps. Variables were transformed into standardized scores to allow for meaningful interpretation and comparison, while accounting for differences in normal distributions. Given the small sample size, only a limited number of predictors could be included in the regression models. As overlap between predictors could easily result in collinearity-related issues, the Pearson correlations were used; first, to test the bivariate relations between the predictors and the NET session adherence ratio; and, secondly, to evaluate the degree of overlap between the predictors. Statistical analyses were performed using IBM SPSS Statistics (version 27; IBM Corp., Armonk, NY, USA) and RStudio (version 2024.04.0; R Core Team, Vienna, Austria, 2025).

3. Results

In total, $N = 86$ patients were initially enrolled. The sample included 35 different countries of origin, mainly Uganda, Nigeria, Syria, and Sierra Leone (Table 1). Patients migrated for various (intersecting) reasons, e.g. needing to leave home because of violence related to SOGIE, or becoming victimized within sex trafficking networks during the journey. The LEC-5 indicated that patients had experienced an average of $M = 8.4$ ($SD = 2.6$) traumatic life events. Scores on the ETI-SR-SF further revealed that 61% of the sample had experienced childhood sexual abuse and 94% any form of childhood abuse or neglect before the age of 18 years.

Table 4 provides an overview of the main study variables. As displayed, mean PSS scores indicated a 'moderate stress' level across the sample (Cohen et al., 1983). For the DERS-18, the mean scores in this sample exceeded scores observed in patient

samples studied earlier (Fowler et al., 2014). All but one patient scored above the clinical cut-off score on the PCL-5, i.e. ≥ 33 (US Department of Veterans Affairs, 2022). In general, mean scores indicated a high PTSD symptom severity in the study sample (U.S. Department of Veterans Affairs, 2022).

3.1. Role of baseline perceived stress and emotion dysregulation in NET completion

From the $N = 86$ patients, a subset of $n = 64$ completed treatment and $n = 22$ (26%) discontinued treatment. Patients varied considerably in the number of sessions that they followed and the length of treatment (Table 2). The medical records revealed that the main reasons for NET discontinuation were: the burden was too high ($n = 7$), there were too many other daily stressors/life events ($n = 6$), the therapist was no longer able to reach the patient ($n = 2$), the patient had physical health problems ($n = 2$), and the patient did not believe in the effectiveness of the therapy ($n = 2$); for $n = 3$ reasons could not be traced back from the medical records. As seen in Table 3, logistical regression analyses revealed that both perceived daily stress and difficulties in emotion regulation did not differentiate between those who completed and those who discontinued treatment.

3.2. Role of baseline perceived stress, emotion dysregulation, and PTSD symptom severity in NET adherence

Table 2 provides insight into the number of missed NET sessions. As displayed in Table 4, for completers, on average 73% of the planned NET sessions were attended by the patient and took place in adherence with the NET treatment protocol. The main reasons for non-attendance were feeling overburdened by the therapy, worsening of psychiatric complaints, physical complaints, lack of day-care for children, changes in living facility/residential procedures, competing appointments with other service providers, or mandatory naturalization/language courses. The main reasons for NET non-adherence were that the patient was emotionally too dysregulated to initiate therapy, avoidance of the traumatic memory, or major life events or changes in housing/residential procedures that required urgent attention.

The second aim of this study was to test whether baseline levels of perceived daily stress and emotion dysregulation were indicators for NET adherence, while accounting for PTSD symptom severity at baseline. Table 4 presents the bivariate correlations between the NET adherence ratio and baseline emotion dysregulation, perceived stress, and PTSD symptom severity. The NET session adherence ratio was significantly associated with more severe daily stress and PTSD symptom severity at baseline, but not with baseline emotion dysregulation. The moderate correlations between daily stress, emotion dysregulation, and PTSD symptom severity indicated overlap between these constructs.

Table 5 presents the results of the multiple regression analysis in which the NET session adherence ratio was regressed on baseline daily stress, emotion dysregulation, and PTSD symptom severity. In the first step, baseline daily stress and emotion dysregulation accounted for 12.11% of the variance in the NET adherence ratio. Higher baseline daily stress was significantly and positively related to the NET adherence ratio. The association between baseline emotion dysregulation and the NET session adherence ratio was not significant. Because NET is targeting PTSD symptoms, and PTSD symptom severity is also likely to play a role in NET adherence, we aimed to adjust the results for baseline PTSD symptom severity. Therefore, baseline PTSD symptom severity was added to the model as a second step, accounting for an additional 2.67% of the variation in the NET session adherence ratio. As can be seen in Table 5, adding PTSD symptom severity to the model resulted in daily stress no longer being a significant predictor of the NET session adherence ratio.

When adherence was decomposed into attendance rate and NET content adherence, patterns of associations with baseline perceived stress, emotion dysregulation, and PTSD symptom severity were similar to those observed for the original adherence index. Among completers, attendance rate (including no-shows and cancellations) showed moderate variability ($M = 0.80$; range 0.51–1.00). NET content adherence ranged from 0.37 to 1.00 ($M = 0.74$). Baseline perceived stress was positively associated with NET content adherence (Spearman's $\rho = 0.31$) and attendance rate ($\rho = 0.21$), whereas baseline emotion dysregulation was unrelated to both indices ($\rho \sim 0.01$ for

Table 2. Descriptive statistics for narrative exposure therapy (NET) treatment variables.

	Completers			Non-completers		
	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range
Total number of NET sessions	18	7.22	8–42	4	5.51	0–21
Total number of non-adherent sessions	7	5.80	0–25	4	3.92	0–15
Total length of treatment (days)	211	133	68–656	119	136	0–448

Note: $N = 86$ ($n = 64$ completers and $n = 22$ non-completers).

Patients who discontinued their treatment tended to drop out relatively early in the process (75% dropped out before the sixth session). By this point, in line with the NET protocol, patients had completed the lifeline exercise and had begun exposure to memories of traumatic events.

Table 3. Logistic regression predicting treatment completion ($N = 86$).

Predictor	<i>B</i>	<i>SE</i>	Odds ratio	Wald statistic	<i>p</i>
Intercept	0.18	1.57	–	–	–
Perceived daily stress	0.05	0.06	0.96	0.77	.38
Difficulties in emotion regulation	–0.00	0.03	1.05	0.03	.86

Table 4. Descriptive statistics and correlations between study variables.

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	1	2	3
1. Proportion of NET adherence ^a	64	0.73	0.15	–	–	–
2. Perceived daily stress	83	26.93	5.43	.37**	–	–
3. Emotion dysregulation	82	58.18	10.91	.05	.44**	–
4. PTSD symptom severity	79	55.16	10.80	.31*	.46**	.44**

Note: ^aCalculated for completers only. Proportion of NET adherence refers to the mean proportion of planned sessions that were attended by patients and that took place in line with the NET protocol. That is, 73% of planned sessions took place in line with the NET protocol.

NET = narrative exposure therapy; PTSD = post-traumatic stress disorder. * $p < .05$, ** $p < .01$.

Table 5. Results of the multiple linear regression analysis in which the narrative exposure therapy (NET) adherence ratio was regressed on baseline daily stress, emotion dysregulation, and post-traumatic stress disorder (PTSD) symptom severity ($n = 64$).

Variable	<i>B</i>	<i>SE</i>	β	<i>p</i>
Step 1				
Intercept	–.03	.12		
Perceived daily stress	.40	.13	.43	< .01
Emotion dysregulation	–.13	.14	–.13	.33
Step 2				
Intercept	< .01	.12		
Perceived daily stress	.27	.15	.29	.07
Emotion dysregulation	–.11	.15	–.10	.47
PTSD symptom severity	.19	.15	.20	.19

content adherence; $\rho \sim -0.02$ for attendance). Results were similar when attendance was defined using no-shows only (excluding cancellations), indicating robustness to this operationalization. Treatment duration was negatively associated with both attendance rate ($\rho = -0.21$) and NET content adherence ($\rho = -0.30$), further supporting the interpretation that different aspects of engagement reflect distinct processes.

4. Discussion

The present study examined the role of pretreatment perceived daily stress, emotion dysregulation, and PTSD symptom severity in NET completion and adherence rates in a clinical sample of forced migrants. As hypothesized, dropout and non-adherence rates in the sample were considerable. Yet, surprisingly, analyses showed that perceived stress, emotion dysregulation, and PTSD symptom severity at baseline were unrelated to the likelihood of discontinuing treatment or demonstrating lower adherence rates. There are

several ways to understand these findings. First, the relatively small sample size or the methodological choices made may have hindered the ability to detect certain relationships. Alternatively, measures applied may have fallen short in capturing the post-migration challenges of forced migrants, given that they are based on culturally biased conceptualizations with a strong emphasis on intrapsychic and individual functioning (Bracken et al., 1997). Secondly, as daily stressors and emotion dysregulation are known to fluctuate, dynamic measures may be better suited to capturing their influence on the course of treatment. Although these explanations are plausible and could direct future research, the possibility that these baseline factors are genuinely unrelated to NET completion and adherence rates is also worth considering.

The study's small sample size, as well as the substantial overlap found between perceived daily stress and PTSD symptom severity, may have inhibited the detection of a unique contribution to the treatment course for each concept separately. The intertwined relationship between perceived daily stress and PTSD symptom severity aligns with previous findings (e.g. Minihan et al., 2018). Psychopathology is known to worsen under (acute) stress, and assessing these particular concepts may capture similar areas of functioning (e.g. 'lack of control'). Another explanation could be that constructs may unfold each other, making it difficult to untangle each unique influence. For instance, daily stressors may exacerbate pre-existing post-traumatic stress, as uncertainties about one's residential status may trigger feelings of being unsafe related to past traumatic experiences. Conversely, the burden of PTSD complaints may affect one's ability to adequately respond to daily stressors, thus increasing perceived daily stress.

We did not find that baseline emotion dysregulation influenced the NET treatment course in forced migrants. This may contest the notion that emotion regulation difficulties might impair treatment feasibility, but aligns with previous ambiguous findings about this notion (e.g. Gilmore et al., 2020; Van Toorenburg et al., 2020). It is possible that a clinical setting offers stability via regular supportive contact and psychoeducation, mitigating pretreatment emotion dysregulation (Helland et al., 2022). This could mean that someone might display high baseline levels of emotion dysregulation, but is still able to flexibly handle difficult moments or high arousal during treatment (Van Toorenburg et al., 2020). Moreover, another possible explanation for the findings, beyond the overlap of the constructs of daily life stress and emotion dysregulation, may be that individuals with more severe PTSD may have difficulty adhering to and completing psychotherapy in general. While the literature does not unequivocally support the need for pretreatment stabilization (e.g. Darby et al., 2023;

De Jongh et al., 2016), in some clinical contexts, additional support or non-trauma-focused interventions (e.g. psychosocial support, medication) is considered to enhance engagement and readiness for trauma-focused psychotherapy.

Some additional findings are worth considering. First, in line with previous evidence from naturalistic settings (Kaltenbach et al., 2020), the treatment length and total number of sessions needed to complete NET varied greatly, in some cases exceeding the NET protocol's recommendations (Siehl et al., 2021). Furthermore, the findings indicate that, on average, three out of four planned NET sessions are completed successfully. This highlights the importance of allocating sufficient time to complete the full treatment protocols for this specific population. Secondly, dropout rates were found to be higher than in other traumatized populations engaging in NET (Semmlinger et al., 2021). These findings provide further insight into the feasibility of NET, and may inform the potential tailoring of its protocol to naturalistic clinical settings. Finally, in contrast with literature on daily stressors in forced migrants, perceived daily stress levels in this sample were found to be moderate (Cohen et al., 1983). Also, higher perceived daily stress was related to higher NET adherence rates, tentatively suggesting that patients who experience more daily stress may feel a greater urge to engage in treatment. These findings contribute to a growing body of research on the relevance of daily stressors and structural barriers for forced migrants' mental healthcare (Li et al., 2016).

However, the study was limited by its heterogeneous and relatively small sample. Although this represents the diversity of forced migrants seeking mental healthcare in the Netherlands, the sample may have been too diverse to detect commonalities. To substantiate the findings, replication in larger samples of forced migrants, or with a particular focus on specific subgroups (e.g. survivors of sex trafficking or culturally homogeneous groups), is needed. Secondly, alternative indicators for explaining mental health treatment discontinuation versus adherence may be important. These could include the type and number of potentially traumatizing events that the patient has faced (e.g. Odenwald & Semrau, 2013), as well as demographics such as current residential status, ethnicity, gender identity, and sexual orientation. Future studies may choose to better document structural barriers to accessing care, beyond the subjective perceived daily stress reported by the patient. These could include factors such as distance to the site of therapy, language spoken by and cultural competency of the provider, cost of therapy, and access to general healthcare. Also, it would be useful for future work to further explore which elements of NET, if any, may hinder completion of and adherence to treatment.

Thirdly, although the study's naturalistic setting provides valuable information, it complicates comparison

of the sample and findings to studies with a more rigorous, controlled design. For example, those labelled 'completers' in this sample may vary in terms of their total number of sessions and treatment length compared to those considered 'completers' in controlled trials. Future studies may consider including treatment length and other treatment characteristics as covariates in the analysis to account for this variability. Finally, NET therapists may have differed in the quality and comprehensiveness of their notetaking. Therefore, crucial information may have been missing from the medical records, thus affecting the reliability of the outcome variables used.

In conclusion, the current study examined the role of baseline indicators on the feasibility of NET in forced migrants. None of selected baseline factors – perceived daily stress, emotion dysregulation, or post-traumatic stress symptoms – was found to significantly indicate NET adherence or completion rates. Additional research is needed to substantiate the study findings and consider key structural factors that could pertain to NET completion and adherence. However, these findings may encourage therapists to continue the provision of trauma-focused therapies, even for patients who experience stressors in their daily lives, or who display difficulties in regulating their emotions at the start of treatment.

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Author contributions

RG: conceptualization, methodology, formal analysis, investigation, writing – original draft, project administration, and funding acquisition. HvH: conceptualization, methodology, formal analysis, investigation, writing – review and editing, and project administration. WS: conceptualization, methodology, supervision, writing – review and editing, and funding acquisition. SG: conceptualization, methodology, and writing – review and editing. NvdA: methodology, formal analysis, and writing – original draft, review, and editing. PB: conceptualization, methodology, supervision, and writing – review and editing.

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Data availability statement

The data that support the findings of this study are available upon reasonable request to the corresponding author and are stored at the study site. The data are not publicly available as this sensitive information might compromise the privacy of research participants.

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