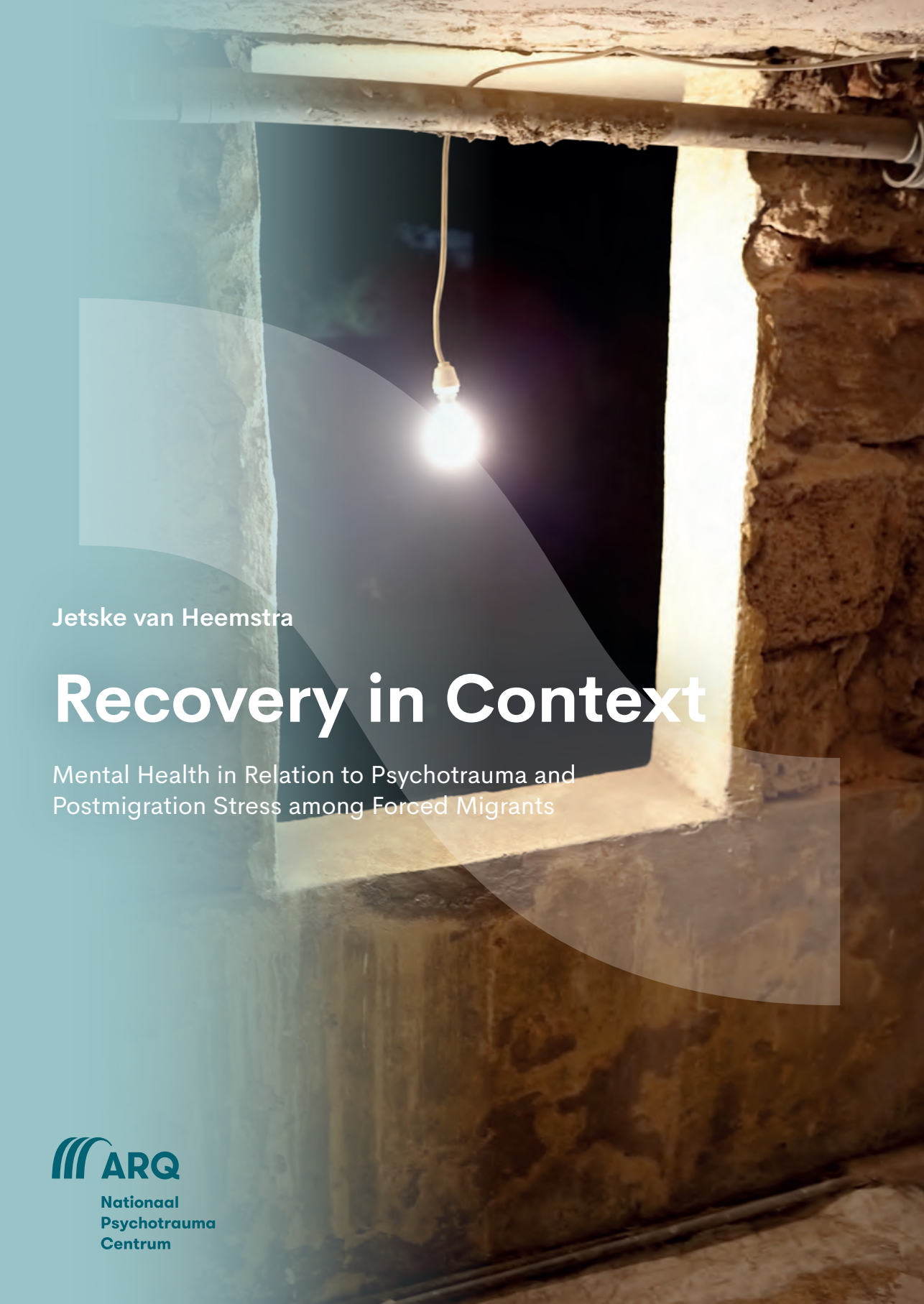

Jetske van Heemstra

Recovery in Context

Mental Health in Relation to Psychotrauma and Postmigration Stress among Forced Migrants

ARQ
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Centrum

Recovery in Context

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Recovery in Context

Mental Health in Relation to Psychotrauma and Postmigration Stress among Forced Migrants

Herstel in Context

Mentaal Welzijn in Relatie tot Psychotrauma en Postmigratie Stress bij Onvrijwillige Migranten

Proefschrift

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de Universiteit Utrecht
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Voor hen die het slachtoffer zijn van onrecht en ontheemding

PREFACE

It is in Jetske van Heemstra's career of almost ten years as a psychologist at ARQ Centrum'45 that the present PhD thesis originates. Her work as a clinician treating (undocumented) refugees and victims of human trafficking raised questions in what ways existing treatment interventions for migrants and refugees could be improved and how their mental well-being could be enhanced further. In order to answer these questions, her study focuses on factors of both a psychopathological and a social nature and on the interplay between them.

Besides being a mental health psychologist and researcher at ARQ Centrum'45, Van Heemstra is also trained as a sociologist, and as such became interested in the intersection between social and psychological functioning, which may also account for the angle from which she investigates her target group: forced, or involuntary, migrants, refugees who have had to flee their countries of origin to escape unsafe living conditions. These migrants not only constitute a constantly increasing population group, they are also relatively vulnerable to developing psychopathology, on account of both the traumatic experiences they have been exposed to and the stressors that they encounter in their daily post-migration lives. What is central to Van Heemstra's studies is the manner in which not only these daily stressors but also psychological resources, including helpful coping styles, affect migrants' mental well-being and in which way they could influence the trauma therapies offered to these forced migrants.

In order to address these issues and gain more insight into factors affecting the effectiveness of such trauma treatments as Narrative Exposure Therapy (NET) and Eye Movement Desentisisation and Reprocessing (EMDR), Van Heemstra and colleagues investigated a range of samples of involuntary migrants in various settings. Her research question whether negative factors adversely affect trauma therapy led to her first findings and recommendations. Among the highlights was the finding that earlier perceived daily stressors did not necessarily impede the effectiveness of NET or affect the subsequent course of PTSD symptoms during NET. This leads the author to advise clinicians to also deploy PTSD treatments with patients who experience a great deal of daily stress. Additionally, her studies on the potentially beneficial role of psychological resources for mental health within the target group revealed limited leads. The only element to play a key role in the presence of PTSD was found to be post-traumatic cognitions. The relevance of self-efficacy in relation to daily stress and mental health and coping styles relative to PTSD treatment effects could not be detected. Lastly, the analysis of the recovery-oriented intervention 7ROSES showed that this method, developed by ARQ and partners with the involvement of Van Heemstra, seems to enhance self-efficacy.

What this research clarifies in particular is that while both stressors and psychological resources clearly have a bearing on the mental well-being of forced migrants, it is primarily the context within which these factors operate that determines their role and

impact. Obviously, this relative dependence of context-determined impacting factors has implications for the (trauma) treatments offered to these migrants. Put differently, if therapies and interventions are to be improved to suit the needs of involuntary migrants and enhance their mental well-being, what must be brought to bear on the task is, the author of this PhD thesis stresses, a great deal of contextual sensitivity and an eye for individual factors and circumstances.

The defence of this thesis takes place in the 50th anniversary year of ARQ Centrum'45, the institute that was originally founded for the treatment of World War II survivors, and where a number of the refugees participating in this study, modern-day survivors of persecution, have received care and therapy.

It is also in this sense that we present this study with great pleasure. It constitutes an important contribution to our knowledge of factors potentially impacting the treatment of forced migrants and provides a scientific foundation for a more context-specific approach to their care and treatment.

drs J-W (Jan-Wilke) Reerds MBA,
Chair Board of Directors ARQ National Psychotrauma Centre

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Introduction

1

Forced migrants and their mental health: status quo

Mid-2022, the United Nations Refugees Agency (UNHCR) reported a number of 103 million people who had forcibly fled their homes to seek refuge from unsafe living conditions, of which many are externally displaced. Forced migrants are at high risk for mental health problems (Ringold et al., 2005), also compared to age-matched populations in host countries (Fazel et al., 2005). Prevalence rates vary across studies, but it is often reported that over 30% of forced migrants suffer from a mental illness (Turrini et al., 2017). In addition, longitudinal studies outline the persistent character of mental health disorders (Bogic et al., 2015).

Importantly, there is a research gap on psychological factors impacting forced migrants' mental health conditions. Many studies have a narrow focus by examining psychopathology, especially Post Traumatic Stress Disorder (PTSD) (Hynie, 2018a). Many clinical studies among forced migrants evaluate interventions that aim to decrease PTSD or other DSM-5 or ICD-10 disorders (e.g., Nosè et al., 2017). However, forced migrants may suffer from a broad spectrum of problems that transcend PTSD and other psychopathology, due to the challenging social conditions they live in. Therefore, research on the mental health of forced migrants should ideally focus on a broader scope of outcomes (Nickerson, 2018). Knowledge on psychological factors impacting forced migrants' mental health, in the context of their challenging living conditions, is needed to optimise mental health care. This dissertation aims to contribute to the knowledge on supportive and risk factors affecting the mental health of forced migrants.

Forced migrants: Displaced persons are often named based on their legal position (e.g., 'refugees', 'asylum seekers') or migration history (e.g., 'victims of human trafficking'). Such categorisations are not necessarily relevant for clinical and scientific practice. Therefore, the term 'forced migrants' will be used in this introduction, covering all possible sub-groups.

Causes of mental illness and their operationalisation: Trauma exposure and daily stressors

Arguably, the mental health of forced migrants is threatened by trauma exposure and daily stressors. Trauma exposure is a well-defined category and necessary condition for the PTSD diagnosis. According to the DSM-5 (APA, 2013), exposure to death, threatened death, actual or serious injury, and actual or threatened sexual violence are considered as potentially traumatic events (PTEs). Such exposure can be direct, witnessed, heard of from a close friend or relative, or through work. Forced migrants are often exposed to multiple traumatic events (Li et al., 2016), resulting in a high traumatic load which increases the vulnerability for PTSD symptoms (Kolassa et al., 2010).

Additionally, forced migrants often face multiple daily stressors that may contribute to mental health problems. Socio-economic factors, legal problems such as around the asylum procedure, and family separation are examples of known risk factors for PTSD (Li et al., 2016). Accurately measuring daily stressors is challenging. First, it is hard to define and demarcate this category. Potential stressors are infinite and depend on specific contextual factors like certain policies or surrounding communities. Additionally, the relevance of daily stressors for one's mental health is determined by how they are perceived, e.g., one person can experience unemployment as a severe stressor while this is less relevant for someone else. Hence, daily stressors can be measured by listing existing problems as such, when reported during therapy (e.g., Djelantik et al., 2020), or by assessing how daily stressors are perceived (e.g., Alemi et al., 2015). Sometimes the two options are combined by measuring the subjective impact of predefined daily stressors, like discrimination or worries about family in one's home country (e.g., Laban et al., 2005).

Daily stressors and trauma exposure can be linked directly, for example when the traumatic loss of a spouse during a bombing results in the loss of financial resources that this person provided. However, trauma exposure and daily stressors can also burden individuals more independently, like when someone lives in the challenging environment of a reception centre and meanwhile suffers from intrusions caused by a past traumatic event. Either way, both sources of stress (traumatic and daily) may contribute to mental health problems among forced migrants.

The impact of daily stressors and trauma exposure on PTSD symptoms is influenced by emotion regulation (Nickerson et al., 2015). Consequently, this is an important transdiagnostic factor to consider when examining the causes of PTSD among forced migrants.

Daily stressors: Several terms have been used to describe the ongoing stress experiences that forced migrants may face, e.g., 'daily stressors' (e.g., Riley et al., 2007), 'ongoing resettlement difficulties' (e.g., Steel et al., 2011), 'ongoing stressors' (e.g., Kashyap et al., 2020), and 'postmigration stressors' (e.g., Li et al., 2006). In this introduction, the term 'daily stressors' is used to include all types of ongoing and incidental social stressors that forced migrants may face.

Daily stressors and common psychological interventions

Meta-analytic findings show that trauma-focussed therapies (TFTs) are effective in reducing PTSD and depression in forced migrants (e.g., Lambert & Alhassoon, 2015). However, many forced migrants still meet the criteria for PTSD after treatment. For example, one meta-analysis concluded that TFT is effective in PTSD symptom reduction

for one out of four to five forced migrants, based on findings in high income countries (Nosè et al., 2017). Evidently, leads for improvement are needed. Most of the evaluated therapies are centred around generally established interventions, like imaginary exposure, that target psychopathology like PTSD. Since mental health problems of forced migrants may be induced or maintained by daily stressors, the role of such stressors in the treatment process should be explored. A different or extended approach may be required, other than recommended in current guidelines (e.g., Nice guidelines for PTSD, 2018; Richtlijn PTSS, 2013).

There is limited and inconsistent knowledge on predictors for PTSD treatment response among forced migrants (Opaas et al., 2022). When assessing the impact of daily stressors a dynamic approach is relevant, because daily stressors are likely to change over time. Various studies have examined the course of daily stressors and their influence during therapy. One of these studies found no significant impact of clinician rated daily stressors during the course therapy on changes in PTSD after treatment (Bruhn et al., 2018). In this study, daily stressors were measured in four predefined domains: housing, work/finance, family, and residency permit. Another study showed that daily stressors were predictive for PTSD levels in a subsequent session during trauma focussed therapy, but also mentioned that no effect of these stressors on the overall treatment effect was established (Kaltenbach et al., 2020). In this latter study, examples of these daily stressors were bad news with respect to the asylum procedure or bad news from relatives/friends back home. Yet another study found that one particular clinician-reported daily stressor, i.e., conflict in the home country, as well as a higher number of total postmigration stressors, negatively impacted PTSD reduction during a traumatic grief-focussed treatment (Djelantik et al., 2020).

All these findings are based on listing present daily stressors occurring in the lives of study participants. This clarifies how actual circumstances affect therapy outcomes, but does not specifically capture migrants' subjective hindrance of the stressors. Knowledge on the latter in relation to treatment response is lacking. Hence, research is needed to examine to what extent experienced daily stress levels impact PTSD treatment outcomes. Findings of this research might indicate if daily stressor perceptions should be targeted in order to improve the results of applied therapies.

Daily stressors: How to approach this potential risk factor?

Daily stressors are likely to negatively impact the mental health of forced migrants. Therefore, reducing the amount of daily stressors by relevant policies and external resources would benefit their wellbeing. For example, unemployment is an established risk factor for decreased mental health of forced migrants (Hocking et al., 2015). This knowledge could guide policies that enable job opportunities for forced migrants. However, this is insufficiently put into practice (Zetter, & Ruaudel, 2018). More often, social policies fail to decrease daily stressors (Hynie, 2018b).

Besides policy solutions, an additional method that possibly counterbalances the negative health impact of daily stressors is strengthening inner, psychological resources. Certain adaptive psychological factors may help forced migrants in dealing with daily life challenges and therewith reduce their detrimental effect (Kashyap et al., 2020). Such psychological qualities may be promoted through treatment methods or preventive healthcare modules.

The relevance of strengthening individual resources has been acknowledged but is under-researched (Li et al., 2016). At the time we started designing the studies in this dissertation it was largely unclear which personal resources were relevant for strengthening the mental health of forced migrants and whether improving these would be possible given their actual living conditions. Hence, additional knowledge on individual factors promoting mental health in the presence of invalidating daily stressors is needed (e.g., Kashyap et al., 2020). Evidently, investigating all potential resources is unfeasible for this dissertation, but three promising factors will be examined: trauma related cognitions, coping styles, and self-efficacy.

The role of trauma related cognitions

Negative cognitions that follow traumatic experiences may be relevant for the PTSD levels of forced migrants. Trauma-related cognitions (TRCs) can contribute to a sense of unsafety, and therewith increase vulnerability for PTSD. Relevant categories of TRCs include negative cognitions about the self (e.g., *"I am inadequate"*), self-blame (e.g., "*somebody else would have not gotten in this situation"*), and the world (e.g., *"the world is a dangerous place"*) (Foa et al., 1999).

In general populations, TRCs are related to PTSD (Foa et al., 1999). The level of TRCs is higher among forced migrants compared to reference samples (Ter Heide et al., 2017). However, the predictive role of TRCs for PTSD outcomes among forced migrants is largely unknown and questionable. Indeed, stressful living conditions may elicit negative thinking patterns in anyone and not be related to the development of mental health problems. For example, living in a conflict area may well justify the cognition that '*the world is a dangerous place*'. There is need to investigate whether TRCs are relevant for PTSD symptoms among forced migrants living under ongoing challenges and threats. Establishing the role of TRCs can help to guide treatment interventions mitigating PTSD for forced migrants in unstable living conditions.

The role of coping

Another individual factor that may be relevant to promote the wellbeing of forced migrants is coping. Lazarus and Folkman (1984) described coping as the set of cognitive and behavioural strategies that people use in dealing with stressful situations. Coping may refer to different coping styles, some of which promote mental health and others aggravating present symptoms. A well-known grouping of the different coping styles is:

problem-focussed coping (acting to solve or improve the situation), emotion-focussed coping (focusing on thoughts and feelings related to the situation), support-seeking (seeking practical or mental support to deal with the situation), and avoidant coping (avoiding confrontations with the difficult situation) (e.g., Huijts et al., 2012).

Traumatised forced migrants may benefit from healthy coping abilities in at least two ways. First, coping styles may impact the PTSD treatment effect. A predictive role of certain coping styles on PTSD reductions was found for several populations (e.g., Bourdon et al., 2019), although the impact varied between different samples (e.g., Badour et al., 2012; Leiner et al., 2012). Among forced migrants the interplay between coping styles and PTSD in treatment is under-researched. Hence, the impact of coping abilities on PTSD treatment response among forced migrants should be examined.

Second, healthy coping styles may help forced migrants in dealing with daily stressors (Arenliu et al., 2020; Hoare et al., 2020). Therefore, it is relevant to know if coping styles can be improved via treatment interventions. Accordingly, promoting helpful coping abilities is mentioned as a common factor of different TFTs (Schnyder et al., 2015). Up to now it is unknown if coping styles can be altered by therapies in the population of focus. The impact of different therapies on coping styles among forced migrants should be investigated.

The role of self-efficacy

Self-efficacy refers to the perception that one has about one's personal ability to deal with new stressors and challenges (Benight & Bandura, 2004). Stronger self-efficacy may counterbalance the mental burden caused by stressfull living conditions. In forced migrants, higher self-efficacy appeared to be related to better mental health (Sulaiman-Hill & Thompson, 2013) and positive affect over time (Tip et al., 2020). Morina et al. (2018) found that increasing self-efficacy with a short-term experiment resulted in increased distress tolerance. Following this promising result, it is important to examine if and how self-efficacy can be promoted among forced migrants, e.g., by investigating treatments particular addressing self-efficacy. Additionally, it is unknown how self-efficacy can serve forced migrants in relation to challenging living conditions. Although the relevance of self-efficacy is established for this group (e.g., Morina et al., 2018; Tip et al., 2020), it is relevant to additionally investigate if self-efficacy can buffer the invalidating effects of daily stressors.

AIMS AND OUTLINE OF THE CURRENT THESIS

This dissertation aims to provide knowledge that may serve the promotion of mental health among forced migrants. The chapters are divided into two parts, covering complementary goals. In the first part, the interplay between PTSD and daily stressors

during therapy is investigated. This responds to the need to improve current therapies. Findings intend to clarify the role of perceived daily stress in TFT response and feasibility. In the second part, this dissertation investigates the relevance of three psychological resources which may improve mental health for forced migrants: trauma-related cognitions, coping styles, and self-efficacy. Additionally, potential changes in coping styles and self-efficacy after participation in psychological treatments will be explored. Findings may clarify the relevance of these individual resources for improving the mental health of forced migrants. The two parts of the dissertation include the following chapters:

Part one: Investigating if perceived daily stress is related to PTSD recovery

Three chapters of this dissertation are dedicated to understanding the role perceived daily stress in TFT and PTSD recovery. In **chapter 2** we will present a protocol of an uncontrolled treatment study investigating the course of PTSD and perceived daily stress, and the potential relation between the two, during Narrative Exposure Therapy (NET). NET is a TFT that was validated among forced migrants (Neuner et al., 2018). Also, the course of emotion regulation and mood during NET will be examined. Questionnaires will be administered each session to learn how these two factors develop over the course of therapy. The outcomes of the study are described in **chapter 3**. More precisely, i) changes in PTSD, perceived daily stress, emotion regulation, and mood and ii) their concurrence, over the course of NET, will be analysed. Furthermore, iii) the predictive role of perceived daily stress on the course of PTSD during NET will be examined. **Chapter 4** presents work based on the same dataset and aims to clarify whether perceived daily stress and emotion regulation hamper the feasibility of NET. To this end, we will analyse if baseline levels of perceived daily stress and emotion regulation impact treatment drop-out and adherence.

Part two: Understanding the role of individual factors for mental health and its treatment

The second aim of this dissertation is elaborated in the following four chapters. In **chapter 5** we aim to test the role of trauma related cognitions for PTSD (symptoms) in a non-Western population living under challenging conditions. To this end, we present a cross-sectional study among a Palestinian refugee sample living under stressful and threatening circumstances. Levels of trauma-related cognitions in this sample will be compared to non-forced migrant reference samples, to establish potential group differences. Moreover, associations of these cognitions with PTSD symptom levels and probable PTSD diagnosis will be presented.

In **chapter 6** two aims are addressed, using data from a randomised controlled treatment trial with two arms (i.e., EMDR versus stabilisation treatment, Ter Heide et al., 2016). First, we examine if coping styles contribute to the overall effects of treatment

on PTSD. For this purpose, we will analyse the predictive role of baseline coping styles for PTSD treatment response at 3 months follow-up. Additionally, we will compare baseline coping styles between treatment responders and non-responders. Second, we will investigate if EMDR and stabilisation treatment can influence coping styles. To this end we will analyse changes in coping styles after EMDR and stabilisation therapy, and compare these effects between the two different treatments.

In the studies presented in **chapter 7** and **8** we investigate self-efficacy. In **chapter 7** we aim to clarify whether self-efficacy can buffer the impact of daily stressors on mental health problems. In order to do so, we present the findings of a cross-sectional study conducted among a community sample of forced migrants living in the Netherlands. In **chapter 8** we examine the feasibility of a novel treatment method named 7ROSES, which aims to increase self-efficacy among traumatised forced migrants. An uncontrolled evaluation of the pilot version of 7ROSES will be presented, by measuring changes in general self-efficacy and general mental health problems.

In **chapter 9** findings from all studies are summarised, integrated and discussed, in relation to the current scientific literature. Also, a personal reflection on the scientific work of this dissertation will be included. Hopefully the work presented in this dissertation will eventually contribute to the promotion of mental wellbeing of forced migrants who need, and deserve, a better life.

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PART I

Investigating if perceived daily stress is related to PTSD recovery

Feasibility and predictors of change of narrative exposure therapy for displaced populations: A repeated measures design

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ABSTRACT

Background

Displaced victims of interpersonal violence, such as refugees, asylum seekers, and victims of sexual exploitation, are growing in numbers and are often suffering from a Post-Traumatic Stress Disorder (PTSD). At the same time, these victims are known to benefit less from trauma-focussed therapy (TFT) and to be less compliant to treatment. The objective of this paper is to describe the rationale and research protocol of an ongoing trial that aims to evaluate different variables that might influence the feasibility of TFT for the study population. Specifically, perceived daily stress, emotion regulation, and mood are investigated as predictors of change in PTSD symptoms during a trauma-focussed therapy (narrative exposure therapy (NET)). The feasibility of administering measures tapping these constructs repeatedly during treatment will also be evaluated.

Methods/design

Using an observational treatment design, 80 displaced victims of interpersonal violence will be measured before, during, and after partaking in NET. Several questionnaires tapping PTSD plus the aforementioned possible predictors of PTSD change will be administered: Post-Traumatic Stress Disorder Checklist-5, Perceived Stress Scale, Difficulties in Emotion Regulation Scale-18 (pre-test, post-test, and follow-up), subscale impulsivity of the Difficulties in Emotion Regulation Scale-18, Perceived Stress Scale short version, Primary Care Post-Traumatic Stress Disorder and a single Mood item (each session). Multilevel modelling will be used to examine the relation between the possible predictors and treatment outcome.

Discussion

The present study is the first to examine the interplay of facilitating and interfering factors possibly impacting treatment feasibility and effectiveness in displaced victims of interpersonal violence with PTSD receiving NET, using repeated measures. The current study can help to improve future treatment based on individual characteristics. Trial registration: Netherlands Trial Register: NTR7353, retrospectively registered. Date of registration: July 11, 2018.

Keywords

Refugees, human trafficking, sexual exploitation, post-traumatic stress disorder, narrative exposure therapy, treatment response, feasibility.

BACKGROUND

Worldwide, there is an increase in the number of victims of interpersonal violence who are forced to leave their home country (UNHCR, 2016). When entering a host country, these displaced persons are usually referred to as either 'refugees', 'asylum seekers', 'trafficked human beings', 'illegal immigrants' or 'undocumented people', depending on their trauma background and legal status. Mostly these groups overlap in their experience of forced migration, their marginalised social position, and the challenges they encounter. In this paper, we will therefore collectively refer to all such groups as 'displaced people'.

As a result of assorted traumatic events, like war- and conflict-related violence, sexual violence and exploitation, many of these displaced people suffer from a Post-Traumatic Stress Disorder (PTSD) (Fazel et al., 2005; Lindert et al., 2009; Steel et al., 2009; Zimmerman et al., 2006). PTSD symptoms cause a great burden, render people unable to engage in daily activities and put them at risk for re-victimisation (Risser et al., 2006). Displaced people suffering from PTSD could therefore benefit from trauma-focussed therapy (TFT). TFT is a psychological intervention aiming to decrease PTSD symptoms by fostering the processing of traumatic memories.

Scientific research into TFT for displaced people is scarce. There is evidence that non-refugee traumatised populations benefit more from TFT than traumatised groups with a refugee background (Cusak et al., 2016; Turrini et al., 2019). Moreover, the feasibility of evidence-based therapies within the refugee population is complicated by post-migration obstacles (Slobodin & de Jong, 2015) which can result in low treatment compliance and completion levels. Most likely, the primary focus on PTSD fails to address the broader challenges faced by displaced people (Miller & Rasmussen, 2010). Therefore, more insight is needed into factors affecting treatment response during TFT and conditions for recovery. Identifying factors that undermine the feasibility of TFT for displaced people may help to refine the timing and focus of interventions, and thus improve treatment response.

One key factor that potentially undermines the feasibility of treatment is daily stressors, given their proven association with PTSD symptoms (Chu et al., 2013; Leon et al., 2007; McAlonan et al., 2007). Ongoing daily stressors arising from the immigration process, loss of social network, and impaired functioning resulting from PTSD symptoms negatively impact mental health among the study population (Chu et al., 2013; Laban et al., 2005; Li et al., 2016; Priebe et al., 2016). The burden caused by ongoing daily stressors may impact one's cognitive functioning in several ways (McEwen & Sapolsky, 1995). For example, by occupying the working memory (Luettgau et al., 2018), and thereby reducing the cognitive resources needed to process traumatic events.

While there is evidence for the negative impact of daily stressors and perceived daily stress on treatment for displaced populations, the few present studies have yielded

ambiguous results. One study affirmed the negative impact of lack of social support, a daily stressor, when present at the start of treatment on treatment outcome (Buhmann, 2014). However, a study where clinician-rated daily stressors during treatment could not establish such an impact on treatment (Bruhn et al., 2018). These limited and contradictive findings illustrate the need for more rigorous research on the relation between daily stressors and treatment response within the study population. No study to date has explored the impact of experienced daily stressors while taking part in TFT in the study population.

Another main factor likely to affect the feasibility of TFT for displaced people is emotion regulation, such as insight into, control over, and awareness of one's emotions (e.g., Goldin et al., 2014; Gratz et al., 2015). Several studies have indicated that emotion dysregulation mediates between traumatic events and the development of PTSD in different groups (e.g., Messman-Moor & Bhyptani, 2017), including traumatised refugees (Nickerson et al., 2016). Emotion dysregulation has been identified as a consequence of trauma and emotional impulsivity in particular as a predictor of future (re)victimisation (Cloitre et al., 1997; Messman-Moore et al., 2010). For TFT to be feasibly applied, a person must be able to stay within a dynamic 'window of tolerance', a range of affect that can be regulated at that point in time (Siegel, 1999). Consequently, it is expected that the level of emotion regulation at baseline and improved control over one's emotions during treatment are both prerequisites for reducing PTSD symptoms (Hien et al., 2017). No study to date has looked into the interplay between emotion regulation and PTSD symptoms while taking part in TFT in the study population.

A final main factor that may affect treatment feasibility is depressed mood, which can be measured as a proxy for depression (Aguilera et al., 2015). Among resettled refugees, the comorbidity rate for PTSD with depression is 44%; for depression with PTSD, it is 71% (Fazel et al., 2005). Previous research on TFT shows that higher baseline levels of depression predict poorer treatment response in displaced individuals (Haagen et al., 2017) and therewith undermine the feasibility of treatment. Meanwhile, TFT has proven effectiveness in reducing symptoms of depression in the study population (Nosè et al., 2017). Yet, insight in the interaction between depressed mood and PTSD during treatment is currently lacking.

In an umbrella review of prevalence and intervention studies on common mental disorders in asylum seekers and refugees, Turrini et al. (2017) found that narrative exposure therapy (NET) was the best-supported TFT for reducing PTSD symptoms. In a meta-analysis of NET (Lely et al., 2019), it was found that NET is effective in reducing PTSD and depression symptoms across diverse, predominantly war-affected refugee populations (Schauer et al., 2011). Since it is a first-choice treatment for the study population, NET was chosen as the TFT applied in the present study.

As outlined above, several factors (e.g., PTSD, perceived daily stress, emotion dysregulation and mood) tend to impact treatment feasibility. However, their interplay

during TFT has not yet been examined. Insight in the feasibility of measuring this interplay in a diverse group of displaced individuals following NET is yet to be established. To the best of our knowledge, there are no prior treatment studies for which weekly repeated measures have been carried out within the target population. Additionally, the practical execution of examining the interrelatedness between different parameters (e.g., PTSD, perceived daily stress, emotion dysregulation and mood) is based on questionnaires that are partly adapted for the current study (see 'Methods' section). Consequently, their feasibility within the target population has not been objectified yet.

In the present paper, the feasibility, rationale and protocol of an ongoing trial are described. Specifically, we aim to identify relevant predictors of PTSD symptom change during and after NET in 80 displaced victims of interpersonal violence. The primary hypotheses of the study are (1) it is feasible to administer highly repeated measures, within a diverse group of displaced persons. (2) High perceived daily stress, emotion dysregulation, and low mood at baseline and during NET predict higher drop-out, higher no-show and poorer treatment response of NET (i.e., less PTSD symptom reduction), thus undermining the feasibility of NET; (3) Reduction in perceived daily stress and improvement in emotion regulation and mood during NET are associated with concurrent reductions in PTSD symptoms during NET; (4) Change in perceived daily stress, emotion dysregulation, and mood during NET predict subsequent changes in PTSD symptoms at later stages of NET. Furthermore, the study aims to establish whether NET contributes to positive aspects of mental health.

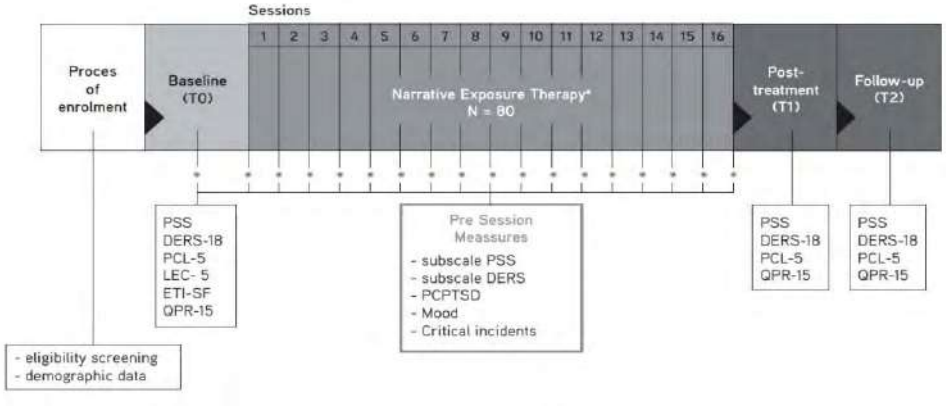
METHODS

Design

This study follows a repeated measures observational design with baseline assessments, repeated measures over the course of treatment and post-treatment assessments. Twelve to sixteen sessions of NET will be provided to all patients included in the study. Various questionnaires will be administered at baseline (T0, pre-treatment), 1 week after NET completion (T1, post-treatment) and 6 weeks after NET completion (T2, follow-up). In addition, assessments to measure potential processes of change will be performed at the start of each NET session. See Figure 1 for a detailed overview of the planned design and administered measures.

NET will be provided by trained psychologists, psychotherapists, medical doctors and psychiatrists. Psychologists and master's level psychology students will perform assessments for the study. All involved professionals have extensive experience in working with migrants (in a culturally sensitive manner) and interpreters.

Figure 1
Design and Overview of Planned Assessments



Note. Biographical data: gender, age, residence status, etc.; ETI: Early Trauma Inventory-Short Form; DERS-18: Difficulties in Emotion Regulation Scale-Short Version; LEC-5: Life Events Checklist for DSM-5; PCL-5: Post-Traumatic Stress Disorder Checklist for DSM-5; PCPTSD: Primary Care Post-Traumatic Stress Disorder; PSS: Perceived Stress Scale; QPR-15: Questionnaire on Process of Recovery-Short Version.

Participants

The study will take place at an outpatient clinic specialised in mental health care for refugees, asylum seekers, victims of sexual exploitation and otherwise traumatised populations in the Capital region in the Netherlands. The study aims to include 80 participants, in order to detect medium to small effect sizes (Cohen, 1988). Patients are referred to the clinic by a general practitioner or by a partnering social welfare organization. Patients' background/nationality is diverse; most originate from West Africa, the Middle East and Eastern Europe. Their legal status varies from having obtained a residence permit or even Dutch citizenship to illegal residence in the country, and they may reside in asylum seekers centres, specialised shelters for victims of sexual exploitation, governmental shelters for illegal persons or live independently.

Inclusion criteria

Patients will be included in the study if they are displaced victims of interpersonal violence, aged 18 years or older, if they have PTSD as a primary diagnosis established by a psychiatrist or clinical psychologist during intake, if individual NET in an outpatient setting has been indicated for them and if they are cognitively able to give informed consent to participate in the study.

Exclusion criteria

Patients will be excluded from the study if they display signs of an acute crisis, such as acute suicidality or acute severe psychosis, or suffer from persistent substance abuse.

These exclusion criteria are applied because of their expected disturbing influence on the adherence and/or completion of NET.

Recruitment

This is an ongoing treatment trial. The enrolment period is planned to run for 2.5 years from February 2018 to January 2021. Following multi-disciplinary clinical assessment and evaluation, the diagnosis and treatment indication will be discussed with patients. Those who are eligible for enrolment will be informed about the study and will be invited to participate. This eligibility will be considered as broadly as possible within the inclusion criteria to allow for a representative sample of displaced victims of interpersonal violence. Information about the study aims and objectives, guarantee of anonymisation of data and the fact that participants are free to terminate participation at any moment will be given orally and provided on paper through an information leaflet. After intake patients are placed on a waiting list for NET, ranging from 1 to 4 months. When patients from the waiting list are invited to start NET, they will once again be informed about the study orally and on paper. Patients will be asked to consider participation over a minimum period of 3 days. Afterwards, they will be contacted by phone or face-to face and given ample opportunity to ask additional questions. If they indicate willingness to participate in the study, an appointment is made to sign informed consent and conduct the baseline assessment (T0). Participants are invited to bring someone they trust to this meeting. Participants will be receiving a voucher of 10 euros after the follow-up measurement. If after the first year the aspired total number of participants seems unachievable, prolongation of the enrolment period and multicentre options will be explored after consultation with the involved medical ethical committee.

Intervention

Narrative exposure therapy

NET is an evidence-based short-term psychotherapy targeting PTSD symptoms, specifically appropriate for multiple traumas in divergent cultural settings. For the study population in question, the method is found to be feasible (Halvorsen & Stenmark, 2010) and is considered the first choice TFT (Lely et al., 2019). The NET protocol includes 12–16 sessions of individual trauma focussed exposure, performed weekly or twice a week by trained mental health professionals. Each session lasts 90–120 minutes, depending on the content of the trauma which is targeted during the session, and the possible involvement of an interpreter. NET aims to create a chronological narrative of a patient's life story, including both traumatic and empowering memories. During each session, one or more significant memories (traumatic or empowering) are discussed in great detail. Imaginary exposure, meaning-making, and reprocessing are used to reduce PTSD symptoms. An account of each session is written down by the therapist, which will result in a patient's biography when the therapy has been completed.

Co-interventions before and during treatment

When participants cannot immediately start NET, there are no restrictions in psychological or pharmacological interventions received during their waiting period, applied in accordance with the national guidelines. Such interventions can be indicated either for symptom management or as a preparation of individual TFT. In addition, individual sessions can be provided in case of (imminent) crisis. From the start of NET onwards, however, no other modules will be provided, unless in case of acute crisis in which the safety of a participant is endangered or he/she is about to harm others. Previously started pharmacological interventions can be continued during NET; however, no new pharmacological interventions will be started during NET.

Discontinuation of the intervention and drop-out

Discontinuation of NET will take place if patients so wish or if multi-disciplinary clinical evaluation indicates that continuation is not in the best interest of the patient. If patients wish to stop participating in the study but wish to continue NET, this will be allowed. Patients will be considered dropouts when there are deviations from the NET treatment protocol for more than four consecutive sessions (i.e., no trauma-focussed approach during the sessions or no-show), since in these cases the effectiveness of the treatment offered cannot be assured (Schauer et al., 2011).

Measurements

Perceived Stress Scale (PSS)—full scale administered pre- and post-treatment

The PSS (Cohen et al., 1983) has been developed to measure the perception of daily stress by assessing how unpredictable, uncontrollable and overloading patients experience daily life. With 10 items, thoughts and feelings and the evaluation of daily life in the last month are explored through a 5-point scale ranging from 0 to 4. Mean scores will be calculated, ranging from 0 to 4. Example item: 'In the last month, how often have you been upset because of something that happened unexpectedly?' Administration of the questionnaire takes approximately 10 minutes. Acceptable psychometric properties of the instrument have been established (Lee, 2012).

Subscale administered before each session

The four items version of the PSS (Lee, 2012) will be administered at the start of each session. These items have proven sensitivity to short-term changes in stress (Bear et al., 2012). For the purpose of this study, the indicated timespan was changed from 'In the last month' to 'In the last week' to match the other pre-sessions measures for possible predictors. An example item is 'In the last week, how often have you felt that things were going your way?' These items will be scored on a VAS-scale of exact 10 cm by placing a cross on a line from 0 (not at all) to 100 (completely). Mean scores will be calculated, ranging from 0 to 100.

Difficulties in Emotion Regulation Scale short version–18 (DERS)—full scale administered pre- and post-treatment

The DERS was developed to measure emotion regulation. The DERS-18 comprises 18 items and uses a 5-point Likert scale ranging from 1 to 5; it has 6 subscales: nonacceptance of emotional responses, difficulty engaging in goal-directed behaviour, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies and a lack of emotional clarity. Mean scores will be calculated, ranging from 1 to 5. Example item: 'I pay attention to how I feel'. Administration of the questionnaire takes approximately 10 minutes. The DERS has high internal consistency, good test-retest reliability, moderate construct and predictive validity (Victor & Kolonsky, 2016).

Subscale 'impulsivity' administered before each session

As a proxy of emotion regulation, the subscale 'Impulsivity' will be used, comprising three items from the 'Difficulties in Emotion Regulation Scale' (DERS-18; Victor & Kolonsky, 2016). For the purpose of this study, the phrase 'In the last week I have felt:' was added to match the other pre-session measures for possible predictors. Example item: 'When I am upset, I become out of control'. Items will be scored on a VAS-scale ranging from 0 (not at all) to 100 (completely). Mean scores will be calculated, ranging from 0 to 100.

PTSD Checklist for DSM-5 (PCL-5)—administered pre-and post-treatment

The 20 item PCL-5 is a self-report checklist which measures the presence and severity of the 20 DSM-5 symptoms of PTSD on a 5-point scale (0–4) (e.g., 'Trouble remembering important parts of the stressful experience'). Mean scores will be calculated, ranging from 0 to 4. It will be used to indicate PTSD symptom severity pre- and post-treatment. Administration of the questionnaire takes approximately 10 minutes. The instrument has good psychometric quality (Blevins et al., 2015).

Primary Care Post-Traumatic Stress Disorder (PCPTSD)—administered before each session

Because a short version of the PCL-5 is unavailable, the five-item Primary Care Post-traumatic Stress Disorder (PCPTSD) checklist was selected to increase the feasibility of the frequently repeated measurements. This questionnaire is used to measure PTSD symptoms (Prins et al., 2016). For the purpose of this study the indicated timespan was changed from 'In the past month, have you' to 'In the last week' to match the other pre-session measures for possible predictors. An example item is: 'In the last week did you have nightmares about the event(s) or thoughts about the event(s) when you did not want to?' These items will be scored on a VAS-scale ranging from 0 (not at all) to 100 (extremely). The questionnaire has sound psychometric qualities (Cameron & Gusman, 2003). Mean scores will be calculated, ranging from 0 to 100.

Mood—measured before each session

Mood will be measured using a validated single item measure (van Rijnsbergen et al., 2012). For the purpose of this study, we have altered the item 'At the moment I feel' to 'In the last week I felt' to make the timespan congruent to the other presession measures for possible predictors. This mood item will be scored on a VAS-scale ranging from 0 (sad) to 100 (happy). Mean scores will be calculated, ranging from 0 to 100.

Critical incidents

Before each therapy session, the client will be asked to report if any relevant personal circumstances have arisen since the last appointment.

Other

Biographical data of patients will be collected (i.e., gender, age, educational level, current residence, legal status, country of birth) to describe the study population.

Questionnaire on Process of Recovery Short Version–15

The QPR is a 5-point scale (0-4), self-report questionnaire that probes people's recovery and meaningful aspects in the recovery process (e.g., 'I feel able to take chances in life.'). The QPR-15 consists of 15 items. Mean scores will be calculated, ranging from 0 to 4. The questionnaire has good psychometric properties, and has proven to be associated with quality of life, empowerment, and psychological wellbeing (Law et al., 2014). Administration of the questionnaire lasts approximately 20 minutes. The questionnaire has been selected because it represents psychological wellbeing beyond the scope of mental health symptoms. The QPR is reliable and valid, and has proven to be associated with quality of life, empowerment and psychological wellbeing (Law et al., 2014).

Early Trauma Inventory–short version

The Early Trauma Inventory–short version (ETI-SF) was developed to determine potentially traumatic events before and after the age of 18 years old (Bernstein et al., 2003). The ETI-SF comprises 27 items that assess physical, emotional, and sexual abuse. Items vary between open questions and multiple choice being answered with yes or no. The scale has a range from 0 to 29, with higher scores referring to a higher number of traumatic experiences. Administration of the questionnaire lasts approximately 10 minutes. Its reliability and validity are good (Bremmer et al., 2007). The questionnaire has been selected to describe trauma-related features of the study population.

Life Events Checklist (LEC–5)

The LEC-5 comprises 17 multiple choice items on a six-point nominal scale (i.e., 'happened to me', 'witnessed it', 'learned about it', 'part of my job', 'not sure', 'doesn't apply'). The checklist aims to determine whether someone has ever been exposed to 16 events

known to potentially result in PTSD or distress, and one additional event not captured in the first 16 items. In the last part of the LEC-5, respondents are asked which event he/she considers to have had the most impact, followed by seven questions, both open- and multiple-choice questions, aimed at identifying the characteristics of this event. The scale has a range from 0 to 68, with higher scores referring to a higher number of traumatic experiences. Administration of the questionnaire lasts approximately 20 minutes. The reliability of the LEC-5 is considered to be good (Gray et al., 2004). The questionnaire was selected to describe trauma-related features of the study population.

Data collection, management and analysis

Procedure pre-session measures

During baseline (T0) and at the start of each TFT session, the patient's fixed practitioner or a supervised master's level psychology student will administer the thirteen items selected to assess the four abovementioned possible predictors. To avoid an order effect, the sequence of the measures for possible predictors and the order of questions within every measure will change with every session. These measures will only be administered during the treatment period. They will be administered by pen and paper and are expected to take on average 10 minutes. Questionnaires are translated from their original English version according a forward-backward procedure by two independent native speakers into Dutch, and by professional translators into Arabic, French, Amharic and Tigrinya. Interpreters will assist for other languages.

Procedure pre- and post-treatment

During baseline (T0), post-treatment (T1) and follow-up (T2) measurements, the abovementioned set of questionnaires will be administered. See Figure 1 for a detailed overview of the planned time points for assessments. These questionnaires will be administered digitally and are expected to take a maximum of 80 minutes. Questionnaires are available in Dutch and English. Given the lack of computer skills and the often limited Dutch and/or English proficiency within the study population, a clinician and interpreter will be available for assistance. Measurements will take place at the treatment location; if preferred, this meeting will be combined with other appointments. After the last assessment, participants will receive a voucher of 10 euros.

Statistical analysis

First, multiple regression analyses and logistic regression analyses will be performed to examine whether high perceived daily stress, emotion dysregulation and low mood at baseline predict drop-out, no-show and treatment outcomes. Secondly, the concurrent association between each possible predictor measured prior to each session (i.e., perceived daily stress, emotion regulation and mood) and PTSD symptoms will be examined using bivariate (multilevel) growth modelling, as multiple observations of the

predictor variables and PTSD symptoms (level 1) are nested within individuals (level 2) (Snijders & Bosker, 1994). In order to infer that change in the predictor variables leads to change in PTSD symptoms, we will examine the timeline (i.e., temporal precedence) in two ways (Kazdin & Nock, 2003; Kreamer et al., 2000). The dynamic (i.e., temporal) associations will be examined by estimating whether change in PTSD symptoms from the previous week to the current week (t) can be predicted by change of a possible predictor at the previous week (t-1) using multilevel modelling. To examine the timeline of larger shifts instead of week-to-week changes, it will be examined whether the earliest significant decrease in mean levels of each possible predictor (improvement) occurs before the largest reduction in mean levels of PTSD symptoms.

DISCUSSION

Among the growing number of forcibly displaced people worldwide, many are suffering from trauma-related mental health problems. As psychological treatments for displaced persons with PTSD appear to be less successful than for other populations, insight is needed in factors that affect the feasibility of these treatments. However, relevant research is lacking. The ongoing trial presented in this paper is the first to examine the interplay of factors for feasibility and effectiveness of in displaced victims of interpersonal violence receiving NET. More specifically, the impact of perceived daily stress, emotion dysregulation, and disturbed mood on PTSD symptom changes during TFT are examined.

The theoretical basis of NET has been well documented, and its effectiveness has been examined in various studies and contexts (Halvorsen & Stenmark, 2010; Lely et al., 2019; Schauer et al., 2011). Yet, specific factors contributing to positive outcomes or constraining its feasibility are largely unidentified. In the current study, repeated measures will identify various constructs relevant for treatment feasibility and response of NET. Since, to our knowledge, this is the first study to use repeated measures within the target population, findings will additionally provide insight into the feasibility of this method for displaced populations.

As the method requires only minor adaptations to usual treatment proceedings and follows an observational design, participants can be included that might have to be excluded in more complex designs (Ross et al., 1999). This allows for conclusions based on a sample representing the intended population with high external validity, which is exceptional for this specific group (Enticott et al., 2017). Although our design favours generalisability of the results, it may reduce the internal validity of the study; for instance, the present design does not allow for the examination of the extent to which observed changes in PTSD can be attributed to NET, but to factors such as natural recovery, bias or confounders. However, as we aim to study factors promoting

or constraining treatment feasibility, a naturalistic design is the most ethical, feasible and time-efficient design to obtain answers to our research questions. Besides, the reduced internal validity is partially addressed by limiting the possibly confounding role of concurrent treatment.

Evidently, there are factors possibly impacting treatment response. For the purpose of this study, repeated measures were selected on the basis of relevant studies (Victor & Kolonsky, 2016; van Rijsbergen et al., 2012) and clinical insights. Thus, the set of questions have been tailored to the specific characteristics of the study population. Conclusions drawn from the study therefore may hold relevant implications in clinical practice for displaced victims of interpersonal violence. Although the chosen subscales support the clinical validity of the study, the PTSD and emotion dysregulation subscales have not been validated as weekly repeated measures.

It is important to note that inclusion for the current study has already started; however, it is planned to run until early 2021. Critically, no data analysis has currently been performed yet.

We expect that the findings of this study will contribute to both the scientific and the clinical field. Identifying factors that limit treatment response may in turn inform the development of improved treatment modules that specifically address these blockages. The promotion of self-efficacy or problem-solving skills prior to NET, for example, may decrease perceived daily stress and its constraining effect on the feasibility of NET. Likewise, promoting emotion regulation prior to NET may intensify its potential supportive role for TFT. Additionally, if these factors have no predictive value for the course of PTSD during treatment, clinicians might be encouraged to offer TFT to patients despite the presence of daily stressors, emotion regulation difficulties and mood problems. By identifying predictors of treatment response, the current study can enable treatment indications to be tailored to individual characteristics.

Furthermore, exploring these predictors sheds a broader light on the consequences of trauma, beyond a narrow focus on PTSD, and may provide clues for a wider range of relevant treatment foci. In this way, this study responds to the ongoing debate on the emphasis focus of PTSD in designing treatments for displaced populations (Miller & Rasmussen, 2010).

Abbreviations

ETI: Early Trauma Inventory; DERS: Difficulties in Emotion Regulation Scale; LEC: Life Events Checklist; NET: Narrative exposure therapy; PCL: PTSD Checklist for DSM-5; PCPTSD: Primary Care Post-Traumatic Stress Disorder; PSS: Perceived Stress Scale; PTSD: Post-Traumatic stress disorder; QPR: Questionnaire on Process of Recovery; TFT: Trauma-Focussed Therapy.

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Authors' contributions
HvH, RG and WS initiated the study based on the identified clinical relevance. HvH and RG are the primary investigators of the study, designed the study and are the primary authors of the protocol as well as this manuscript. WS and PB are the primary supervisors and participated in the design of the study and helped to draft and revise the protocol and this manuscript. ES has participated in designing the study, helped to draft the protocol, has revised the manuscript and will be supervising the interpretation of data. LV, JvdK, FtH and SdlR are the clinical team leaders in the mental health care facilities in which the study is conducted, they have advised in the design of the study protocol and are involved in the data collection and monitoring of the study. All authors read and approved the final manuscript.

Availability of data and materials
The datasets generated and/or analysed during the current study are not publicly available due to confidentiality of the patient data but are available from the corresponding author on reasonable request. Scientific papers will be written based on the collected data. For secondary data-analysis, the first authors can be contacted.

Competing interests
The authors declare that they have no competing interests.

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The relevance of perceived daily stress, emotion regulation, and mood for PTSD trajectories among forced migrants receiving trauma focussed therapy

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ABSTRACT

Background
Trauma-focussed therapies for forced migrants need optimalisation. Post-Traumatic Stress Disorder (PTSD) is partially affected by daily stressors, emotion regulation and depressive symptoms for this group. It is unclear how these factors affect PTSD trajectories during engagement in trauma-focussed therapies.

Aims
First, to examine changes in Post-Traumatic Stress Symptoms (PTS), perceived daily stress, emotion regulation, and depressed mood during Narrative Exposure Therapy (NET). Second, to determine if these changes are related. Third, to establish the temporal relation between emerging trajectories.

Method
Eighty-six forced migrants with a diagnosis of PTSD were included. Data from forty participants were eligible for data analysis. Questionnaires were administered every NET session using the Primary Care Post-Traumatic Stress Disorder checklist, the Perceived Stress Scale, the impulsivity subscale of the Difficulties in Emotion Regulation Scale, and a single item for depressed mood. Latent growth modeling and random-intercept cross-lagged modeling were applied, using Bayesian statistics.

Results
NET coincides with improvements in PTS, -3.789 [-5.603, -1.980], perceived daily stress, -3.905 [-5.930, -1.909], and emotion regulation, -3.61 [-6.298, -0.839]. Changes in perceived daily stress and PTS were interrelated, 0.808 [0.495, 0.999], but no lagged effect for perceived daily stress on PTS was found. Other associations could not be identified due to limited model fit.

Conclusions
Findings reveal that changes during NET transcend the reduction of PTS, extending to improvements in perceived daily stress and emotion regulation. Levels of perceived daily stress were not a prerequisite for later PTS levels.

Trial Registration Number
NL61808.058.17

Keywords
Forced migrants, post-traumatic stress disorder, perceived daily stress, emotion regulation, narrative exposure therapy, treatment response.

BACKGROUND

Forced migrants, including refugees, asylum seekers, and survivors of sex trafficking, are at elevated risk to develop mental health disorders like Post-Traumatic Stress Disorder (PTSD) (Blackmore et al., 2020). Notwithstanding the evidence-base supporting the effectiveness of psychotherapies for PTSD (Kip et al., 2020) in this growing population (UNHCR, 2022), many forced migrants remain ill after receiving trauma focussed treatment (TFT) (Nosè et al., 2017). Identifying how TFT and PTSD symptoms are impacted by relevant factors could improve treatment response within this population. The current study therefore taps into social and psychological factors that are potentially related to, and even predictive for, trajectories of PTSD during TFT. First, daily stressors, including challenging life circumstances due to the process of migration and resettlement, characterise the experiences of forced migrants. They are an established risk factor for mental health impairments in this group (Nickerson et al., 2022). In one study among refugees, no effect of clinician rated daily stressors on post-treatment PTSD changes was found (Bruhn et al., 2018). Another study established an effect of negative life-events occurring during treatment on PTSD symptoms in the subsequent session, but not on the overall treatment effect (Kaltenbach et al., 2020). These findings question the impact of daily stressors on PTSD treatment response. Second, emotion (dys)regulation is a critical transdiagnostic factor thought to underly the development and persistence of PTSD symptoms (Seligowski et al., 2015), also in forced migrants (Koch et al., 2020). Moreover, research suggests emotion (dys)regulation to be an important mechanism for treatment response amongst PTSD patients (Wisco et al., 2013). For forced migrants suffering from PTSD, living in uncertainty and dealing with daily stressors, emotion regulation skills might be a key factor for benefiting from TFT. Lastly, symptoms of depression are a relevant factor to consider for their influence during TFT, due to their relation with PTSD symptoms among refugees over time (Nickerson et al., 2022). Low PTSD treatment response was found to be predicted by baseline depression severity among refugees (Haagen et al., 2017). Moreover, among other samples PTSD and depression predicted each other's course during TFT (Brown et al., 2018). Hence, depression may be an inhibitory factor for PTSD symptom reduction during TFT.

AIM

The overarching aim of the current study was to examine the relevance of perceived daily stress, emotion regulation, and depressed mood for PTSD symptom change, in a group of forced migrants engaging in a TFT, namely Narrative Exposure Therapy (NET). The following hypotheses were tested:

First, PTSD symptoms, perceived daily stress, emotion regulation, and depressed

mood improved during NET. Second, changes in PTSD symptoms coincided with changes in perceived daily stress, emotion regulation, and depressed mood during NET. Last, levels of perceived daily stress, emotion regulation, and depressed mood predicted subsequent levels of PTSD symptoms during NET.

METHODS

Setting and design

An uncontrolled observational design was applied, with two types of repeated measures: i) prior to each NET session, and ii) at pre-treatment, post-treatment, and 6-week follow-up. The study operationalisation and aims are aligned with the peer-reviewed study protocol (Ghafoerkhan et al., 2020). The medical ethical comity of Leiden University approved the study and the study was registered at the Dutch Trail register (NL61808.058.17: https://www.toetsingonline.nl/to/ccmo_search.nsf/fABRpop?readform&unids=D707FF3CE1AFE7D3C125881F00152BB7).

The study was carried out between 2018 and 2022 at ARQ Centrum'45 in the Amsterdam region of the Netherlands. This is an outpatient facility, specialised in the provision of mental health care in the field of trauma-related psychopathology. NET was applied by medical (psychiatrists, psychiatrists in training, and non-specialised medical doctors) and (master-level and post-master-level) psychological professionals. All practitioners were trained in NET. Interpreters were used when necessary.

Participants

Forced migrants who met the following inclusion criteria were invited to participate in the study:

i) PTSD as a primary diagnosis established by a licensed mental health professional;
ii) a clinical indication for NET as determined by a multidisciplinary team;
iii) aged 18 years or older;
iv) cognitively able to give informed consent.

Exclusion criteria were:

i) acute mental health crisis, such as acute severe psychosis, persistent substance abuse, or acute suicidality;
ii) previous engagement in TFT less than six months ago.

In total 86 patients gave informed consent for participation, 40 of whom completed NET according to the study protocol.

Questionnaires

Pre-session measurements

Four (sub)scales were administered at the start of each NET session, measuring Post-Traumatic Stress Symptoms (PTS), perceived daily stress, emotion regulation, and depressed mood, respectively. All items were rated on a VAS-scale ranging from 0 (not at all) to 100 (extremely). To prevent an order effect, the items were listed in a random order that varied for every timepoint. This variation was equal for all participants. Items were originally in English and translated in the following languages: Dutch, Farsi, French, Arabic, Amharic, and Tigrinya.

PTS were assessed through the Primary Care Post-Traumatic Stress Disorder (PCPTSD) checklist. This is a five-item screening tool for PTSD according to the DSM-5, with acceptable psychometric properties (Bovin et al., 2021; Lathan et al., 2023). The PCPTSD was applied among forced migrants before (Aoun et al., 2018). The original timespan (one month) was adapted to 'one week', to concord with the frequency in which the scale was administered in the current study. An example item is: 'In the last week did you have nightmares about the event(s) or thoughts about the event(s) when you did not want to?' Mean scores were calculated for the five questions. The Cronbach's alpha for the dataset of this study, as calculated for the first measurement, was good (.71).

Perceived daily stress was measured via the four items version of the Perceived Stress Scale (PSS-4). The scale has acceptable psychometric properties (She et al., 2021) and was proven to be sensitive to fluctuations in daily stress during psychological intervention (Bear et al., 2012). The indicated timespan was changed from 'in the last month' into 'in the last week' (e.g., 'In the last week, how often have you felt that things were going your way?'). Mean scores were calculated for the four items. The PSS-4 had acceptable internal consistency, calculated for the first measurement (Cronbach's alpha = .67).

Emotion regulation was assessed with the three items subscale 'impulsivity' of the Difficulties in Emotion Regulation Scale (DERS-18) (Victor & Klonsky, 2016) which has good psychometric properties (Hallion et al., 2018). The questionnaire consists of statements, like 'When I'm upset I become out of control'. 'In the last week I have felt' was added to the statements to accord with the other constructs that were measured every session. Average scores of the three items were calculated. The subscale had good internal consistency in the current study, calculated for the first measurement (Cronbach's alpha = .88).

Depressed mood was measured by use of a validated single item (van Rijsbergen et al., 2012). To accord the timespan of this item with the other items registered every session, the original statement 'At the moment I feel' was altered into 'In the last week I felt'.

Pre-treatment and post-treatment measures

The PTSD Checklist for DSM-5 (PCL-5) (Blevins et al., 2015) was used to measure PTSD symptoms. Internal consistency during baseline was good in this study (Cronbach's alpha .87). The Perceived Stress Scale (PSS) (Cohen et al., 1983) was used to measure the extent to which participants experienced their lives as stressful. The internal consistency of this instrument was good at baseline (Cronbach's alpha .71). The DERS-18 (Victor & Klonsky, 2016) was used to measure general emotion regulation. This instrument had good internal consistency during baseline measurements in this study (Cronbach's alpha .78). The Questionnaire on the Process of Recovery Short Version-15 (QPR) (Law et al., 2014) was used to measure the patients' perspectives on their stage of personal recovery. The scale had good internal consistency for the current study during baseline (Cronbach's alpha .87). For a more extensive overview of the mentioned questionnaires see Ghafoerkhan et al. (2020).

Intervention

NET is an evidence supported TFT for forced migrants including refugees (Lely et al., 2019) and victims of human trafficking (Brady et al., 2021). During NET, traumatic, positive, and bereavement-related memories are addressed in chronological order using a 'life-line', supported by materials such as a rope, stones, flowers, and candles. NET is focussed on re-processing these memories by integrating their contextual and sensory information and exposing the person to the highly arousing details of the memory. In so doing, the narrative of one's personal life story becomes more coherent and integrated and space is created for reflection. The treatment protocol advises 12-16 sessions with a duration of 90-120 minutes which are performed by professionals trained in NET (Schauer et al., 2011).

Procedure

Patients eligible for participation were informed about the study via their practitioner or a researcher. If they gave written informed consent for participation, NET-practitioners were informed by a researcher about the research protocol which entailed adherence to the NET protocol and the administration of a questionnaire at the beginning of each session. When needed, for example due to time constraints, master level psychology students or psychologists took on this assessment. Additionally, baseline measurements were conducted within the timeframe of one week to immediately before the first NET session. Post-treatment measurements were planned up to one week, and follow-up up to six weeks after the last session. Interpreters were used when participants did not master any of the languages the questionnaires were available in.

The duration of treatment and the total number of sessions varied between participants. This was partly due to practical obstacles interfering with treatment adherence, and partly to the NET protocol, which is determined by the personal lifeline

of patients instead of a fixed number of sessions (Schauer et al., 2011). Although the protocol indicates a maximum of 16 sessions, an increase in the total amount of sessions was allowed to suit clinical practice. Participants were excluded from the study and considered drop-out when after 20 sessions no clear treatment end point could be set, based on maximum NET duration in previous research (Siehl et al., 2022). This resulted in a maximum of 23 sessions. Additionally, NET sessions were sometimes cancelled, resulting in an extension of therapy duration in some cases. During NET no other interventions were allowed other than crisis interventions, routine therapy evaluations (standard procedure in the Dutch mental health system), (ongoing) psychopharmacological treatment, and social work consultations.

Since part of the study took place during several phases of the COVID pandemic, in a small number of cases online sessions were allowed and participants remained in the study as long as the majority of the sessions were performed face-to-face.

Statistical analyses

Descriptive statistics were calculated in SPSS for windows, version 27. Independent t-test were performed, using pre-treatment measures, to compare completers versus drop-outs at baseline. Change scores from pre- tot post-treatment were calculated and used to describe the sample in terms of PTSD treatment response according to established guidelines (U.S. department of Veteran Affairs, 2022). Only available data was used, missing data at T0 (DERS 5%, PCL 7%, PSS 2%, QPR5%) and T1 (PCL 3%) were not taken into account.

Furter data analyses were performed in MPlus, version 8.6 (Muthen and Muthen 1998-2021). Bayesian latent growth modeling (LGM) and random-intercept cross-lagged modeling (RI-CLM) were applied, based on five timepoints. LGM was used to evaluate i) changes in PTS, perceived daily stress, emotion regulation and depressed mood and ii) the interrelatedness of the slopes in PTS, perceived daily stress, emotion regulation and depressed mood during NET. First, changes in the four constructs (i.e., PTS, perceived daily stress, emotion regulation and depressed mood) were analysed over time. To estimate the significance of the trajectories, linear slope estimation was applied and related to the repeated longitudinal measures. Second, changes were matched between PTS and other constructs. For linear models with insufficient fit it was checked whether adding quadratic slopes would improve the model.

Next, RI-CLM was used to analyse cross-lagged associations between PTS and the other constructs. The RI-CLM was applied to account for individual variations in all outcomes (Hamaker et al., 2015). In these analyses it was investigated whether scores of perceived daily stress, emotion regulation, and depressed mood predicted subsequent scores of PTS during NET. Additionally, individual data plots of the trajectories of PTS, perceived daily stress, emotion regulation and mood were made. These plots were used to illustrate how group findings related to the individual trajectories.

Next to the posterior predictive p-value (PPP-value) to evaluate the model fit, several Bayesian alternatives to the classical metrics were used. The required classical cut-off score of > .90 had to be represented in the confidence interval of the Bayesian alternatives of the comparative fit index (CFI), Tucker-Lewis index (TLI). The Bayesian root mean square error of approximation (RMSEA) was considered if the range included < .10.

To deal with the limited sample size, the residual variances of the indicator variables were restricted to be the same over time. Moreover, the coherence in slopes was considered but the intercepts between the factors was fixed. Furthermore, Bayesian estimation was employed, using weakly informative priors covering the entire plausible parameter space on the mean intercept and slope to deal with the small sample size (van de Schoot et al., 2015).

The 'When to worry and how to Avoid the Misuse of Bayesian Statistics checklist' was followed to evaluate convergence (Dapaoli & van de Schoot, 2017). To obtain reliable results, the number of iterations was increased up to the point the potential scale reduction factor was always smaller than 1.05 for all iterations post-burn-in with a minimum of 5000 iterations (times 4 chains) to obtain enough precision for approximating the posterior distribution. Also, all trace plots display the mixing of the four chains, and the results are stable in terms of mean and variance across the entire post-burn-in phase.

Because both the number of sessions and the total treatment duration varied, the analyses were based on an arranged standardised selection of the dataset. Five sessions were selected for each participant at fixed time points. Specifically, data from the first session (T1) and the sessions taking place at 25% (T2), 50% (T3), and 75% (T4) of the treatment time period, and from the last session (T5) were included. This was done to map the changes that participants underwent during the entire treatment process, while allowing for individual variance in treatment duration and number of treatment sessions. Missing data (7.5%) were approached by including data of a near session; when these data were not available data of the timepoint in question (T2) remained missing (0.5%).

In our pre-registered study protocol (Ghafoerkhan et al., 2020) we planned to analyse change scores between timepoints. In the current paper we, however, chose to apply the RI-CLPM on fixed scores at the five timepoints. Furthermore, due to limited response rates at follow-up (PCL 67%), this timepoint was not taken into account.

A robustness check was done to see if findings based on these data, computed from a standardised selection based on treatment duration, would hold in other selections of the data. Hence, analyses were also performed using two other parts of the data. First, data from the first eight NET sessions were considered. Second, we focussed on data from 5 sessions based on the total number of sessions (e.g., the first session, sessions taking place in 25%, 50%, 75% of the total amount of sessions, and the last

session). Unfortunately, the fit indices (predictive p-value, CFI, TLI and RMSEA) for these datapoints were insufficient for both selections, and therefore these data approaches were not taken into account.

RESULTS

Participants

In total 40 participants completed NET according to the study protocol, and 46 dropped out. Main reasons for drop-out were more sessions than allowed for in the protocol (*n* = 13), more than 3 consecutive no-shows (*n* = 8), the emotional burden of NET being too high (*n* = 6), withdrawing from the study (*n* = 6), not able or willing to finish baseline measurement (*n* = 4), interference by life circumstances and events (*n* = 3), COVID-19 (*n* = 3), factors relating to the practitioner/institute (*n* = 2), and unmotivated for NET (*n* = 1). No significant differences between completers and drop-outs were found on baseline PCL-5, DERS-18, QPR or PSS scores, using independent t-tests.

The completers' PCL-5 change (baseline to post-treatment) scores revealed that 5% had a clinically meaningful deterioration of at least 10 points increase, 40.5% had a clinically meaningful improvement of at least 10 points decrease, and 54.5% showed no clinically meaningful changes, based on validated cut-of scores (U.S. Departement of Veteran Affairs, 2022). See Table 1 for the participants' characteristics.

Table 1
Sample Characteristics

	Drop-out			Completers		
	Group %	M (SD)	Range	Group %	M (SD)	Range
Female	45.7			32.5		
Region of origin						
Africa	56.5			67.5		
Middle East	23.9			20		
Eastern Europe	10.9			12		
Other	8.7			0		
Number NET sessions	100	9.35 (8.31)	0-24	100	14.73 (4.05)	8-23
Duration NET in days*	71.7	126.09 (90.31)	0-286	100	150.70 (65.91)	68-352
Baseline scores						
PCL	91.3	54.83 (13.00)	6-79	95	54.24 (11.08)	27-73
DERS	91.3	58.83 (11.42)	28-84	100	57.50 (10.46)	32-78
PSS	95.7	26.34 (5.17)	11-36	100	27.18 (6.21)	14-39
QPR	89.1	33.24 (10.68)	10-55	95	30.24 (11.05)	5-50
Post treatment scores						
PCL				97.5	46.87 (15.45)	14-74
First session scores						
PTS				100	66.21 (16.66)	35.04-100

Table 1 *Continued.*

	Drop-out			Completers		
	Group %	M (SD)	Range	Group %	M (SD)	Range
PSS-4				100	70.32 (20.10)	22.25-100
EMO				100	42.93 (32.07)	0.00-100
Mood				100	76.50 (21.74)	28.00-100
Last session scores						
PTS				100	49.68 (21.74)	0.40-95.40
PSS-4				100	54.70 (25.67)	0.00-100
EMO				100	32.68 (25.96)	0.00-85.33
Mood				100	59.18 (26.09)	0.00-100

Note. N = 86, for drop-outs this was N = 46, for completers this was N = 40. Mean age at start NET was 36.70 (SD = 10.20) for drop-outs and 33.53 (SD = 11.39) for completers. DERS= Difficulties in Emotion Regulation Scale -18; EMO = Subscale 'impulsivity' of the Difficulties in Emotion Regulation Scale; Mood = Single mood item; NET = Narrative Exposure Treatment; PCL = PTSD Checklist for DSM-5; PSS = Perceived Stress Scale; PSS-4 = Perceived Stress Scale-4; PTS = Primary Care Post-Traumatic Stress Disorder; QPR = Questionnaire on the Process of Recovery Short Version-15.
*duration of NET was only calculated for participants who finished T0 and started NET afterwards.

Table 2
Fit Indices and Outcomes for Multi-Level Models

	PPP-Value	B_RMSEA	B_CFI	B_TLI	Intercept [95% CI]	Slope [95% CI]
Latent growth modelling						
PTS	.51	0.00 to 0.10	0.88 to 1.00	0.92 to 1.00	67.26 [62.55 - 72.10]	-3.79 [-5.60 - 1.98]**
PSS	.21	0.06 to 0.15	0.85 to 0.98	0.90 to 0.99	70.52 [65.32 -75.98]	-3.91 [-5.93 - 1.91]**
EMO	.23	0.00 to 0.15	0.86 to 1.00	0.91 to 1.00	52.38 [43.55 - 61.92]	-3.61 [-6.30 - 0.84]**
Mood	.04	0.13 to 0.19	0.69 to 0.86	0.79 to 0.90	75.80 [69.16 - 82.53]	-4.58 [-7.06 - 1.90]**
PTS with PSS	.17	0.07 to 0.13	0.81 to 0.95	0.83 to 0.95	0.78 [0.46 – 1.00]	0.81 [0.50 – 1.00]**
PTS with EMO	.00	0.14 to 0.18	0.68 to 0.80	0.71 to 0.82	0.59 [0.22 – 0.88]	0.82 [0.45 – 1.00]
PTS with Mood	.01	0.12 to 0.16	0.66 to 0.82	0.69 to 0.83	0.65 [0.26 - 1.00]	0.60 [0.19 - 0.96]
Cross-lagged panel modelling						
PSS on PTS	.45	0.00 to 0.14	0.87 to 1.00	0.82 to 1.00		
EMO on PTS	.13	0.08 to 0.17	0.81 to 0.96	0.73 to 0.94		
Mood on PTS	.07	0.11 to 0.19	0.71 to 0.90	0.60 to 0.87		

Note. B_CFI = Bayesian Comparative Fit Index; B_RMSE = Bayesian Root Mean Square Error of Approximation; B_TLI = Bayesian Tucker Lewis Index; CI = Confidence Interval; EMO = Subscale 'impulsivity' of the Difficulties in Emotion Regulation Scale; Mood = Single mood item; On = cross lagged association in growth trajectories; PPP-Value = posterior predictive p-value; PSS = Perceived Stress Scale (PSS-4); PTS = Primary Care Post-Traumatic Stress Disorder; With = relation in growth trajectories.
* $p < .05$; ** $p < .01$.

LGM and RI-CLM

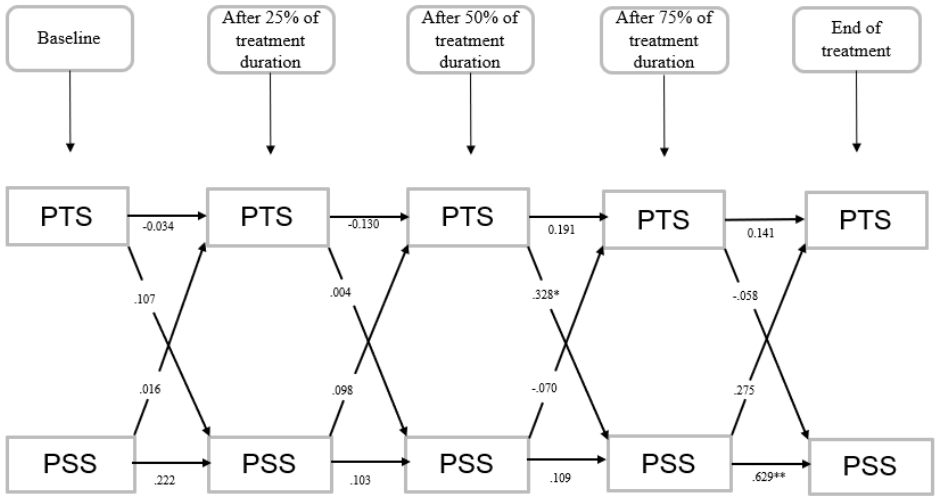
Findings from LGM (Table 2) and RI-CLM (Table 2 and Figure 1) are presented. Fit indices were poor for the following analyses: 1) latent growth models for depressive mood, 2) the interrelatedness of depressive mood with PTS, 3) the interrelatedness of emotion regulation with PTS, 4) the cross-lagged association between depressed mood and PTS, and 5) the cross-lagged association between emotion regulation and PTS. Therefore,

outcomes related to these analyses were considered unreliable and not considered further. Adding quadratic slopes to the LGM did not result in sufficient model fit for these outcomes.

LGM revealed that PTS, perceived daily stress, and emotion regulation improved during NET. Additionally, improvements in perceived daily stress and PTS were related. Lastly, the cross-lagged associations between perceived daily stress and PTS were significant in one occasion, namely lower PTS on T3 significantly predicted lower perceived daily stress on T4.

Figure 1

Standardised Autoregressive and Cross-Lagged Coefficients with Random Intercepts Between Perceived Stress and PTSD symptoms

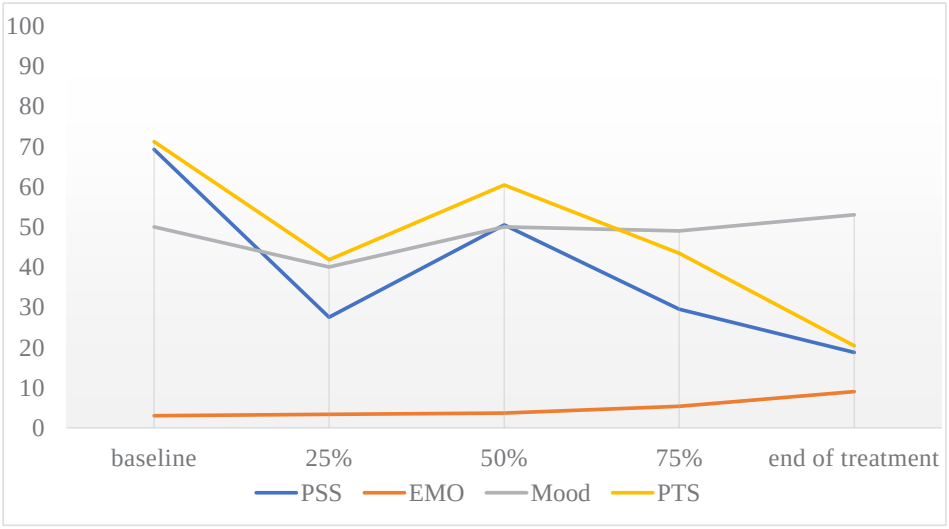


Note. PSS = Perceived Stress Scale (PSS-4); PTS = Primary Care Post-Traumatic Stress Disorder.
* $p < .05$; ** $p < .01$.

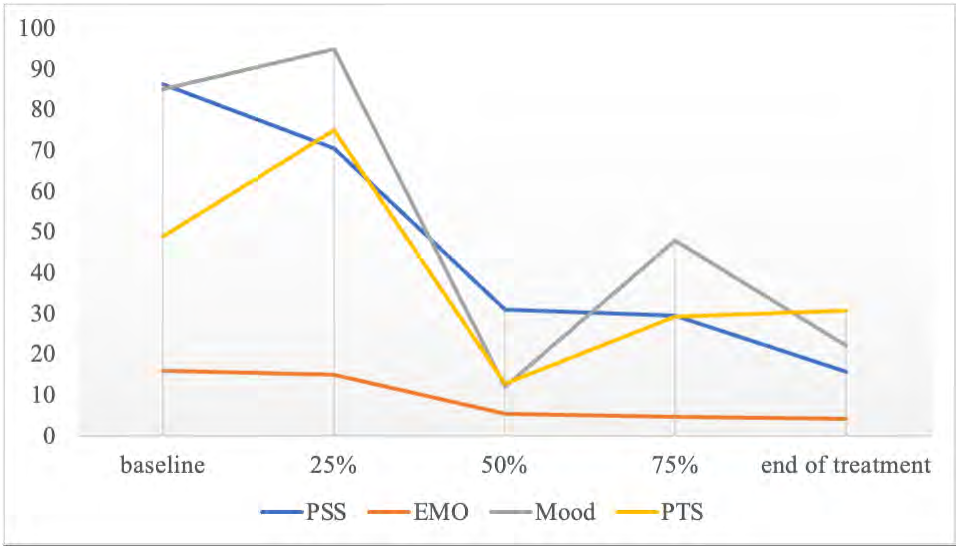
Individual data plots

The individual data show that the different constructs can appear in different relations. In some cases PTS develops parallel to other constructs, like perceived daily stress (see Figure 2, participant 1). Also, these constructs may develop sequentially in the same direction as PTS. For example, PTS can decrease one timepoint later than perceived daily stress (see Figure 2, participant 2). In other cases no coherence can be observed on face value (see Figure 2, participant 3). Also, it stands out that changes in the different constructs are not always rectilinear and can fluctuate between the different timepoints. For a complete overview of all individual trajectories, see Appendix 1.

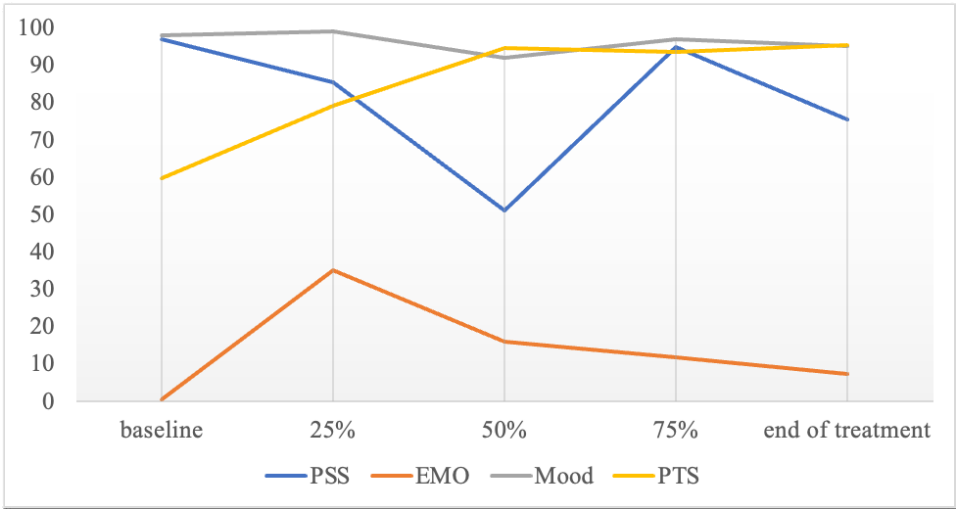
Figure 2
Individual Trajectories of PTS, Perceived Stress, Emotion Regulation and Mood Scores
Participant 1. Simultaneous change in changes in PTS and PSS



Participant 2. Sequential order in changes in PTS (timepoint 2- 3) and PSS (timepoint 1- 2).



Participant 3. No face value relation between the changes in PTS and most other constructs



Note. 25% = after 25% of treatment duration; 50% = after 50% of treatment duration; 75% = after 75% of treatment duration; EMO = Subscale 'impulsivity' of the Difficulties in Emotion Regulation Scale; Mood = Single mood item; PTS = Primary Care Post-Traumatic Stress Disorder; PSS = Perceived Stress Scale (PSS-4).

DISCUSSION

Main findings

Our study investigated how PTS, perceived daily stress, emotion regulation, and depressed mood develop during NET, and if trajectories in the latter three constructs are related to trajectories in PTS.

In concordance with our hypotheses, all measured constructs changed during the course of NET, although the model fit was inappropriate for depressed mood which therefore could not be interpreted. Considering the individual trajectories, it is clear that changes are not rectilinear for all outcomes. Hence, trajectories are capricious during NET, in line with previous findings on the course of PTS (Kaltenbach et al., 2020). Although NET primarily focusses on changing PTS, the established improvements in perceived daily stress and emotion regulation may be considered as secondary gains. This is relevant since the amount of experienced stressors (Nickerson et al., 2022) as well as problems with emotion regulation (Koch et al., 2020) are prevalent and establish risk factors for PTSD among forced migrants.

Analyses of the associations of PTS and perceived daily stress trajectories revealed that the course of both constructs was related. This indicates that PTS and perceived daily stress undergo comparable changes during NET, in line with our expectations. The strong simultaneous relation between both constructs suggests that perceived daily stress and PTS can overlap. Contrary to our hypothesis, we did not find that perceived

daily stress scores predicted subsequent scores of PTS, although the association was pronounced at one timepoint. Several explanations for this finding could be considered. First, levels of perceived daily stress may not determine PTS levels. Both concepts may be driven by other indicators than each other. For example, perceived daily stress and PTS may change as a consequence of treatment without having any impact on each other. A second explanation is that the potential interdependency of these concepts follows another time sequence than applied in the current study, and can only be captured in shorter time lags (Dorman & Griffin, 2015).

Although findings on the lagged impact of PTS on other outcomes were not included in our study aims, it is noteworthy that PTS significantly predicted perceived daily stress on one timepoint. This indicates that levels of PTS can matter for subsequent levels of perceived daily stress, which is an extra encouragement to alter PTS levels through TFTs among socially burdened individuals.

Unfortunately, our models for exposing interrelatedness in PTS levels with levels of depressed mood and emotion dysregulation did not fit our data. Although no straightforward explanations can be given for this, it could be due to having a too small sample size for the complexity of the model tested. Additionally, considering the individual trajectories, it was observed that the courses of PTS, perceived daily stress, depressed mood, and emotion regulation can be capricious and therewith hard to fit in the applied models.

Strengths and limitations

The current study has several relevant limitations. First, there was a relatively small number of completers, as mentioned above, which diminished the stability of our analytical models and increased the risk of Type II error (Shreffler & Huecker, 2022). Second, observational data were used, without adding a control condition. Hence, it remains unknown to what extent changes in perceived daily stress, emotion regulation and PTS observed in this study can be attributed to the process of NET. Future studies are encouraged to test if the findings hold in larger samples with a control condition. It is also noteworthy that the study had a high drop-out rate and participants dropping out might have shown other patterns of change and relatedness between the constructs. Therefore, our results are limited to forced migrants who are capable of finishing a TFT. In future studies, exploration on the reasons for drop-out and adherence in comparable samples is warranted. Third, the data were collected via self-report questionnaires, increasing the risk of response tendency (Wetzel et al., 2016). Moreover, these questionnaires were applied as VAS-scales which is an innovative but yet unvalidated manner, which increases the risk of measurement errors (Dowrick et al., 2015). Therefore, future work is encouraged to use questionnaires validated for forced migrants with various backgrounds, in replications studies. Fourth, the study was based on clinical and scientific knowledge, but participants' views were not included in the

study design. This may have constrained an adequate representation of the participants' needs in the study objectives (Caron-Flinterman et al., 2005). Comparable future studies are recommended to involve participants in designing the study to increase external validity. The study also contains important strengths. The study protocol was designed to allow for a high external validity. The study closely matched clinical practice as carried out at the study site. Furthermore, to the best of our knowledge, this is the first study that collected data on four different relevant outcomes during the course of therapy among forced migrants. Therewith it proves the feasibility of collecting data on multiple outcomes among forced migrants during the therapy. Lastly, the unconfirmed hypotheses of this paper strengthen previous comparable (Kaltenbach et al., 2020) and unexpected (Bruhn et al., 2018; Schick et al., 2018) results on daily stressors and PTSD after treatment. Although non-significant findings are unsuitable for confirming null-hypotheses, an accumulation of non-detectable relations gives input for reconsidering expectations. Evidently, future research is warranted to investigate this provoked insecurity regarding the constraining impact of daily stressors on TFT effectivity.

Implications

Findings on group level reveal that changes during trauma focussed therapy transcend a reduction in PTS, extending to improvements in perceived daily and emotion regulation stress. Following this, clinicians are advised to apply NET for traumatised forced migrants, also when they experience their daily lives as stressful and encounter difficulties with controlling emotions. Meanwhile, the individual trajectories point out that improvements can be capricious on all outcomes. Additionally, the interrelatedness of perceived daily stress and PTSD symptomatology was confirmed but there was no evidence for the impact of reduced perceived daily stress on subsequent PTSD symptom reduction. Since evidence within the study does not confirm the potential impeding role of perceived daily stress for PTS trajectories, clinicians are encouraged to provide NET to socially burdened patients.

Declaration of interests

All authors have no interests to declare.

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Author contribution

Study design: HvH, RG, data-collection supervision: HvH, RG project supervision: WS, PB, data-analyses: HvH, RG, RvdS, manuscript writing: HvH; manuscript revision: RG; WS; PB; RvdS; preparing manuscript for submission: HvH.

Data availability

Data can be requested via the corresponding author. Depending on the intended goal and data management conditions, available data will be shared for secondary analysis.

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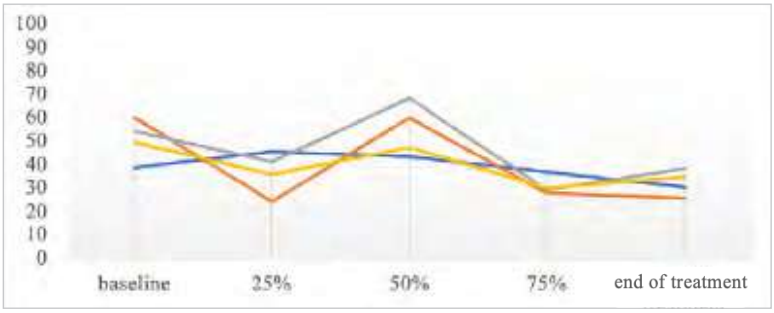
APPENDIX 1

Individual Trajectories of PTS, Perceived Stress, Emotion Regulation and Mood Scores

Participant A1



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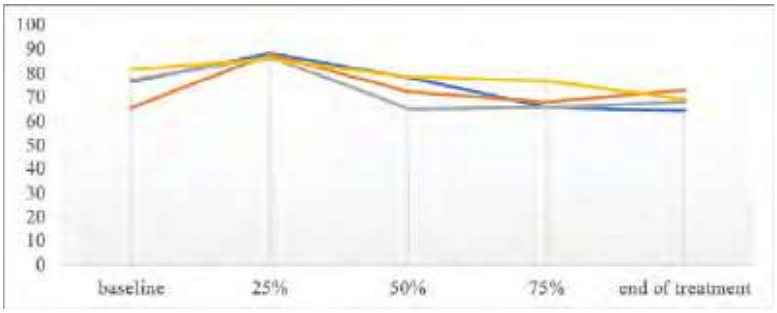

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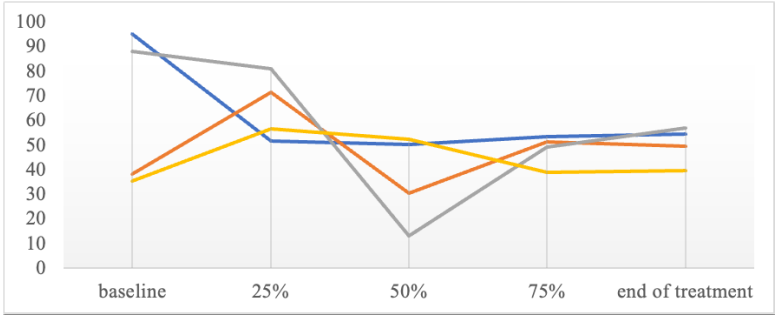

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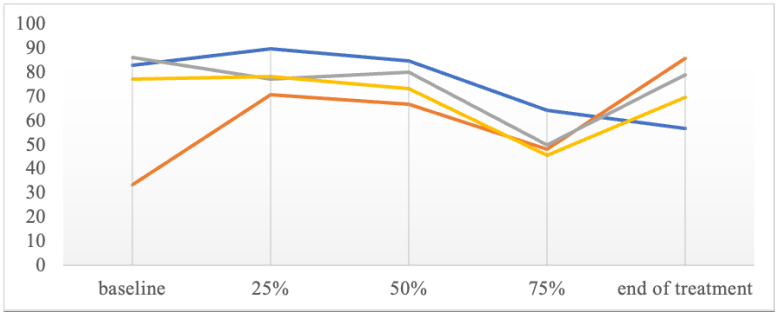

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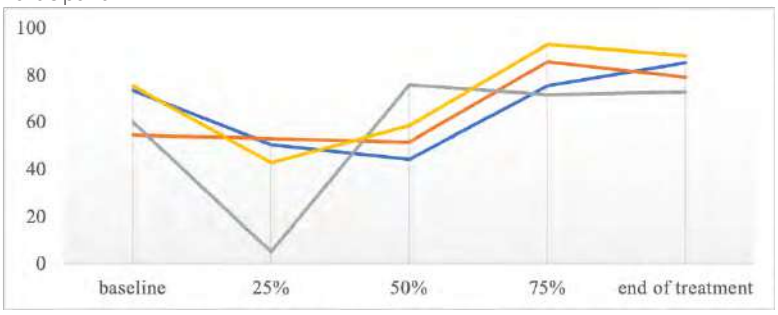

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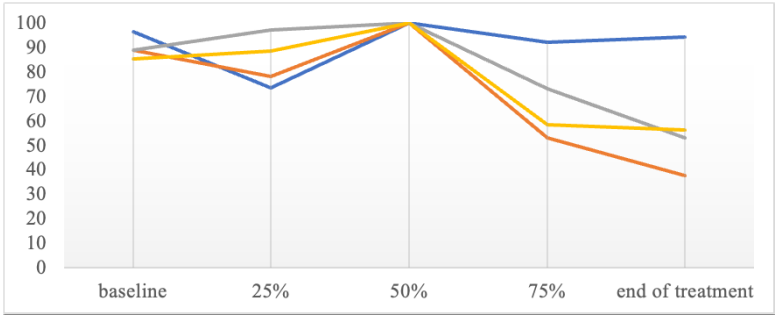

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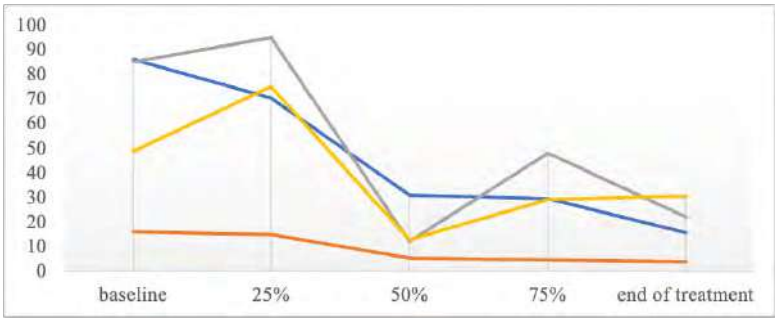

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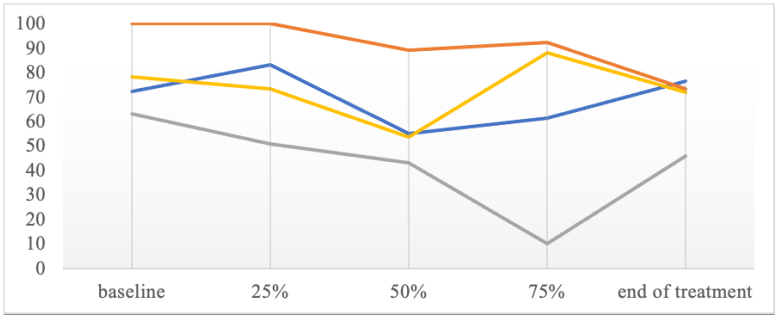

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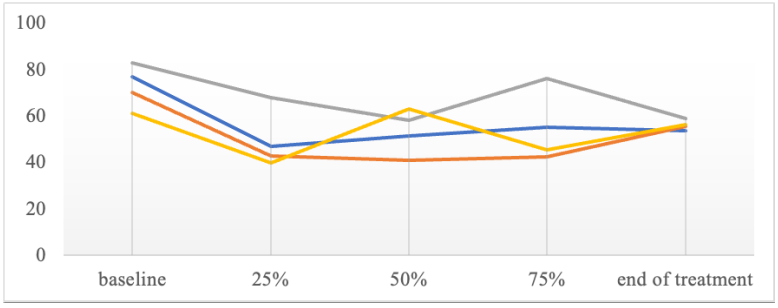

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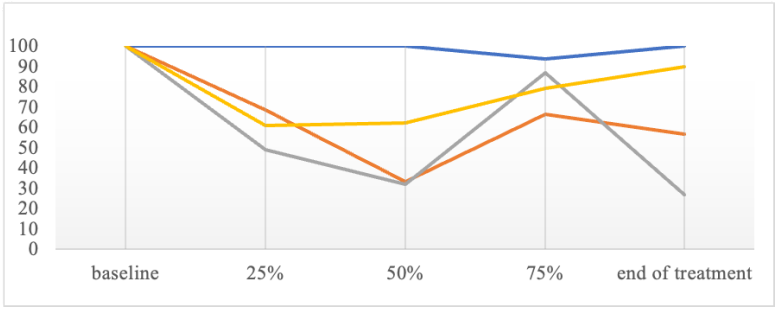

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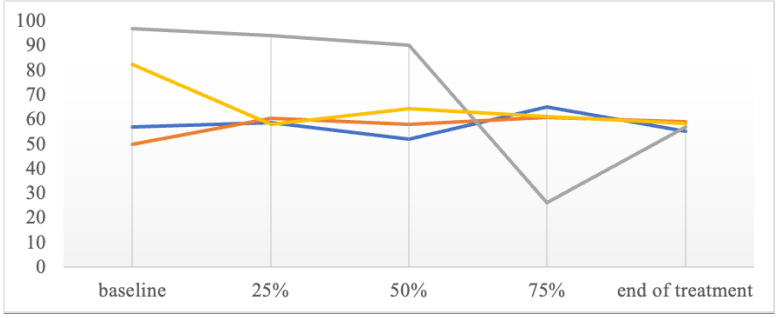

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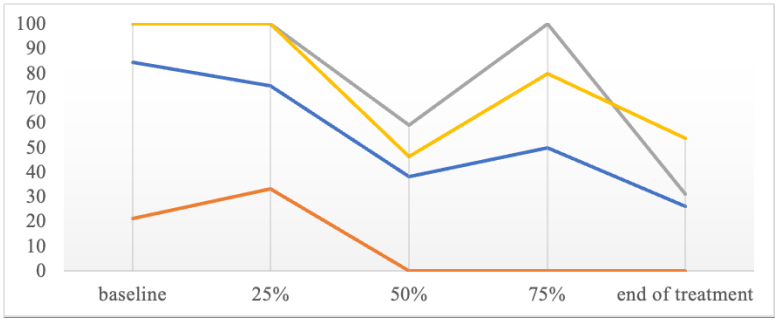

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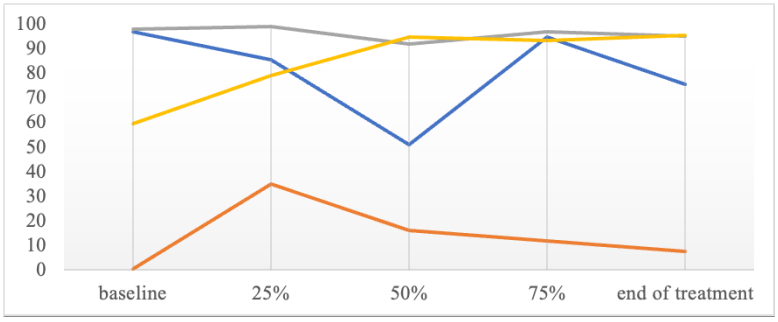

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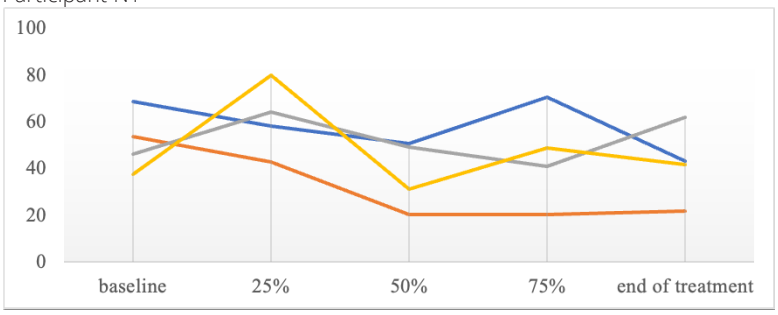

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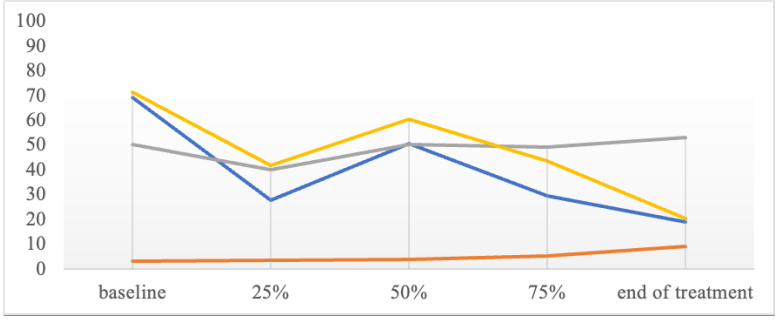

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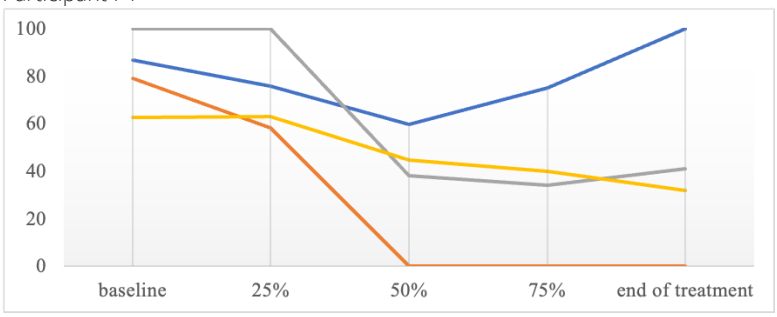

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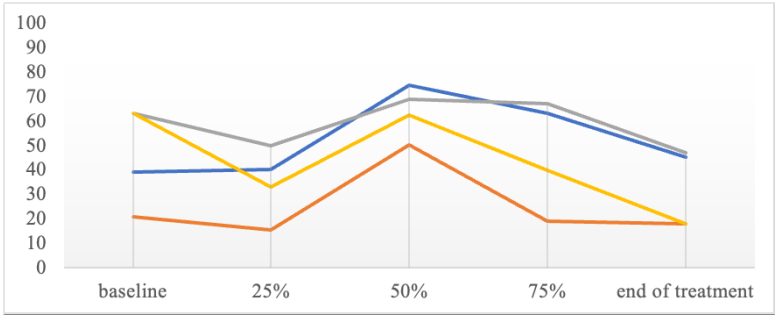

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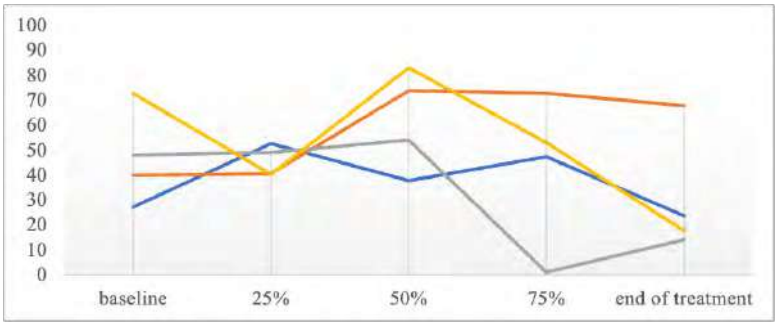

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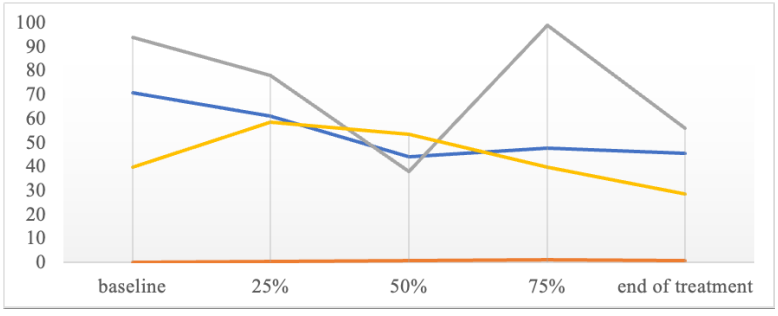

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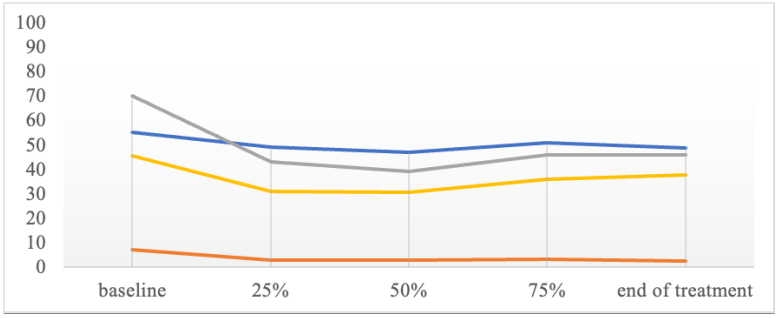

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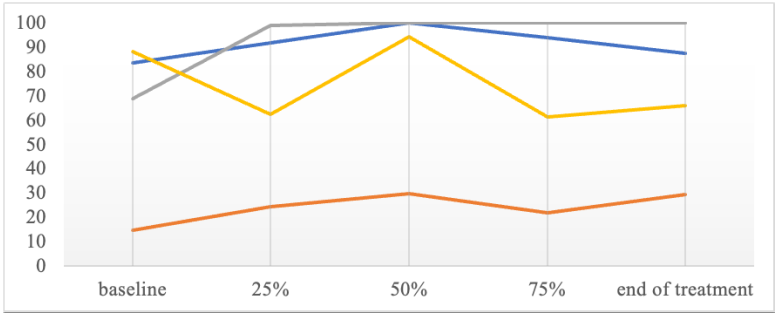

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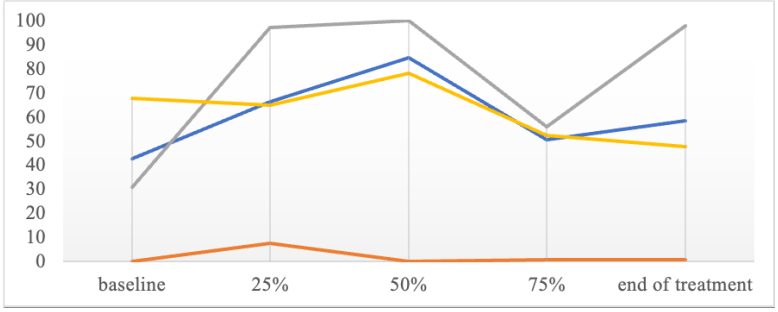

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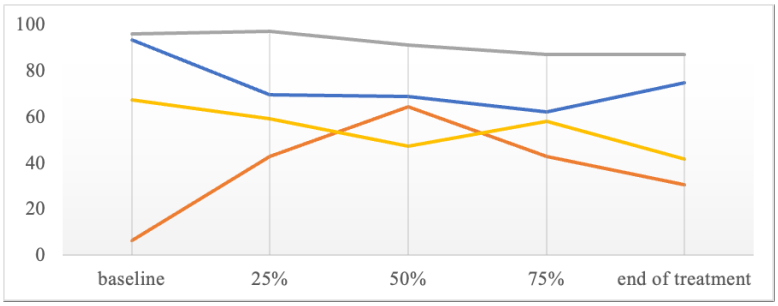

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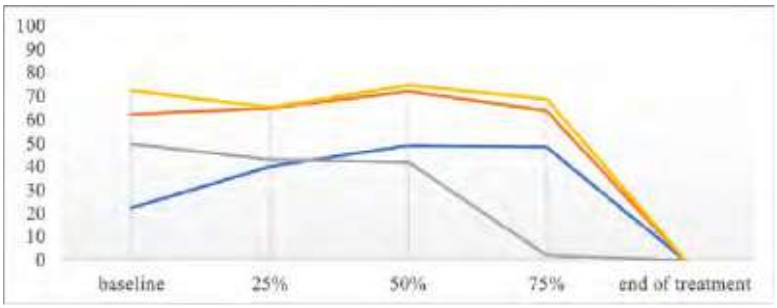

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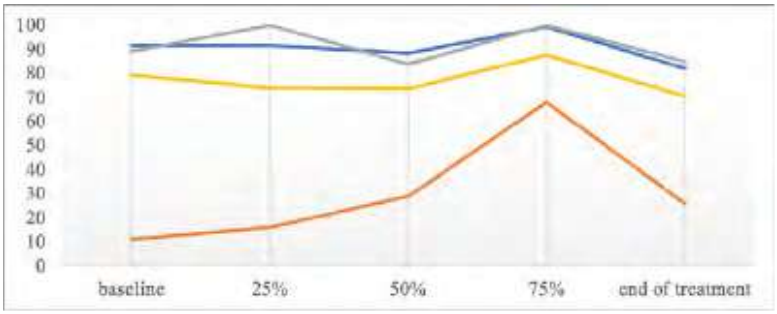

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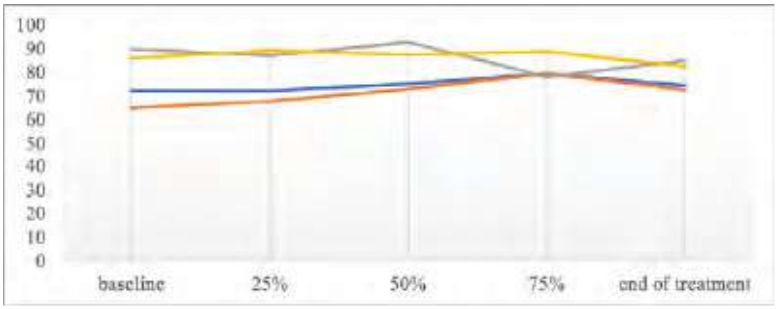

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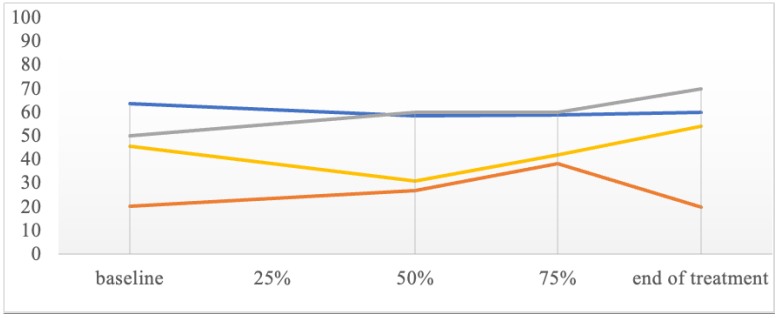

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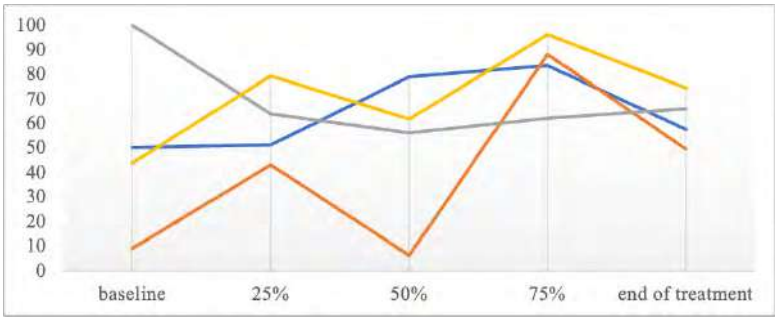

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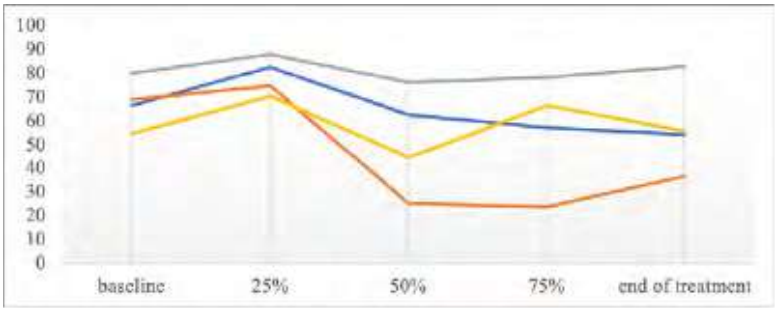

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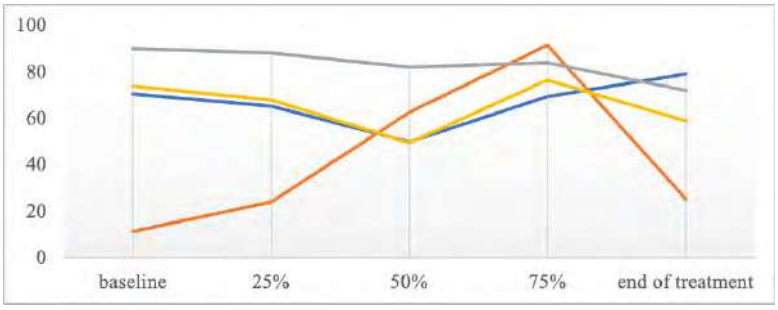

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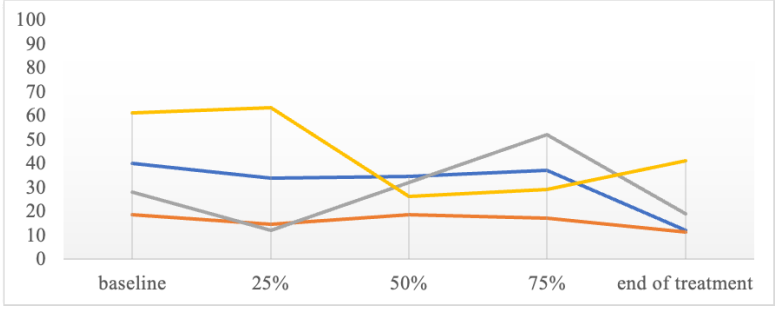

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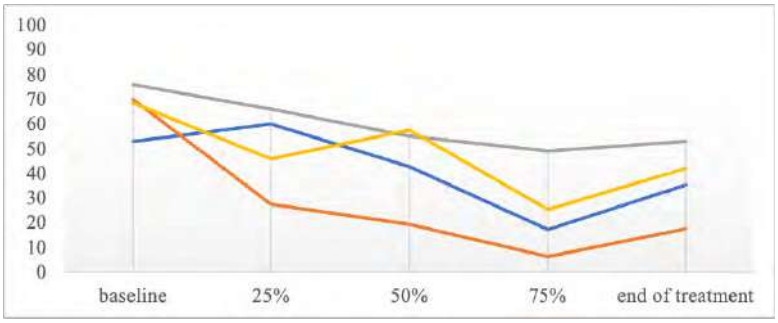

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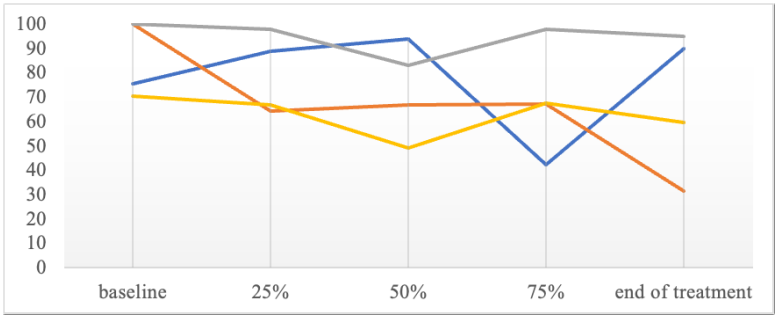

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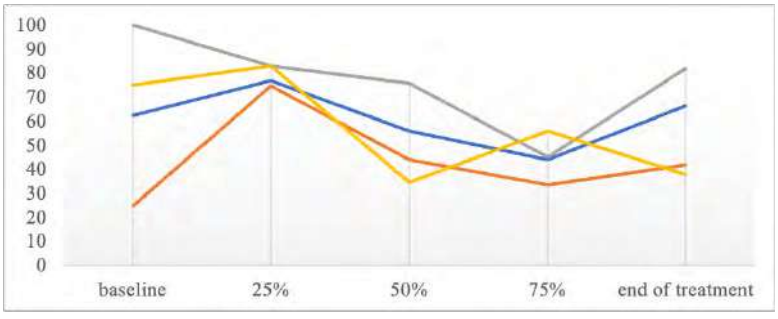

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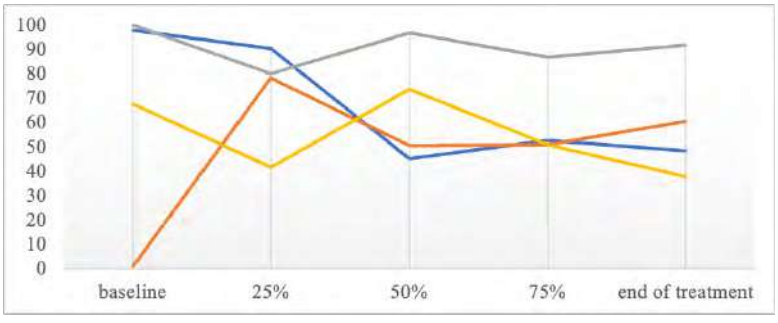

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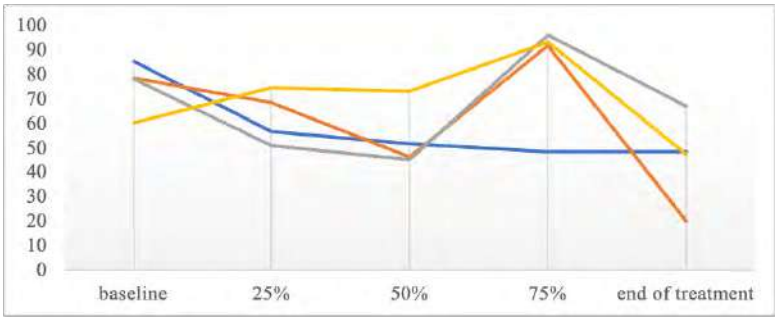

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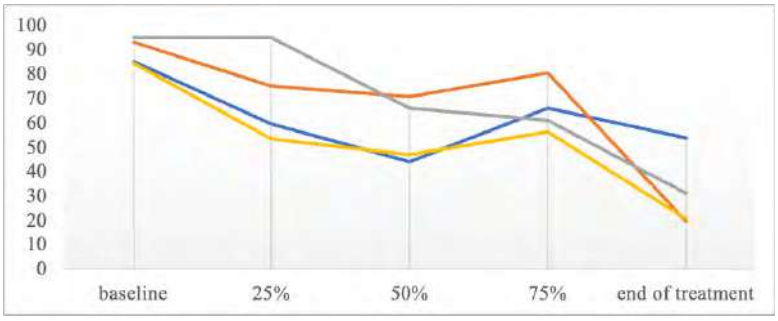

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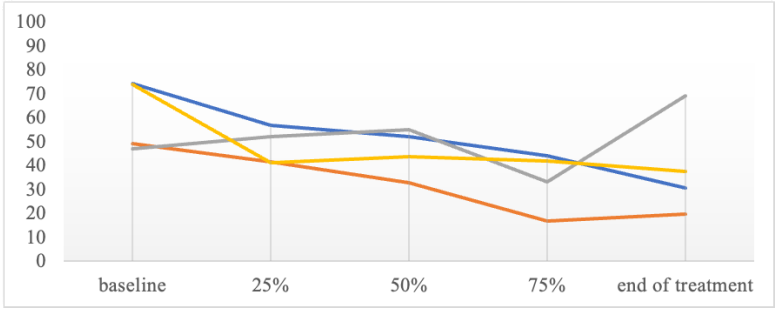

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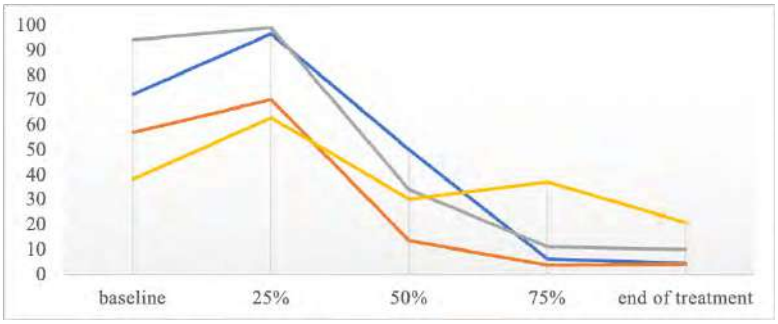

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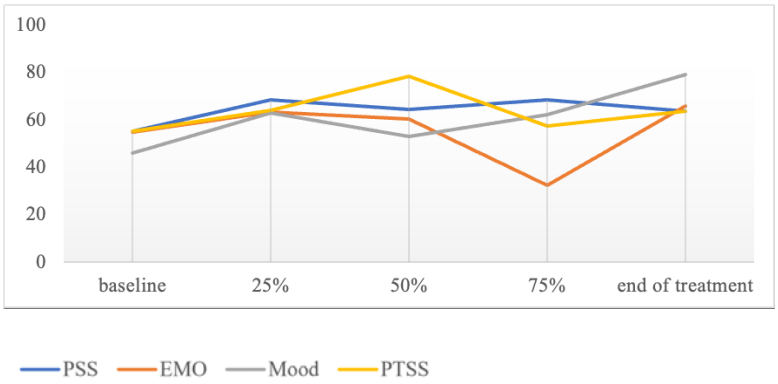

Note. EMO = Subscale 'impulsivity' of the Difficulties in Emotion Regulation Scale; Mood = Single mood item; PSS = Perceived Stress Scale (PSS-4); PTS = Primary Care Post-Traumatic Stress Disorder; *data for 25% was missing, this timepoint is therefor removed from the graph.

The role of baseline emotion regulation and perceived daily stress in adherence and completion of narrative exposure therapy amongst forced migrants

In preperation:
Ghafoerkhan, R.S.[ǂ], van Heemstra, H.E.[ǂ], Scholte, W.F, Ghane, S., van der Aa, N., & Boelen, P.A. The role of baseline emotion regulation and perceived daily stress in attendance and completion of narrative exposure therapy amongst forced migrants

[ǂ] Both authors contributed equally to the study and manuscript

4

ABSTRACT

Background

Forced migrants living in the Global North are at risk for developing a Post-Traumatic Stress Disorder (PTSD). Narrative Exposure Therapy (NET) is an empirically supported treatment for forced migrants suffering from PTSD. However, multiple barriers hinder a consistent commitment and completion of mental health treatment. Identifying which baseline factors contribute to the feasibility of NET could enhance its treatment outcomes.

Objective

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, while considering pre-treatment PTSD symptom severity, were associated with NET adherence.

Method

An uncontrolled observational study was conducted at an outpatient mental health clinic. Treatment-seeking forced migrants (N = 86) suffering from PTSD were followed while engaging in NET. Three pre-treatment measures were considered as indicators: the Perceived Stress Scale (PSS), the Difficulties in Emotion Regulation Scale (DERS-18) and the PTSD checklist (PCL-5). Information on NET session attendance, protocol adherence and completion was derived from medical records and computed into variables. Analyses were carried out using logistical regression and a two-step hierarchical linear regression analysis.

Results

First, baseline levels of perceived daily stress and emotion dysregulation were not found to be indicative of NET completion rates. Second, analyses showed that baseline perceived daily stress scores significantly indicated treatment adherence. However, when in a second step adding baseline PTSD symptom severity to the model this significance was mitigated. 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. However, the possibility that these particular baseline factors are not uniquely related to NET treatment completion and session adherence should also be considered for future research and clinical practice.

Keywords

Narrative Exposure Therapy, forced migrants, PTSD, emotion regulation, perceived daily stressors, drop-out, treatment completion.

BACKGROUND

Forced migrants living in the Global North form a heterogeneous population, comprising of those seeking refuge from war and conflict, and those who have been trafficked. Over the last years the Netherlands has seen a rapid increase in asylum applications (Asylum Information Database, 2022) next to a constant influx of identified survivors of sex trafficking (Nationaal Rapporteur Mensenhandel en Seksueel Geweld tegen Kinderen, 2021). Prior, 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 (Office of the United Nations High Commissioner for Human Rights, 2021). Moreover, many migrants held marginalised positions in their home countries, e.g., because of their ethnicity, religion, poverty, gender identity, and/or sexual orientation (Human Rights Council, 2023). In host countries these complex personal histories are compounded by the psychological impact of accumulated marginalisation within stressful social conditions (Hynie, 2018). These ongoing adversities, daily stressors and their emotional impact are often related to mental health problems, such as a Post-Traumatic Stress Disorder (PTSD: Gleeson et al., 2020). Narrative Exposure Therapy (NET) is an empirically supported treatment for forced migrants suffering from PTSD (Siehl et al., 2021). However, for this population in particular, multiple barriers hinder a consistent commitment to, and completion of mental health treatment (Byrow et al., 2020). Identifying which factors contribute to the feasibility of NET could enhance treatment outcomes (Semmlinger & Ehring, 2021).

Prevalence rates of PTSD amongst forced migrant are high (Patanè et al., 2022). In general, pre-treatment symptom severity was found to impact its course and outcome (Mitchell et al., 2023). Various randomised controlled trials and meta-analyses have confirmed the efficacy of NET for forced migrants suffering from PTSD (Siehl et al., 2021). However, the feasibility of NET in naturalistic settings has received less attention (Siehl et al., 2021). A meta-analysis on treatment discontinuation amongst PTSD patients showed an overall drop-out rate of 18.28% on average (95% CI: 14.84 to 21.75%: Imel et al., 2013). For NET and forced migrants such numbers are largely unknown. A recent practice-oriented review by Semmlinger & Ehring (2022) made a first attempt to examine drop-out rates for refugees and asylum seekers and found great variability. To the best of our knowledge, meta-analysis on adherence rates amongst forced migrants are currently lacking. Discontinuation of treatment before symptom reduction is problematic for various reasons. First of all, for patients themselves dropping out of exposure treatment can cause symptom aggravation, and may increase distrust of mental health services (Semmlinger & Ehring, 2022). Secondly, in the Global North, mental health services for forced migrants are scarce, treatment discontinuation and non-attendance put further (financial) strain on these fragile health systems (Nowak et al., 2022). To inform clinical practice, the present study considered baseline perceived daily stress and emotion dysregulation as potential

indicators of drop-out and non-adherence amongst forced migrants, while considering pre-treatment PTSD symptom severity.

Once arrived in the Global North, forced migrants face lengthy residence procedures, challenging housing/living conditions, and limited social embeddedness, while not being able to provide in their own livelihood (Silove et al., 2017; VluchtelingenWerk Nederland, 2021). Although terminology for these stressors vary, the present paper will refer to these as 'daily stressors'. As brought forward by discussions in both clinical practice and research, daily stressors could be a potential factor to impact the course of treatment (Drožđek et al., 2013; Li et al., 2016). The perceived lack of control or worries about one's daily stressors can sustain and negatively impact the mental health of forced migrants, including PTSD (Gleeson et al., 2020). Intuitively, one might expect these challenging and overburdening circumstances to interfere with treatment, for instance through cancelled sessions or necessary deviations from the treatment protocol (Waller, 2009). Indeed therapists are known to be hesitant to initiate treatment with forced migrants (Ter Heide & Smid, 2015). However, whether daily stressors indeed affect the course and feasibility of treatment for forced migrants remains unclear. Some studies suggested that clinician-rated daily stressors impede the treatment process (Djelantik et al., 2020; Kaltenbach et al. 2020), whereas other studies failed to find such an effect (Bruhn et al., 2018). More research is needed to understand the impact of daily stressors on the course of treatment amongst forced migrants.

Emotion dysregulation and PTSD are intertwined, influence each other (Seligowski et al., 2015), and often co-occur within forced migrants (Doolan et al., 2017). This population faces various high impact adversities and a protracted lack of control that likely impedes their ability to regulate emotions (Ehring & Quack, 2010). Moreover, when interpersonal trauma happens repeatedly and from an early age on, one might have been deprived of the opportunity to adequately develop self- and emotion regulation skills (Gruhn & Compas, 2020). Therefore, a second factor potentially impacting the course of treatment for forced migrants is emotion dysregulation. In order to engage in trauma-focussed therapy it is considered crucial to be able to tolerate and integrate arousal caused by exposure to the traumatic memories, without becoming numb or dissociated or becoming restless or aggravating symptoms (Schauer & Elbert, 2010). For patients with emotion regulation difficulties, tolerating elevated arousal can be particularly challenging and might outweigh their abilities. This could result in increased avoidance, no-show, diminished treatment outcome, and even discontinuation of treatment (Frye & Spates, 2012). Although prior studies have underlined the interrelatedness of emotion dysregulation and PTSD treatment outcome (McLean & Foa, 2017), its influence on treatment completion and adherence amongst forced migrants is largely unknown.

The present study was part of a larger research project on processes of change amongst a clinical sample of forced migrants suffering from PTSD (see Ghafoerkhan et al., 2020 for its study protocol). The overarching focus of this project was on the

interplay between perceived daily stress, emotion dysregulation and mood with PTSD symptom severity during NET. Initial analyses on their interrelatedness could only be interpreted for perceived daily stress on PTSD symptom severity during NET and failed to capture a temporal effect between these two constructs (van Heemstra et al., in preparation). The present study built on these initial findings and focussed on further unpacking these concepts by examining baseline perceived daily stress and emotion dysregulation, for their role in NET adherence and completion, while considering PTSD symptom severity at baseline.

Objective

The present study focussed 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. There were two main aims. First, to examine whether baseline levels of perceived daily stress and emotion dysregulation were indicators of NET completion. Second, 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. Whilst conceptualisations and operationalisation of treatment adherence differ, within this study adherence was defined as a session that was attended by the patient and that took place in line with the NET treatment protocol (Schauer et al., 2011). Information about session attendance and NET protocol adherence was derived from session notes within patients' medical records and calculated into a variable.

METHOD

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 traumatised asylum seekers, refugees, and survivors of sex trafficking. Upon referral, clinical diagnoses are established in a routine psychiatric assessment at intake. Accordingly, treatment indication is agreed upon within a team meeting. At the study site NET was considered a first-choice treatment for patients who reported multiple trauma's at intake and suffered from PTSD. As part of standard care digital session notes are kept, which is a requirement before registering a session into a patient's medical record. For the purposes of this study patients (N = 86) engaging in NET were followed.

Patients' sociodemographic characteristics are presented in Table 1. Patients (≥ 18 years) meeting all of the following criteria were considered for inclusion:

i) Forced migrant who has faced interpersonal violence, such as war-, conflict-, sex trafficking, or sexual orientation and gender identity and expression (SOGIE) related violence.

ii) PTSD as a primary diagnosis;
iii) NET treatment indication;
iv) Cognitively able to give consent to participate in the study.

Patients were excluded if they:

i) Recently (< 6 months ago) completed another trauma-focussed therapy;
ii) Showed signs of an acute crisis, such as acute suicidality or acute severe psychosis, or suffered from persistent substance abuse.

Table 1
Sociodemographic Information of Patients at Baseline

	Completers		Non-completers		Full sample	
	n	%	*n*	%	*n*	%
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
Highschool	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. SOGIE= sexual orientation, gender identity-, and expression.
[a] Categories might overlap within individuals.
[b] Reflects those who held a Dutch/EU passport or permanent refugee status.
[c] Reflects those who lived in independent housing.
[d] Reflects those who either had steady employment or were full-time students.

Design and ethical approval

In this observational uncontrolled study, data at large were collected to investigate processes of change during NET (see Ghafoerkhan et al., 2020 for the study protocol), including the role of baseline measures in NET adherence and treatment completion. 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 pre-registered at the Dutch Trial register (NL61808.058.17: https://www.toetsingonline.nl/to/ccmo_search.nsf/fABRpop?readform&unids=D707FF3CE1AFE7D3C125881F00152BB7).

Intervention

NET is an individual brief trauma-focussed psychotherapy found to be effective for refugees, asylum-seekers, and survivors of sex trafficking (Brady et al., 2021; Siehl et al., 2021). The main aim of NET is to reduce PTSD symptoms by reconstructing the patients' life narrative while incorporating their traumatic, positive, bereavement, and offender-related experiences within this narrative by means of exposure techniques. The NET study protocol recommends between 12 to 16 total number of sessions (Schauer et al., 2011). Regular attendance during NET is crucial to allow for an optimal processing and in-depth exposure during and in-between sessions. NET commences with a so-called 'life line'. During this first session the patient is asked to chronologically lay out major life events along this life line using various symbols. A rope or ribbon represents their life from birth until the present day. Alongside this life line the following symbols are used: stones representing traumatic experiences; flowers representing positive life events; and finally candles representing bereavement-related life events. In the subsequent sessions, exposure to traumatic events takes place in various ways. First, all events are discussed chronologically and in great detail, with particular attention to linking the past and present experience, and the integration of contextual information and sensory information. Second, during each session the reconstructed narrative addressed is written-down and read out loud by the therapist in the following session. In the final session the full narrative from birth until present day is read back to the patient. For more information see the NET manual (Schauer et al., 2011).

Measures

Treatment completion

A dichotomous variable was created, patients who completed the NET protocol were considered completers (1 = 'completer'), all others were considered non-completers (0 = 'non-completer'). Patients who did not complete the study protocol (i.e., missing post-treatment assessments or too many no-shows), but still completed NET outside the study protocol were considered completers. To allow for a sample representative of NET being implemented in a naturalistic setting, all completers were considered, regardless of the final number of session or treatment length.

NET adherence

For treatment completers, session notes entered into patients' medical records by NET therapists were used to obtain information about attendance and protocol adherence. If session notes referred to typical NET elements, such as 'laying out the life-line', '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 other urgent matter, such as 'negative outcome asylum procedure' or 'escalating conflict in home country', this was counted as a session 'non-adherent' to the NET protocol. 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 sum scores were created, one representing the total number NET sessions in line with the NET protocol, and one representing the total number of non-adherent sessions (either reflecting 'non-attendance' or 'non-protocol adherence'). Finally, an index representing the total number of true NET sessions, relative to the total number of therapy sessions that were planned was calculated. This ratio variable was created by dividing the total number of NET sessions by the total number of planned NET sessions (that is the sum of total number of NET sessions and total number of missed sessions). Scores ranged between 0-100, with a score of '0' indicating that none of the planned session successfully took place, and a score of '100' indicating that the patient attended all of the planned sessions, and these session took place in line with the NET treatment protocol. As this study partially took place during the COVID pandemic, sessions missed due to the pandemic's regulations were not considered within this variable. If session notes indicated a session was missed due to a 'positive COVID test', 'schools closed due to regulations', or 'need to self-isolate', etc., this missed session was left out of any of the abovementioned calculations.

Perceived Stress Scale (PSS)

The PSS questionnaire was used to measure perceived daily stress by assessing how unpredictable, uncontrollable and overloading patients experience their daily lives and stressors during the last month (Cohen et al., 1983). The scale uses 10 items scored on a 5-point Likert scale ranging from 0 = 'never' to 4 = 'very often'. The sum of the total score can range between 0-40, where a higher score indicates higher perceived stress. Scores between 0-13 are considered indicative of 'low stress', scores between 14-26 of 'moderate stress', and finally scores between 27-40 '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 PSS was found to have acceptable psychometric properties (Lee, 2012), and in this sample had an acceptable Cronbach's alpha of α = .71.

Difficulties in Emotion Regulation Scale – short version (DERS-18)

The DERS-18 questionnaire measures difficulties in emotion regulation using 18 items scored on a 5-point Likert scale ranging from 1 = 'almost never' to 5 = 'almost always' (Victor & Klonsky, 2016). The sum of the total score can range between 18-90, where a higher score indicates more difficulties in emotion regulation. No cut-off scores are provided. 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 (Victor & Klonsky, 2016), and in this sample had an acceptable Cronbach's alpha of α = .78.

PTSD checklist (PCL-5)

The PCL-5 measures symptom severity of PTSD over the last month using 20 items on a 5-point Likert scale ranging from 0 = 'not at all to 4 = 'extremely. The summed total symptom severity score can range between 0-80, where a higher score indicates higher severity of PTSD symptoms. A cut-off score between 31-33 is suggested to be indicative of PTSD (U.S. department of Veteran Affairs, 2023). 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 PCL-5 was found to have good psychometric properties (Blevins et al., 2015) and in this sample had a good Cronbach's alpha of α = .87.

Traumatic life events

Two checklists were used to assess traumatic life events: the Life Events Checklist (LEC-5) and the Early Trauma Inventory Self Report-Short Form (ETISR-SF). The LEC–5 measures life-time prevalence of 16 types of potentially traumatising events, plus the option for an open-ended response regarding a life event. 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 ETISR-SF assesses potentially traumatising events before the age of 18 years old in 27 items (Bremner et al., 2007), with particular attention to childhood (sexual) abuse. The psychometric evaluation of this measure can be considered good (Bremner et al., 2007).

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 one week prior to 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. Assessment mostly took place in one meeting with a mean duration of 83 minutes (*sd* = 44 minutes). Due to variations in spoken languages and reading proficiency, the administration of the measures was

adapted to the patients' communication needs. For most patients, questions were read out loud (75%); other patients either mostly or completely self-administered the measures. Most measures were administered directly, either in English (67%) or Dutch (10%), or in some cases by use of a translator by telephone (23%). In order to follow the treatment process and identify potential obstacles during NET, medical records were monitored. The study partially overlapped with the COVID pandemic, during this period for three patients less than 25% of their sessions were held online.

Statistical analyses

Logistic regression analysis was used to test whether baseline emotion dysregulation and perceived daily stress differentiated between patients who completed NET treatment and those who did not. Multiple linear regression analysis in which predictors were added to the model in two separate steps was used to test whether the NET session adherence ratio was associated with baseline perceived daily stress levels, emotion regulation, and PTSD symptom severity. Regression models were evaluated by testing if individual predictors were significantly associated with the NET session adherence ratio. Variables were transformed into standardised 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 and overlap between predictors could easily result in collinearity related issues. Prior to the regression analyses Pearson correlations were therefore used to test the bivariate relations between the predictors and the NET session adherence ratio and to evaluate the degree of overlap between the predictors. Statistical analyses were performed using IBM SPSS Statistics (Version 27).

RESULTS

A total of $N = 86$ patients were initially enrolled. The sample included 35 different countries of origin, most common being Uganda, Nigeria, Syria, and Sierra Leone (see Table 1 for sociodemographic information). Patients had various, often intersecting, reasons for forced migration. For instance, a need to migrate due to one's sexual orientation and by so doing becoming victimised within sex trafficking networks. The LEC-5 indicated that patients experienced an average of $M = 8.4$ ($SD = 2.6$) traumatic life events. Scores on the ETISR-SF further revealed that 61% of the sample experienced childhood sexual abuse, and 94% any form of childhood abuse or neglect before the age of 18 years old. 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). There are no official cut-off scores provided for the DERS-18; however the mean scores within this sample exceed previous findings amongst patient populations (Fowler et al., 2014). All

but one patient scored above the recommended clinical cut-off score on the PCL-5. In general, mean scores indicated a high PTSD symptom severity within the study sample (U.S. department of Veteran Affairs, 2023).

The role of baseline perceived daily stress and emotion dysregulation in NET completion

Of the full sample, *n* = 64 completed treatment and *n* = 22 (26%) discontinued treatment. The number of sessions and length of treatment varied greatly (see Table 2). Main reasons for NET drop-out were: the therapy was too high of a burden for the patient (*n* = 7), there were too many other daily stressors/life events (*n* = 6), the therapist was not able to reach the patient anymore (*n* = 2), physical health problems (*n* = 2), the patient did not believe in the effectiveness of the therapy (*n* = 2), for *n* = 3 the reason was unclear from the medical records. Logistical regression analyses revealed that none of these baseline measures significantly differentiation between completers and non-completers of NET treatment (see Table 3).

Table 2
Descriptive Statistics NET Treatment Variables

	Completers			Non-completers		
	M	*SD*	Range	*M*	*SD*	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 in days	211	133	68 – 656	119	136	0 - 448

Note. *N* = 86 (*n* = 64 completers and *n* = 22 non-completers). NET = Narrative Exposure Therapy.

Table 3
Logistic Regression Predicting Treatment Completion

Predictor	*B*	S.E.	Odds ratio	Wald Statistic	*p*
Intercept	.18	1.57			
Perceived daily stress	.05	.06	.96	.77	.38
Difficulties in emotion regulation	-.00	.03	1.05	.03	.86

Note. *N* = 86

The role of baseline perceived daily stress, emotion dysregulation, and PTSD symptom severity in NET adherence

Table 2 provides insight in 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 to the NET treatment protocol. 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 procedure, competing appointments with other service providers, or mandatory naturalisation/language courses. Main reasons for NET non-adherence were: the patient was too dysregulated to initiate therapy, avoidance of the traumatic memory, or major life events or changes in housing/residential procedure 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 daily stress, and PTSD symptom severity. The NET session adherence ratio was significantly associated with more severe perceived daily stress and PTSD symptom severity at baseline, but not with baseline emotion regulation. The moderate to strong correlations between perceived daily stress, emotion regulation, and PTSD symptom severity indicated considerable overlap between these constructs.

Table 4

Descriptive Statistics and Correlations between Study Variables

Variable	*n*	*M*	*SD*	1	2	3
1. NET adherence	64	.73	.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. NET = Narrative Exposure Therapy

[a] Calculated for completers only. The mean (.73) can be interpreted: for 73% of the planned sessions the patient attended the session, and treatment took place in line with the NET protocol.

*$p < .05$. **$p < .01$.

Results of the multiple regression analysis in which the NET session adherence ratio was regressed on baseline perceived daily stress, emotion regulation, and PTSD symptom severity are presented in Table 5. In the first step baseline perceived daily stress and emotion regulation were added to the model, accounting for 12.11% of the variance in NET adherence ratio. Baseline perceived daily stress was significantly and positively related to the NET adherence ratio. This indicates that higher levels of perceived daily stress are associated with higher levels of NET adherence to the NET protocol. The association between baseline emotion regulation 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, it 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 perceived daily stress no longer to be a significant predictor of the NET

session adherence ratio. This is most likely due to the considerable overlap between the constructs of perceived daily stress levels and PTSD symptom severity at baseline (see Table 4) in combination with the small sample size, causing collinearity in the regression model at this stage.

Table 5

Results of the Multiple Linear Regression Analysis in which the NET Adherence Ration was Regressed on Baseline Perceived Daily Stress, Emotion Regulation, and PTSD Symptom Severity

Variable	*B*	*SE*	*β*	*p*
Step 1				
Intercept	-.03	.12		
Perceived daily stress	.40	.13	.43	.00
Emotion dysregulation	-.13	.14	-.13	.33
Step 2				
Intercept	.00	.12		
Perceived daily stress	.27	.15	.29	.07
Emotion dysregulation	-.11	.15	-.10	.47
PTSD symptom severity	.19	.15	.20	.19

Note. N = 64; DERS-18= Difficulties in Emotion Regulation Scale-18; PCL-5 = PTSD Checklist for DSM-5; PSS = Perceived Stress Scale.

DISCUSSION

The present study aimed to examine the role of pre-treatment factors, that is levels of perceived daily stress, emotion dysregulation, and PTSD symptom severity, on NET completion and adherence rates amongst a clinical sample of forced migrants. The sample experienced a high amount of potentially traumatising events, including high rates of interpersonal childhood trauma. Drop-out and non-adherence rates within the sample were considerable. Yet, surprisingly, analyses showed that none of the baseline measures were significant indicators of NET completion or adherence. These findings suggest that individuals' levels of perceived daily stress, emotion dysregulation and PTSD symptom severity at baseline are unrelated to the likelihood of discontinuing treatment or demonstrating lower adherence rates.

There are several ways to understand these findings. Most obviously the relatively small sample size or the methodological choices made might have hindered certain relationships to be detected. In line with longstanding critiques on the cross-cultural validity of mental health concepts and measures developed in the Global North (Bracken et al., 1997), the measures selected for this study might not best capture forced migrants' lived experience. First, many forced migrants have faced continuous marginalisation and various human rights violations. When receiving mental healthcare in the Global North existing mental frameworks might fall short in addressing these

complex backgrounds. Second, measures applied are based on cultural biased conceptualisations, and were potentially unable to match each patient's cultural and personal background. For instance, what are considered appropriate ways to handle emotions is deeply connected to one's culture (Matsumoto et al., 2008). Emotion regulation is often understood in terms of an individual's ability to mentalise and cope with their emotions, whilst ignoring social and spiritual sources of affect regulation. In previous studies the concept of 'daily stressors' and its impact amongst forced migrants has been assessed in various ways (Alemi et al., 2015; Djelantik et al., 2020; Kaltenbach et al., 2020). Different approaches might yield different insights into the relationship between daily stressors and treatment course. Moreover, perceived daily stress is known to fluctuate, as it presents an ongoing adaptation to changing circumstances. Therefore, baseline levels used within this study may not fully capture the relevance of daily stressors for the course of treatment. Although these explanations are plausible and could direct future research, the possibility that these particular baseline factors are genuinely unrelated to NET completion and adherence rates is also worth considering. Additionally, findings allude to an intertwined relationship between perceived daily stress and PTSD symptom severity requiring a more substantial reflection.

Considering the study's small sample size, the substantial overlap found between perceived daily stress and PTSD symptom severity may have inhibited the detection of a unique contribution for each concept separately to the treatment course. This strong association aligns with previous findings (e.g., Minihan et al., 2018) and initial analyses on pre-session measurements within the study's overarching research project (van Heemstra et al., in preparation). Although PTSD and perceived daily stress conceptually differ, the question arises how perceived daily stress and PTSD might be related. Psychopathology is known to worsen under (acute) stress, and assessing these particular concepts might capture similar areas of functioning (e.g., a 'lack of control', or 'hopelessness'). Another explanation could be that constructs might unfold each other, making it difficult to untangle each unique influence. For instance, daily stressors may exacerbate pre-existing posttraumatic stress, as uncertainties about one's residential status may trigger feelings of unsafety related to past traumatic experiences. Vice versa, the burden of PTSD complaints might affect one's ability to adequately respond to daily stressors, thus increasing perceived daily stress.

None of the findings supported baseline emotion dysregulation levels as an indicator of the NET treatment course amongst forced migrants. This opposes the common assumption that emotion regulation difficulties or increased arousal levels might impair treatment feasibility, and is in line with previous ambiguous findings on this assumption (e.g., Belleau et al., 2017; Gilmore et al., 2020). Moreover, in clinical practice it is not uncommon to offer stabilising techniques or emotion regulation skills training before initiating trauma-focussed therapy. As outlined above emotion dysregulation is intertwined or even an integral part of PTSD (Doolan et al., 2017; Seligowski et al.,

2015), this might complicate disentangling their influence on the course of treatment. Prior research offer hypotheses that might explain the present study's findings. First, a clinical treatment setting might offer a holding environment via a structural contact with the therapist and psycho-education, which might reduce emotion regulation difficulties (Helland et al., 2022). Also, trauma-focussed therapies themselves might act as interventions promoting emotion regulation, disregarding the need for prior stabilisation of the patient (Bicanic et al., 2015). Second, a 'static' pre-treatment assessment might hold little predictive value about the course of treatment, in comparison to 'dynamic' information on one's ongoing ability to handle emotions (Kraiss et al., 2020). 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).

Some additional findings are worth considering. First, in line with previous evidence within naturalistic settings (Kaltenbach et al., 2020), 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). Second, drop-out rates were found to be higher compared to other traumatised populations (Semmlinger et al., 2021). Both of these findings provide further insight into the feasibility of NET, and how therapists might adapt its protocol within naturalistic clinical settings. Finally, in contrast with literature on daily stressors amongst forced migrants, perceived daily stress levels within 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 might feel a greater urge to engage in treatment. These findings might contribute to a growing body of research on the relevance of daily stressors for forced migrants' mental wellbeing (Li et al., 2016).

This study offers novel insights into the indicative value of baseline measures for the course of treatment amongst forced migrants. However the study has several limitations that need to be mentioned. As outlined above, an important limitation was the relatively small sample size. Also, a heterogeneous clinical sample was included in terms of patients' countries of origin and migration backgrounds. Although this represents the diversity seen in forced migrants mental healthcare in the Global North, the sample might have been too diverse for detecting commonalities. To substantiate findings, replication within larger samples of forced migrants, or with a particular focus on specific subgroups (e.g., survivors of sex trafficking, culturally homogenous groups etc.), is needed. Second, although the study's naturalistic setting provides valuable information, it complicates comparing its sample and findings to studies with a more rigorous controlled design. For example, those labelled a 'completer' within this sample might vary in terms of their total numbers of sessions and treatment length compared to those considered 'completers' within controlled trails. Third, NET therapists might have differed in the quality and comprehensiveness of their note-taking. Therefore,

crucial information might have been missing from the medical records, thus affecting the reliability of the outcome variables used. Finally, translators are a crucial 'tool' in transcultural mental health provision and around a quarter of assessments were administered with the use of a translator. Nonetheless, bridging cultural and language barriers through a translator is not without limits and might have impacted the validity of assessments (Fennig & Denov, 2021).

In conclusion, the current study examined the role of baseline indicators on the feasibility of NET amongst forced migrants living in the Global North. None of selected baseline factors: perceived daily stress, emotion dysregulation and post-traumatic stress symptoms, were found to significantly indicate NET adherence or completion rates. Additional research is needed to substantiate study findings. However, findings might cautiously encourage therapists to continue the provision of trauma focussed 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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Disclosure statement

The authors report there are no competing interests to declare.

Data availability

Data can be requested via the corresponding author upon reasonable request.

Author contributions

Design: RG; HvH; Data collection: RG, HvH; Data analysis: RG, NvdA; Project Supervision: PB; WS; Manuscript writing: RG; Manuscript revision: HvH, SG; PB; WS.

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PART II

Understanding the role of individual factors in mental health and its treatment

Contextualising cognitions: The relation between negative post-traumatic cognitions and post-traumatic stress among Palestinian refugees

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ABSTRACT

Negative Post-Traumatic Cognitions (PTC) are a relevant factor in the development, persistence, and treatment of Post-Traumatic Stress Disorder (PTSD). Palestinian refugees live under challenging circumstances and have negative future prospects, so negative cognitions might be expected to prevail. It is uncertain whether findings on the relation between PTC and PTSD in other (non-refugee) populations can be generalised to the Palestinian refugee context. The first objective was to examine the degree to which endorsement of PTC in this sample differed from the endorsement observed in other samples. The second objective was to investigate whether PTC explain variance in PTSD symptomatology and are predictive of PTSD diagnostic status. In Palestinian refugees (N = 85, 51.8% female), PTSD symptoms and negative cognitions were assessed. One sample t-tests and multiple logistic regression analyses were performed. Total PTC scores were significantly higher in the Palestinian sample than in reference samples. Negative cognitions explained significant variance in PTSD symptoms and probable diagnostic status. Findings support the relevance of PTC for PTSD symptoms and diagnosis in a Palestinian refugee sample, in line with the cognitive model for PTSD. This is especially relevant for researchers and clinicians working with refugees in conflict areas.

Keywords
Cognitions, trauma, PTSD, refugees, conflict area.

BACKGROUND

The number of refugees worldwide is currently increasing (UNHCR, 2017). Refugees are challenged by traumatic events and post-migration stressors, which is reflected in high prevalence rates of Post-Traumatic Stress Disorder (PTSD) and other mental health problems (Fazel et al., 2005; Giacco et al., 2018; Porter & Haslam, 2005; Steel et al., 2009). Fifty percent of all refugees live in unstable and insecure situations, e.g., refugee camps (Silove et al., 2017), and are at risk for experiencing (additional) trauma (Karunakara et al., 2004).

The current study focuses on a sample of Palestinians residing in refugee camps in a political conflict area. Their living conditions are poor (UNWRA 2015a, b, c, 2017) and unsafe (OCHA 2017). Many are frustrated about current and future prospects (UNWRA 2015b). Their social and political environment causes great physical and psychological pressure (UNWRA 2015a, c), and PTSD prevalence estimates are high (Lavi & Solomon 2005; Madianos et al., 2011). In such circumstances, it is conceivable that negative cognitions about the outside world and its potentially devastating effect on oneself and one's coping resources are common. These negative cognitions may also shape the interpretation of traumatic events as prevailing and unavoidable.

Previous work by Davis et al. (2016) described "negative trauma-related cognitions" in three categories: negative cognitions about the self (e.g., I am inadequate), about others (e.g., You can never know who will harm you), and about the world (e.g., The world is a dangerous place). It has been suggested that these cognitions contribute to a sense of 'current threat' and thereby increase the vulnerability for developing PTSD (Ehlers & Clark 2000). Previous studies examining different traumatised populations found strong correlations between these negative trauma-related cognitions and PTSD symptoms (Daie-Gabai et al., 2011; van Emmerik et al., 2006; Müller et al., 2010; Su & Chen 2008). Moreover, negative cognitions have been shown to be predictive for the development (Ehring et al., 2008; Kushner et al., 1993; Foa et al., 1998) and persistence of PTSD (Ehlers et al., 1998) after having experienced a traumatic event. There is also evidence that decrease of PTSD during cognitive behavioural treatment is associated with a reduction of negative cognitions (Brown et al., 2019).

Most studies on the role of negative cognitions for the onset, persistence, and treatment of PTSD were based on Ehlers and Clark's (2000) cognitive model of PTSD. The model posits that PTSD arises as a consequence of -among other factors- negative interpretations of the traumatic event and/or its consequences, including an overgeneralisation of the possibility that the event will occur again, while the danger has actually disappeared and the individual is now objectively safe.

Prior work (e.g., Lancaster et al., 2011) has validated Ehlers and Clark's (2000) model and shown that negative cognitions about oneself tend to have the strongest relation to PTSD symptoms, but that negative cognitions on the world and self-blame are

also associated with PTSD symptoms, albeit somewhat lower. It remains to be tested whether the model still holds in populations where people continue to live under harsh and currently threatening conditions (i.e., without objective safety), as it applies to many refugees. They may have negative cognitions resulting from adequate interpretations of the world, based on their daily lives (e.g., The world is a dangerous place) on top of potential overgeneralisations of their traumas. Additionally, their daily challenges can increase vulnerability for negative evaluations regarding themselves (e.g., I am powerless) or regarding self-blame (e.g., I should have behaved differently). This may affect the correlations between negative cognitions and PTSD in at least two ways. On the one hand, the correlations could be weak compared to findings in Western samples, because negative cognitions are commonplace and not exclusive for people with PTSD. On the other hand, negative cognitions elicited by living conditions could increase the vulnerability for PTSD after trauma, because they may impact the processing of new traumas, resulting in relatively high levels of PTSD in refugee populations in line with the cognitive model suggested by Ehlers and Clark (2000).

Previous findings indicate that in refugee populations resettled in high-income countries, negative trauma-related cognitions are more prevalent than in local reference groups (Ter Heide et al., 2017) and that these cognitions are associated with PTSD symptoms (Schnyder et al., 2015). Meanwhile, very little is known about the association between negative trauma-related cognitions and PTSD in refugees still living in conflict settings. As cultural differences may impact psychological mechanisms on trauma (e.g., Summerfield 1999), cultural cross-validation of the association between cognitions and PTSD for this population is necessary. One study found that the level of negative cognitions did not predict future development of PTSD symptoms among mothers living in Gaza (Diab et al., 2018). However, this study was conducted in a very specific sample (mothers); therefore, it is uncertain if findings can be generalised to other populations.

The current study aimed to test whether the assumptions of the cognitive model for PTSD regarding a key role of trauma-related appraisals are applicable in a non-Western context, where current threats are a part of daily live. Specifically, we sought to investigate the prevalence of negative trauma-related cognitions and their association with symptoms of PTSD in a sample of Palestinians living in refugee camps. The first aim was to examine the degree to which endorsement of negative trauma-related cognitions about the self, world, and self-blame in this sample differed from the endorsement observed in other (non-refugee) samples. Considering the living circumstances of our sample, we expected significantly higher levels of negative cognitions compared to previously reported samples. The second aim was to examine the association of negative trauma-related cognitions with symptoms of PTSD in our sample, over and above the severity of trauma exposure. In keeping with prior research, it was expected that significant positive associations would emerge. Apart from examining associations with PTSD symptom levels, we also examined the hypothesis that people with probable

PTSD (based on their scores on the Harvard Trauma Questionnaire, see below) scored higher on negative cognitions than their counterparts without probable PTSD.

METHODS

Participants

Participants were all employees or volunteers at the clinics or centres where the study was conducted (see below). Inclusion criteria were (1) aged 18 or older, (2) ability to read and write, and (3) providing informed consent. There were no exclusion criteria.

Procedure

The current study was conducted in three of the nineteen refugee camps on the West Bank in Palestine. Study locations were a cultural centre in Jenin Camp (approximately 16,000 inhabitants) located in Jenin, a clinic in Askar camp (approximately 15,900 inhabitants) in Nablus, and a community centre in Balata (approximately 23,600 inhabitants), adjacent to Nablus, or the homes of participants. Data collection took place between April and July 2010. Participants were recruited through the institutes where they were working. Depending on the preference of participants, questionnaires were administered in one of the institutes or at their homes.

Prior to questionnaire administration, participants received an information brochure about the research mentioning (1) the study objectives, (2) the fact that participants were free to terminate study participation at any moment, (3) guaranteed anonymisation of data, and (4) the absence of compensation for study participation. This information was also read out loud in English in the presence of an independent Arabic interpreter who could translate whenever necessary. Subsequently, participants were invited to sign an informed consent. In order to prevent missing data, the researcher checked the submitted questionnaires directly and asked participants to fill out missing items when applicable. The whole procedure lasted a maximum of 30 min in total. Responses to open questions were translated by an independent interpreter. The study was approved by the Ethics Committee of the Psychology department of the University of Amsterdam (project number: 2010-KP-1052).

Measures

Demographic data

Participants provided information on their gender, age, profession, and marital status (i.e., married yes/no).

Post-Traumatic Cognitions Inventory

The Post-Traumatic Cognitions Inventory (PTCI; Foa et al., 1999) is a self-report

questionnaire measuring post-traumatic cognitions. The original English version was translated to Arabic for the current study, and then backtranslated by another independent translator, to ensure equivalence of the two language versions. The PTCI comprises 36 items forming three subscales: negative cognitions about the self (SELF, 21 items, e.g., I'm a weak person), negative cognitions about the world (WORLD, 7 items, e.g., The world is a dangerous place), and self-blame (selfblame, 5 items, e.g., The event happened to me because of the sort of person I am), respectively. The items are scored on a scale from 1 (totally disagree) to 7 (completely agree), resulting in a minimum total score of 36 and a maximum total score of 252. Prior research has shown that the scale has adequate reliability and convergent and discriminant validity (e.g., Foa et al., 1999). In the current sample, Cronbach's alphas were .96 (total PTCI), .94 (SELF), .85 (WORLD), and .61 (self-blame).

Harvard Trauma Questionnaire

The Harvard Trauma Questionnaire (HTQ) is a selfreport questionnaire measuring trauma exposure and the severity of PTSD symptoms. The questionnaire consists of three parts, two of which were used in this study. The HTQ was developed for transcultural use (Mollica et al., 1992), and a translated and cross-culturally adapted Arabic version was used for the current study (Shoeb et al., 2007). Part 1 consists of 17 items listing possible traumatic events (e.g., 'rape', 'murder of family or friends', and 'torture'). There are four response options: 'experienced' (4), 'witnessed' (3), 'heard about it' (2), and 'not applicable' (1). The sum score of all items provides an index for the degree of trauma exposure, with a minimum score of 17 (no events experienced) and a maximum of 68 (all events personally experienced). Part 2 assesses details on the traumatic event, but was not used in this study. Part 3 consists of 30 statements scored on a scale from 1 (not at all) to 4 (extremely). In the current study, we only used the first 16 items, as these are directly derived from the DSM-III-R/DSMIV criteria for PTSD. The other 14 items concern the impact of a traumatic experience on daily life (e.g., 'troubled by bodily pain or physical problems') or cultural idioms of distress ('tired soul'). The decision to delete these items was made because this specific Arabic version was developed for another population than our study sample; therefore, including these specific items outside the DSM-IV category was unsuitable. The items can be subdivided into three subscales corresponding to the DSM-IV-based symptom clusters of PTSD: intrusions (e.g., 'recurring nightmares'), hyperarousal (e.g., 'feeling irritable or having outbursts of anger'), and avoidance (e.g., 'avoiding activities that remind you of the traumatic or hurtful event'). The mean score of part 3 items was used as an index for the severity of the PTSD symptoms.

The HTQ is a suitable screening tool for PTSD, with a cut-off score of 2.5 (e.g., Mollica et al., 1992), based on the first 16 items of part 3, as an established cut-off for the DSM-IV PTSD diagnosis (Wind et al., 2017). The instrument has proven to be valid and reliable

(Mollica et al., 2004). In the current sample, Cronbach's alpha of the HTQ part 3 was .88.

Statistical analysis

SPSS Statistics version 23 was used to perform the statistical analyses (IBM, Armonk, NY, USA). The significance threshold was set at $p < .05$ for all tests. One sample t-tests were used to compare the PTCI scores for participants in our sample to a (non-refugee) reference sample (Foa et al., 1999). This reference sample (N = 600) consisted of American and English treatment-seeking individuals (n = 110), individuals recruited from the community (n = 190), and undergraduate volunteers (n = 300). The total reference sample was divided in four groups, based on their scores on the Post-Traumatic Stress Diagnostic Scale (PDS; Foa 1995). Group 1 reported neither traumatic event(s) nor PTSD symptoms above the PDS the cut-off score (n = 162), group 2 reported traumatic event(s) with PTSD symptoms under the PDS cut-off score (n = 185), group 3 reported traumatic event(s) with PTSD symptoms above PDS the cut-off score (n = 170), group 4 (n = 83) reported otherwise and was excluded. Groups 2 and 3 were used as reference groups in our study. Specifically, we compared group 2 to our study participants reporting trauma exposure and scoring under the PTSD cut-off level on the HTQ (n = 59) and group 3 with our study participants reporting trauma exposure and scoring above cut-off on the HTQ (n = 26). Cohen's d effect sizes were calculated of the differences between the Palestinians and the reference sample.

Pearson correlations were calculated to examine correlations between the different subscales of the PTCI and the HTQ within the Palestinian sample. Subsequently, a hierarchical multiple regression analysis tested four predictors (number of traumatic events experienced and PTCI subscales SELF, WORLD, self-blame), with PTSD symptoms as a dependent variable. Before running the regression analysis, the following assumptions were checked: independence of observations, linear relationship between PTSD symptoms and all predictors independently, homoscedasticity, multi-collinearity, the undermining effect of unusual points, and normal distribution of dependent variable and residuals. To test the predictive value for each of the PTCI subscales on probable diagnoses of PTSD derived from the HTQ, a logistic regression was performed.

RESULTS

Participant characteristics

Eighty-seven individuals were invited to participate in the study. Two withdrew, indicating that they found several items in the questionnaires too personal. Characteristics of the remaining 85 participants are shown in Table 1.

Comparing PTCI scores to reference samples

The endorsement of negative cognitions about the self, world, and self-blame in the current study sample was high compared to two reference groups from one sample (see above; Foa et al., 1999). In the Palestinian PTSD group (n = 26), 46.2% was male, and mean age was 31.9 (SD = 11.4); for the reference sample (n = 185), this was 20% male, mean age 33.1 (SD = 12.3). In the Palestinian non-PTSD group (n = 59), 49.2% was male, and mean age was 29.7 (SD = 9.1); for the reference sample (n = 170), this was 42% male, mean age 25.3 (SD = 11.7). One sample t-tests revealed significantly higher scores in our study sample than in the reference groups on all scales except for self-blame in the PTSD group. Huge to small effect sizes were found. See Table 2 for an overview.

Table 1

Participant Characteristics (N = 85)

Variable	*N*	(%)	*M*	(*SD*)
Demographic characteristics				
Female	44	(51.8)		
Age in years			30.38	(9.88)
Married	53	(62.4)		
Occupational status				
Employed	47	(55.3)		
Student	16	(18.8)		
Unemployed	22	(25.9)		
Clinical characteristics				
Above PTSD cut-off score[a]	26	(30.5)		
PTCI scores				
SELF			3.23	(1.30)
WORLD			4.66	(1.41)
Self-blame			3.38	(1.31)
Total			3.57	(1.18)
HTQ scores				
Exposure			2.58	(0.57)
PTSD Symptoms			2.32	(0.54)
Avoidance			2.11	(0.57)
Intrusions			2.41	(0.70)
Hyperarousal			2.54	(0.62)

Note. HTQ = Harvard Trauma Questionnaire; PTCI = Post-Traumatic Cognitions Inventory, PTSD = Post-Traumatic Stress Disorder; SELF = subscale negative cognitions on SELF; Self-blame = negative cognitions on self-blame WORLD = negative cognitions on the WORLD.

Cut-off score[a] was set at 2.5 (Mollica et al., 1992).

Table 2
Sample T-tests

	Palestinian sample		Reference sample				
Variable	***M* (*SD*)**	***N***	***M* (*SD*)**	***N***	**t (*df*)**	***p***	***d***
Non-PTSD group		59		185			
Total PTCI	113.73 (34.64)		49.00 (23.52)		14.35 (58)	<.001	2.43
SELF	2.75 (0.96)		1.05 (0.63)		13.58 (58)	<.001	2.35
WORLD	4.26 (1.35)		2.43 (1.42)		10.43 (58)	<.001	1.40
Self-blame	3.24 (1.27)		1.00 (1.02)		13.528 (58)	<.001	2.06
PTSD group		26		170			
Total PTCI	162.27 (39.76)		133.00 (44.17)		3.75 (25)	.001	.67
SELF	4.29 (1.34)		3.60 (1.48)		2.633 (25)	.014	.47
WORLD	5.57 (1.09)		5.00 (1.25)		3.67 (25)	.013	.46
Self-blame	3.69 (1.37)		3.20 (1.74)		1.84 (25)	.078	.29

Note. d = Cohen's *d*; PTCI = Post-Traumatic Cognitions Inventory; PTSD = Post-Traumatic Stress Disorder; SELF = negative cognitions on SELF; Self-blame = negative cognitions on self-blame; WORLD = negative cognitions on the WORLD. Non-PTSD group Palestinian sample = participants with Harvard Trauma Questionnaire (HTQ) score < 2.5; PTSD group Palestinian sample = participants with HTQ score ≥ 2.5; Non-PTSD group reference sample (Foa at al., 1999) = participants with Psychotrauma Diagnostic Scale (PDS) score ≥ 15; PTSD group reference sample (Foa at al., 1999) = participants with PDS score < 15.

Correlations

As shown in Table 3, the number of traumatic events experienced was significantly positively correlated with PTSD symptom severity, and with negative cognitions about the self. However, no significant correlations with the PTCI subscales WORLD and self-blame were found. Negative cognitions about the self and the world were significantly and substantially correlated with all PTSD subscales. However, self-blame only showed a significant association with hyperarousal but not the other PTSD symptom clusters.

Table 3
Pearson Product-Moment Correlations

	1	2	3	4	5	6	7	8	9
1.Number of traumatic events experienced	-								
2. PTSD symptoms	.42*	-							
3. Intrusions	.43**	.84**	-						
4. Avoidance	.30**	.88**	.58**	-					
5. Hyperarousal	.39**	.88**	.64**	.69**	-				
6.Total score PTCI	.31**	.60**	.54**	.45**	.57**	-			
7.SELF	.34*	.62**	.57**	.45**	.57**	.97**	-		
8.WORLD	.18	.49**	.40**	.41**	.48**	.83**	.70**	-	
9.Self-blame	.16	.19	.15	.14	.22*	.67**	.54**	.51**	-

Note. PTCI = Post-Traumatic Cognitions Inventory; PTSD = Post-Traumatic Stress Disorder; SELF = negative cognitions on SELF; Self-blame = negative cognitions on self-blame; WORLD = negative cognitions on the WORLD. * $p < .05$ (2-tailed); ** $p < .001$ (2-tailed).

Regression analysis

A significant regression equation was found for the model based on four predictors: number of traumatic events experienced (TE), and SELF, WORLD, and self-blame, $F(4, 84) = 18.05$, $p < .001$. The model accounted for 47.4% of variance in symptom levels of PTSD. The PTCI subscales SELF and self-blame (but not WORLD) contributed unique amounts to the explained variance in PTSD levels. Self-blame had a negative relation to PTSD symptoms. Table 4 summarises the findings of the regression model.

Table 4

Multiple Regression Analysis Predicting PTSD Symptoms

Predictor	*B*	*SE B*	β	*t*	*p*	VIF
Constant	.97	.24		4.01	<.001	
TE	.24	.08	.25	2.86	.005	1.14
SELF	.21	.05	.51	4.07	<.001	2.37
WORLD	.08	.05	.21	1.76	.082	2.09
Self-blame	-.09	.04	-.23	-2.31	.023	1.48

Note. B = Unstandardised regression coefficients; β = standardised regression coefficients; PTSD = Post-Traumatic Stress Disorder; SELF = negative cognitions on SELF; Self-blame = negative cognitions on self-blame; TE = number of traumatic events experienced; VIF = Variance Inflation Factor; WORLD = negative cognitions on the WORLD.

Logistic regression analysis

The logistic regression model (with PTCI scales as independent and probable PTSD diagnoses according to the HTQ as dependent variables) was significant, $\chi 2 (3, 85) = 32.26$, $p < .001$. The model explained 31.6% of the variance in PTSD classification (Cox & Snell R Square). Additionally, 78.8% of cases were classified correctly. The subscale SELF was the only subscale making a unique contribution to the explained variance in PTSD classification (see Table 5).

Table 5

Logistic Regression Analysis Predicting Probable Diagnoses of PTSD according to the HTQ

							95% CI for Odds Ratio	
	B	*SE B*	*Wald*	*Df*	*p*	Odds Ratio	Lower	Upper
Constant	-5.00	*1.34*	13.85	1	<.001	148.814		
SELF	-1.23	*.41*	9.78	1	.002	.28	.123	.62
WORLD	-.44	*.32*	1.82	1	.177	.64	.344	1.22
Self-blame	.68	*.36*	3.60	1	.058	1.98	.978	3.99

Note. CI= Confidence Interval; HTQ = Harvard Trauma Questionnaire; PTSD= Post-Traumatic Stress Disorder; SELF = negative cognitions on SELF; Self- blame = negative cognitions on self-blame; WORLD = negative cognitions on the WORLD.

DISCUSSION

To our knowledge, this is the first study examining the role of negative cognitions in PTSD among a general sample of Palestinian refugees living under stressful conditions. As hypothesised, we found relatively high levels of negative trauma-related cognitions in this sample. Significantly higher PTCI scores were found on the total scale and nearly all subscales compared to Western reference samples (Foa et al., 1999), whereby this applied for Palestinians with and without probable PTSD. Corresponding effect sizes were huge to very large for Palestinians without probable PTSD. For Palestinians with probable PTSD, the effects were nearly medium to medium large, with an exception of a small effect for the self-blame subscale. Additionally, in Palestinians with probable PTSD, negative cognitions on self-blame did not significantly differ from the Western designated reference sample.

Findings indicate that -as hypothesised- the combined three PTCI scales explained significant variance in PTSD symptoms and significantly predicted probable PTSD diagnoses. Notably, the predictive power of negative post-traumatic cognitions was established over and above severity of trauma exposure. At the subscale level, the highest bivariate correlation and a strong unique predictive power was found for negative cognitions about the self. This is in line with earlier findings among Western samples (Karl et al., 2009; Startup et al., 2007). Although negative cognitions about the world were significantly correlated with PTSD symptoms, they did not significantly predict PTSD symptoms or probable diagnoses in the multiple regression analyses, when taking into account negative cognitions about the self, self-blame, and trauma exposure. Findings from previous studies reveal mixed results concerning the relevance of the world subscale for PTSD (Beck et al., 2004; Daie-Gabai et al., 2011; Müller et al., 2010). In the introduction, we already introduced the idea that negative cognitions about the world may be less strongly related to PTSD in this particular population. Specifically, cognitions Palestinians have about the outside world may be generally negative, due to their daily lives, independent of their levels of PTSD. In other words, in a largely safe and benevolent environment, negative cognitions about the world may be closely and specifically related to PTSD, whereas in an unsafe or uncontrollable environment, these cognitions may be widespread or even normative and therefore related to a much lesser degree to PTSD.

Negative cognitions related to self-blame did not correlate significantly with PTSD symptoms nor with a probable diagnosis for PTSD, contradicting previous findings from refugee populations in Western countries (Schnyder et al., 2015). When controlling for negative cognitions on oneself and the world, self-blame was even associated with lower PTSD symptom severity. This replicates previous findings (e.g., Sheerin et al., 2018; Startup et al., 2007). One intriguing explanation for this could be the protective function of a feeling of control originating from behavioural self-blame (Koss et al., 2002), which is part of the subscale measuring self-blame. Such assumption would imply that self-blame could counter-act negative self- and world-views by maintaining a feeling of

control. Meanwhile, we should consider that these results may have been compromised by the low Cronbach's alpha for the self-blame subscale, as outlined in previous work (e.g., Beck et al., 2004; Müller et al., 2010). As the current study is not the first to find a negative relation between self-blame and PTSD symptoms (e.g., Sheerin et al., 2018; Startup et al., 2007), it is important to study the role of self-blame for PTSD in more detail and make sure that instruments are adequate.

In conclusion, the current study supports the view that negative trauma-related cognitions are associated with PTSD symptoms, which confirms previous findings from Western samples (Beck et al., 2004; van Emmerik et al., 2006; Foa et al., 1999). However, this association was mainly found for negative cognitions about the self, not for negative cognitions about the world. For self-blame, a more complex pattern emerged with a significant negative association to PTSD symptoms.

This finding suggests that even in the context of objective instability and lack of safety, negative interpretations of the traumatic event and/or its consequences, concerning oneself and partly concerning self-blame, are associated to PTSD symptoms and diagnosis, in line with the cognitive model of PTSD (Ehlers &Clark 2000). Additionally, negative cognitions about oneself appear to be of particular importance as they show more consistent associations than negative cognitions on the world and on self-blame; this also confirms earlier reports (e.g., Kolts et al., 2004; Moser et al., 2007).

The current study has several limitations. First, the study entails a cross-sectional design which makes it impossible to draw conclusions regarding the causality between predictor and dependent variable. Second, although the HTQ cut-off score of 2.5 for clinically significant PTSD is being used worldwide and in comparable samples (Farhood & Dimassi 2012), its transcultural metric and scale invariance have been found to be questionable. Reassuringly, however, this is mainly relevant when comparing PTSD levels between different cultural groups (Rasmussen et al., 2015), which was not part of our study. Thirdly, the validity of the self-blame subscale has been under discussion due to its measurement invariances and weak factor loadings in previous studies (Müller et al., 2010; Startup et al., 2007). These first limitations call for modesty towards our findings. Fourth, the PTCI subscales vary in the number of items which may result in a suppressor effect of the more extended subscale SELF on the other scales with limited items (Startup et al., 2007). Elevations about the self might overlap with cognitions about self-blame and the world and could therefore possibly suppress existing associations between self-blame and PTSD. Due to the relatively high number of items in the SELF subscale, this overlap would primarily affect the predictive value of the other scales with less items. Fifth, the prevalence of current psychosocial stressors is generally high in Palestinian refugee camps but was not controlled for as a predictor variable in this study. Although a high level of post-traumatic cognitions was found in our sample, it is impossible to determine if these appraisals are indeed related to external circumstances. In future studies, it would be useful to directly examine the interaction between social stressors and cognitions, and how this interaction

relates to PTSD. Sixth, because we assessed PTSD as defined in DSM-IV, our findings may not necessarily generalise to PTSD as currently defined in DSM-5. Seventh, both questionnaires have not been validated for the study sample. However, the PTCI (Diab et al., 2018) and HTQ (e.g., Punamäki et al., 2002) have been used before in Palestinian samples. An eighth limitation is the relatively small sample size. Although it meets rule-of-thumb criteria (e.g., Harris 1985), it cannot be ruled out that type II error (Faber & Fonseca 2014) may be responsible for nonsignificant findings (e.g., on the predictive value of negative cognitions about the world) due to limited power. Future research should therefore replicate in larger samples. Lastly, because we had no access to the dataset of the western reference sample, we were unable to include these in a formal moderation analysis.

Notwithstanding these limitations, our study extends earlier research by showing that the predictive value of negative cognitions on PTSD symptoms and classifications stands firmly within a population living under conflict and presenting high levels of negative trauma-related cognitions. Based on our findings, we tentatively recommend addressing negative cognitions, especially about the self, in working with populations living under conflict and suffering from PTSD. Future studies should test the effectiveness of cognitive therapy for PTSD among populations living under conflict. Also, we recommend including a higher number of participants in future studies, in order to enable analysis on the interactions between the different categories of negative cognitions. Moreover, it appears preferable for future research to examine trauma exposure not only in terms of the number of different types of trauma participants experienced, but also in terms of the number of times they were (repeatedly) exposed to trauma, in order to gain a clear picture of the role of this variable. Additionally, it is important to further investigate cultural and social influences on the content of trauma-related cognitions in cultures other than in Western samples. This could help to identify relevant mechanisms that accompany or underlie negative cognitions, and should be included in local cognitive therapies. This is especially relevant for researchers and clinicians working with refugees in conflict areas.

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Author contributions

Study design: TE and HvH; Data-collection: HvH; Supervision: TE; Data-analyses: HvH; Supervision: PB and WS; Paper writing: HvH, PB, WS and TE.

Conflict of interests

The authors involved in this study have no conflicts of interest.

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Coping styles in refugees with PTSD: Secondary outcomes of a randomised controlled trial

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6

ABSTRACT

Background
While treatment of Post-Traumatic Stress Disorder (PTSD) in refugees is generally effective, many refugees remain symptomatic after treatment. Coping styles could be relevant to PTSD treatment response and as such may be a potential focus of PTSD treatment.

Aims
The study aims to examine 1) if baseline coping styles are related to treatment response after EMDR therapy or stabilisation, and 2) if coping styles change during these treatments.

Method
Seventy-two refugees with PTSD were randomly allocated to 12 hours of EMDR therapy or stabilisation. A coping questionnaire (COPE-easy) and clinical interview for PTSD (CAPS-IV) were administered before and after treatment and at three-month follow-up. The association between baseline coping styles and PTSD symptom change was examined using regression analysis and a t-test. Changes in coping styles were analysed using mixed design ANOVA.

Results
No significant relations between baseline coping style levels and PTSD symptom changes were found. Additionally, coping style levels did not change significantly after either treatment.

Conclusion
Contrary to the hypothesis, treatment was unrelated to (changes in) coping style. Addressing pre-treatment coping styles among refugees receiving short-term therapy, may not be required for reducing PTSD. Changing coping styles may need a longer or different type of treatment.

Keywords
Refugees, PTSD, coping styles, EMDR, stabilisation.

BACKGROUND

War, violence, persecution and human rights abuses force many people to flee their homes and find refuge in neighboring or other countries. Due to armed conflict, numbers of forcibly displaced people have steadily increased over the past decade and have recently surpassed 80 million (UNHCR, 2022). The psychological wellbeing of refugees is threatened not only by traumatic experiences (Bogic, et al., 2015; Giacco, et al., 2018) but also by daily stressors in the country of refuge (Gleeson et al., 2020). Consequently, refugees are at higher risk of developing mental health problems than nonrefugees and migrant populations (Fazel et al., 2005; Lindert et al., 2009; Porter & Haslam, 2005), with Post-Traumatic Stress Disorder (PTSD; 31%) and major depressive disorder (32%) being especially common (Patanè et al., 2022).

Psychological interventions are effective in mitigating PTSD and depression in refugees (Kip et al., 2020), but unfortunately many remain symptomatic after treatment (Nosè et al., 2017). We previously reported on the primary outcomes of a randomised controlled trial (RCT) comparing the safety and efficacy of Eye Movement and Desentisisation and Reprocessing therapy (EMDR) therapy versus stabilisation in refugees with PTSD (Ter Heide et al., 2016). In this trial, EMDR therapy was found to be equally safe and efficacious in reducing PTSD symptom severity as stabilisation, but the effect sizes were small (Ter Heide et al., 2016). An increased understanding of the mechanisms that contribute to psychological recovery in this group, and how these can be promoted, can extend and optimise current treatment options (Nickerson, 2018).

For traumatised refugees, coping is a relevant mechanism for mental health improvement. Coping can be defined as the set of cognitive and behavioural strategies that people employ to deal with stressful situations (Lazarus & Folkman, 1984). Coping is classified into different styles, including problem-focussed (acting to solve or improve the situation), emotion-focussed coping (focusing on thoughts and feelings related to the situation), support-seeking (seeking practical or mental support to deal with the situation) and avoidant coping (avoiding confrontations with the situation) (e.g., Huijts et al., 2012). For refugees coping is especially relevant since it might impact two important sources of burden often reported for this population. First, coping helps refugees deal with the daily stressors they face (Arenliu et al., 2020; Hoare et al., 2020). Second, coping is associated with PTSD symptoms among refugees (e.g., Sachs et al., 2008). In line with this, Huijts et al. (2012), reported a cross-sectional association between problem-focussed coping and lower PTSD symptoms as well as avoidant coping with higher PTSD symptoms, but no relations between emotion-focussed or support-seeking coping and PTSD symptoms were found.

The associations between coping styles and PTSD treatment response have been established, but also seem to vary between samples (e.g., Bourdon et al., 2019). For example, pre-treatment avoidant coping predicted higher post-treatment PTSD

symptomology among military veterans (Badour et al., 2012), but had an opposite effect among rape survivors (Leiner et al., 2012). Following the forementioned studies, the impact of coping styles on PTSD treatment response may be population specific. For refugees, the associations between coping styles and treatment response are not empirically substantiated and require further examination.

Furthermore, the previously described associations between coping styles and PTSD symptomatology (e.g., Huijts et al., 2012) raise the question if coping styles can be improved. While the possibilities of modifying coping among refugees are unknown, helping patients to use beneficial coping styles is defined as a frequent factor in different PTSD treatments (Schnyder et al., 2015). It is relevant to consider the potential impact from treatment on coping from a dual perspective since PTSD therapies can be roughly divided into trauma-focussed and non-trauma-focussed approaches (Schwartzkopff et al., 2021). EMDR therapy is a trauma-focussed treatment in which the reprocessing of traumatic memories is the mechanism of change (e.g., Van den Hout & Engelhard, 2012). Apart from an active overcoming of avoidant coping, change in coping styles is not explicitly addressed in EMDR therapy. Stabilisation, on the other hand, is a non-trauma-focussed supportive treatment that, among other things, explicitly focuses on fostering adaptive coping styles through various techniques (e.g., Ter Heide et al., 2016; Zehetmair et al., 2018). Based on these differences, an exploration of the associations of the two treatments with coping styles is warranted to gain knowledge on the potential changes in coping after PTSD treatment. Consequently, the current study addresses the following questions:

1. Are baseline coping styles related to PTSD treatment response among refugees?
2. Do coping styles change among refugees, during treatment, and do these changes differ between treatment conditions?

As for the first question, based on relevant literature (Huijts et al., 2012) we had the following hypotheses: (1) baseline avoidant coping is inversely related to post-treatment PTSD reductions and related to non-response; (2) baseline problem-focussed coping is related to more PTSD symptom change and treatment response, (3) baseline support-seeking and emotion-focussed coping are not associated with PTSD symptom change or treatment response.

As for the second question, we hypothesised: (4) coping styles change after receiving treatment. Based on the content of the therapies (EMDR therapy aims to tackle the avoidance of trauma-related memories whereas stabilisation techniques focus on increasing functional coping) we expected (5) larger reductions for avoidant coping in the EMDR condition, and (6) larger increases for problem-focussed, support-seeking and emotion-focussed coping styles in the stabilisation condition.

METHODS

Design

Data were used from a randomised controlled trial with two arms: EMDR therapy versus stabilisation (Ter Heide et al., 2016). PTSD symptom severity and coping style levels were assessed at pre-treatment (T1), post-treatment (T2), and three months follow-up (T3). The trial was approved by the medical-ethics committee of the University of Leiden. Trial registration: NARCIS (Dutch National Academic Research and Collaborations Information System) OND1324839; ISRCTN20310201.

Participants

Refugees were included who (a) were at least 18 years of age; (b) met criteria for a PTSD diagnosis according to the DSM-IV-TR; and (c) had an indication for individual PTSD treatment. Exclusion criteria were: psychological conditions that required acute care (i.e., suicidal intent or psychotic features) or interfered with the ability to follow trauma-focussed treatment (i.e., substance dependence or cognitive disorders).

Seventy-two patients were included in the study, 36 in each arm. They had all applied for asylum in the Netherlands: one person was undocumented, 12 were in the asylum procedure, 13 had a temporary residency permit, 30 had an indefinite residency permit and 16 had Dutch nationality. Participants were mostly men (n = 52, 72%), had a mean age of 41 years, and originated from 24 different countries (Iraq n =17, 24%; Afghanistan n = 15, 21%; Iran n = 6, 8%; Bosnia-Herzegovina n = 4, 6%; Sudan n = 4, 6%; several other countries n = 26, 35%). In both groups 20 participants were treated with the help from an interpreter.

Procedure

The trial was conducted at an outpatient mental health clinic in the Netherlands, between September 2009 and August 2012. Patients who met the inclusion criteria and consented (written) to the study were administered a MINI International Neuropsychiatric Interview (Sheehan et al., 1998) to verify inclusion and exclusion criteria. Those who were eligible were then randomly assigned to 12 hours (9 sessions) of EMDR therapy or 12 hours (12 sessions) of stabilisation. This resulted in an equal number of treatment hours and maximum ecological validity towards the original session duration of each treatment intervention. Measurements and treatments were offered in Dutch with help from (face-to-face or telephone) interpreters when necessary.

Interventions

Therapist manuals containing information on the study were used by the study therapists.

The EMDR condition was performed by clinicians who had successfully completed

accredited advanced EMDR courses. The first three treatment sessions (60 minutes each) were focussed on treatment planning and preparation. This included practical coordination, psychoeducation on PTSD and EMDR, exploring the patients' explanatory model, making a timeline of traumatic experiences and symptoms, and selecting memories for desensitisation. Subsequently, six sessions (90 minutes each) were performed using the Dutch version of the EMDR protocol (de Jongh & ten Broeke, 2003), without adding any stabilising interventions.

The stabilisation condition was performed by clinicians who were all experienced in conducting stabilising interventions. The intervention consisted of twelve sessions (60 minutes each) matching the patient's needs and without performing trauma exposure. This resulted in interventions focussed on increasing safety, control over symptoms, and increasing psychosocial skills (e.g., emotion regulation, stress management). To optimise ecological validity, non-structured stabilisation was chosen over a protocolled form of stabilisation treatment.

Meassures

PTSD

The Clinician-Administered PTSD Scale for DSM-IV (CAPS-IV; Blake et al., 1995) was used to measure PTSD diagnosis and severity. The interview measures frequency and intensity for all 17 DSM-IV PTSD symptoms in the past week and has a total of 30 items. Symptoms are rated on a 4-point Likert -scale, resulting in a maximum score of 8 per symptom. Higher scores indicate more PTSD symptom severity and the total score ranges from 0 to 136 (Haagen et al., 2017). The CAPS has strong psychometric properties and is considered the 'golden standard' for measuring PTSD (Weathers et al., 2001). The transcultural applicability of this instrument is established (Renner et al., 2006). Cronbach's alpha of the scale was .86 in the current study.

Coping

Coping was measured using the self-report Cope-Easy questionnaire (Kleijn et al., 2000), which is a Dutch adaptation of the COPE questionnaire (Carver, et al., 1989). The scale includes 32 items rated on a 4-point scale ranging from 1 (*not at all*) to 4 (*a lot*). Participants are asked to rate how they generally react to difficult situations, with higher scores indicating more available coping relative to lower scores. Items are clustered into four subscales that match coping styles: problem-focussed (an average of the mean scores of suppression, active coping, and planning), support-seeking (an average of the mean scores of venting of emotions, emotional social support and instrumental social support), emotion-focussed coping (an average of the mean scores of restraint coping, acceptance, positive reinterpretation, religion, and humor) and avoidance (an average of the mean scores of substance abuse, denial, behavioural disengagement and mental disengagement) (Litman, 2006). The psychometric properties and transcultural

applicability of the scale are sufficient, (Huijts et al., 2012; Knipscheer et al., 2015).

Cronbach's alpha for the main coping scales problem-focussed (.83), emotion-focussed coping (.78), and support-seeking (.70) were adequate. Cronbach's alpha for the avoidance scale was .40, indicating a low level of internal consistency for this particular scale. Examination of the subscales underlying the avoidance scale showed that internal consistency of the denial (.74) and mental disengagement (.66) subscales was adequate. Internal consistency of the substance abuse (.28) and behavioural disengagement (.40) subscales, however, was low. The substance abuse subscale consists of four items representing abuse of four different substances (i.e., alcohol, medication, cigarettes, and painkillers) which are conceptually independent (e.g., abuse of alcohol is not necessarily informative for abuse of medication). Hence, the highest score on the four subscale abuse items was deemed to be a more appropriate operationalisation of the substance abuse subscale compared to the original operationalisation of the mean across all four items. Additionally, we removed behavioural avoidance because of its low reliability (.40) and its low inter-item correlation with the other categories. Its relatively poor performance is in line with previous studies (Kleijn, Heck, & Van Waning, 2000). This make sense when considering the behavioural avoidance questions (e.g., "I went to movies or watched TV to think about it less"), which require an action tendency that contradicts questions from the other categories such as mental disengagement (e.g., "I reduced the amount of effort I was putting into solving the problem"). The adaptions resulted in a Cronbach's alpha of .56.

Statistical analyses

All analyses were performed with SPSS version 27 using the intent-to-treat strategy. The amount of missing data varied between (sub-) scales and time-points, with no missing data on the CAPS-IV on T1 and 19% for support seeking on T1. These missings were considered at random. The Markov Chain Monte Carlo (MCMC) method was used to impute 50 datasets with 25 iterations. To check for inconsistencies between the original and imputed sample, all analyses were performed on the imputed and original dataset. Prior to the analyses all assumptions were tested and taken into consideration.

CAPS-IV difference scores were calculated by subtracting T1 CAPS-IV scores from T3 CAPS-IV scores (T3-T1). 'Responders' were defined as a CAPS-IV reduction of at least 10 points, non-responders or deteriorating responders were classified as participants with a CAPS-IV increase or a reduction of 9 points or less (Schnurr et al., 2003) and labelled 'non-responders'. Two-tailed independent t-tests were used to test if treatment responders, in terms of reduction in PTSD symptom severity, differed with regard to the four main coping styles at baseline from non-responders. A Bonferroni correction was applied to avoid the risk for Type 1 error due to multiple testing (Moore & McCabe, 2006, pp 430). Therefore, significance level was set at .05/5 = .01. In addition, Cohen's d effect sizes were calculated, with the following interpretation: small = 0.2, medium =

0.5, large = 0.8 (Field, 2018; Lakens et al., 2013). To check for differences between the original and adapted avoidance scale, results were run for both versions.

Additionally, we tested if baseline coping style levels were associated with change in PTSD symptom severity, using multiple regression analysis. The dependent variable treatment outcome was defined as the CAPS-IV difference between T1 and T3 (T3-T1). This is a suitable approach, when one controls for the potential confounding effects of baseline scores of the change variable (Dalecki & Willits 1991). The independent variables, pre-treatment problem-focussed, support-seeking, and emotion-focussed coping, and the adapted version of avoidant coping were regressed on treatment outcome. Due to the limited sample size, T1 CAPS-IV scores were not directly added to the regression model as a covariate. When the difference score was found to be significantly predicted by one or more of the independent variables, T1 CAPS-IV scores could subsequently be added to the model to check for possible confounding. Prior to this analysis, Pearson correlations were calculated to evaluate the univariate relations between treatment outcome and the different coping styles. Due to the high intercorrelation between the original avoidant coping and the adapted version of avoidant coping, it was impossible to simultaneously enter both in the analysis and solely the adapted version of the avoidance scale was included. To check whether the original and adapted avoidance scale yielded different results, two multiple regression models were tested: the first containing the adapted and the second containing the original avoidance scale. Since the model with the original avoidance scale was added as a check, only inconsistencies, if present, are reported. Variance Inflation Factors were considered to ensure the independency of the different independent variables.

To test whether coping styles change during treatment and whether changes differ between treatment conditions, general linear models (GLM) with the three measurement occasions (within-subjects factor) and with the treatment conditions EMDR and stabilisation (between-subjects factor) were used. For each of the coping style scales a separate GLM was tested. Significance of the main effect of the within-subject factor was tested which is indicative of a significant change in coping style during treatment. A Bonferroni correction was applied to avoid the risk for Type 1 error due to multiple testing (Moore & McCabe, 2006, pp 430). Therefore, significance level was set at .05/5 = .01. Effect sizes (η_p^2), were added for this step ,with the following interpretation: small = .01, medium = .06, large > .14 (Lakens et al., 2013). Significance of the interaction effect between the within- and between-subjects factors was tested which is indicative of a significant difference in the magnitude of change in the coping style between the treatment conditions. When the assumption of sphericity was violated, the degrees of freedom were corrected for this scale using the Greenhouse-Geisser correction. To check whether the original and adapted avoidance scale yielded different results, analyses were also performed on-the original version of the avoidance scale. If inconsistencies appeared, they were taken into account.

RESULTS

Descriptives

Participant characteristics are presented in Table 1. All coping styles were rated between 2 (a little) and 3 (medium) with the highest mean for problem-focussed coping.

Table 1

Sample Descriptives of EMDR Versus Stabilisation and Total Sample

	EMDR	N	Stabilisation	n	Total sample	n
Characteristic						
Age in years mean (sd)	43.1 (10.7)	36	39.8 (11.8)	36	41.46 (11.34)	72
Women	17%	6	39%	14	28%	20
Treatment dropout	17%	6	22%	8	19%	14
CAPS-IV scores						
T1 mean (sd)	74.67 (18.06)	36	78.25 (18.34)	36	76.46 (18.16)	72
T2 mean (sd)	67.37 (23.15)	32	68.86 (26.93)	29	68.08 (24.82)	61
T3 mean (sd)	69.94 (25.07)	32	69.55 (25.05)	31	69.75 (25.86)	63
Cope-easy scores						
Problem-focussed coping						
T1 mean (sd)	2.67 (.68)	35	2.85 (.75)	34	2.76 (.71)	69
T2 mean (sd)	2.68 (.63)	29	2.66 (.64)	30	2.67 (.63)	59
T3 mean (sd)	2.53 (.85)	30	2.72 (.63)	30	2.62 (.75)	60
Support-seeking coping						
T1 mean (sd)	2.27 (.57)	35	2.50 (.73)	35	2.39 (.66)	70
T2 mean (sd)	2.43 (.74)	28	2.59 (.81)	30	2.52 (.78)	58
T3 mean (sd)	2.37 (.66)	30	2.46 (.56)	30	2.41 (.61)	60
Emotion-focussed coping						
T1 mean (sd)	2.34 (.54)	35	2.61 (.63)	34	2.47 (.60)	69
T2 mean (sd)	2.37 (.55)	29	2.48 (.64)	30	2.42 (.59)	59
T3 mean (sd)	2.50 (.61)	29	2.51 (.58)	30	2.51 (.59)	59
Avoidant coping						
T1 mean (sd)	2.37 (.51)	35	2.35 (.40)	34	2.36 (.46)	69
T2 mean (sd)	2.10 (.46)	30	2.32 (.56)	29	2.21 (.52)	59
T3 mean (sd)	2.35 (.49)	29	2.39 (.50)	30	2.37 (.49)	59
Avoidant coping adapted						
T1 mean (sd)	2.65 (.79)	35	2.59 (.53)	34	2.62 (.67)	69
T2 mean (sd)	2.29 (.59)	30	2.55 (.79)	30	2.42 (.71)	60
T3 mean (sd)	2.52 (.73)	29	2.56 (.72)	30	2.54 (.72)	59

Note. CAPS-IV = The Clinician-Administered PTSD Scale for DSM-IV; EMDR = Eye Movement Desensitisation and Reprocessing; T1 = baseline; T2 = post-treatment ; T3 = follow-up.

Comparison of baseline coping scores between responders and non-responders

Results of the t-tests are reported in Table 2. There were no significant differences between treatment responders and non-responders with regard to any of the coping styles at baseline. These findings were consistent between the original and imputed

sample. In both samples effect sizes for the differences in baseline coping styles between responders and non-responders appeared to be small (Cohen's d <.50).

Table 2
T-test on the Predictive Value of Coping Styles for PTSD Treatment Response Between Responders and Non-Responders

	Non-responders			Responders						
Variable	N	M	SD	N	M	SD	df	t	*p*	*d*
Original sample										
Problem-focussed	37	2.73	.67	23	2.80	.76	58	0.40	.69	-0.08
Support-seeking	37	2.46	.59	24	2.37	.74	59	-0.56	.58	0.11
Emotion-focussed	37	2.51	.63	23	2.51	.56	58	0.01	.99	0
Avoidant	37	2.45	.43	23	2.24	.46	58	-1.82	.07	0.32
Avoidant-adapted	37	2.75	.62	23	2.51	.72	58	-1.40	.17	0.29
Imputed sample										
Problem-focussed	41.3	2.71	.66	30.7	2.82	.75	2893	0.62	.53	-0.13
Support-seeking	41.3	2.42	.61	30.7	2.35	.71	1457	-0.40	.69	0.09
Emotion-focussed	41.3	2.48	.61	30.7	2.45	.56	1114	-0.20	.84	0.04
Avoidant	41.3	2.46	.42	30.7	2.21	.45	3100	-2.19	.03	0.38
Avoidant adapted	41.3	2.75	.60	30.7	2.45	.70	5436	-1.80	.07	0.37

Note. d = effect size Cohens' d; PTSD = Post-Traumatic Stress Disorder.

Associations between baseline coping styles and change in PTSD symptom severity

Pearson correlations are presented in Table 3. Weak and non-significant relations were found between the coping styles and PTSD symptom severity. Significant positive correlations were found between support-seeking and problem focussed coping, and emotion-focussed and problem-focussed coping, and emotion-focussed and support-seeking coping. This indicates that higher levels in one of these coping style scales were associated with higher levels in the other coping style scale. As expected, a very strong and significant correlation was found between the original and adapted avoidant coping scale, indicating that both concepts highly overlapped.

Table 3
Pearson Correlation Matrix on the Relations Between Change in Post-Traumatic Stress Symptom Severity and Coping Styles

Variable	1	2	3	4	5	6
Original sample						
1.PTSD change	-					
2. Problem-focussed coping	.06	-				
3. Support-seeking coping	.09	.29*	-			
4. Emotion-focussed coping	.02	.54**	.49**	-		
5. Avoidant coping	.10	.09	.05	.26*	-	
6. Avoidant coping adapted	.05	-.02	.01	.05	86**	-

Table 3 *Continued.*

Variable	1	2	3	4	5	6
Imputed sample						
1. PTSD change	-					
2. Problem-focussed coping	.001	-				
3. Support- seeking coping	.08	.29*	-			
4. Emotion-focussed coping	.06	.53**	.49**	-		
5. Avoidant coping	.18	.08	.04	.26*	-	
6. Avoidant coping adapted	.14	-.03	.01	.05	.85**	-

Note. CAPS-IV = Clinician Rated PTSD Scale for DSM-IV; PTSD = Post-Traumatic Stress Disorder; PTSD change = CAPS-IV T3 – CAPS-IV T1.
* $p < .05$ (2-tailed); ** $p < .001$ (2-tailed).

Table 4 summarises the findings of the multiple regression model. Overall, baseline coping styles did not significantly account for the variation (original dataset: $R^2 = 0.016$; imputed dataset: $R^2 = .034$) in PTSD symptom reduction (original dataset: $F(4, 55) = 0.22$, $p = .93$; imputed dataset: $F(4, 63.6981) = 0.40$, $p = .81$). None of the individual baseline coping styles were significantly associated with change in PTSD symptom severity. VIF values indicated that the overlap between the coping scales was acceptable. Results were similar in the original as well as the imputed sample, and the model including the original coping scale yielded similar results.

Table 4
Multiple Regression Analyses on the Predictive Value of Coping Styles for Treatment Response

Predictor	*B*	*SE B*	β	*t*	*p*	VIF*	R^2
Original Sample							
Constant	-18.46	19.87		-0.93	.36		.016
Problem-focussed	2.11	5.31	.06	0.40	.69	1.47	
Support-seeking	3.96	5.35	.11	0.74	.46	1.28	
Emotion-focussed	-2.64	6.79	-.07	-0.39	.70	1.75	
Avoidant-adapated	1.83	4.64	.05	0.39	.70	1.00	
Imputed sample							
Constant	-26.68	20.11		-1.33	.19		.034
Problem-focussed	-1.33	5.28	-.04	-0.25	.80	1.46	
Support-seeking	2.69	5.47	.07	0.49	.62	1.37	
Emotion-focussed	1.70	6.88	.04	0.25	.80	1.76	
Avoidant adapated	4.91	4.68	.13	1.05	.29	1.01	

Note. VIF = Variance Inflation Factor.
* = Maximum Variance Inflation Factor based on averaged VIF's of all imputed datasets for outcomes related to imputed sample.

Changes in coping style scores during treatment

Results of the mixed method ANOVA are listed in Table 5.

Table 5
Mixed Method ANOVA on the Impact of Treatment on Coping Styles

Predictor	F	*df, error df*	*p*	η_p^2
Original Sample				
*Within-subjects factor*Problem-focussed	0.21	2.00, 102.00	.81	*.004*
Support-seeking	1.43	2.00, 102.00	.24	*.027*
Emotion-focussed	0.56	2.00, 102.00	.57	*.011*
Avoidant	2.09	2.00, 100.00	.13	*.040*
Avoidant-adapted[1]	1.61	1.76, 89.54	.21	*.031*
*Within*Between subjects interaction*				
Problem-focussed*condition	0.70	2.00, 102.00	.50	
Support-seeking*condition	0.55	2.00, 102.00	.58	
Emotion-focussed*condition	1.01	2.00, 102.00	.37	
Avoidant*condition	1.28	2.00, 100.00	.28	
Avoidant-adapted*condition	1.21	1.76, 89.54	.30	
Imputed Sample				
Within-subjects factor				
Problem-focussed	1.24	2.00, 2849.77	.29	*.017*
Support-seeking	0.47	2.00, 1189.80	.62	*.007*
Emotion-focussed	0.70	2.00, 1204.34	.50	*.010*
Avoidant	3.07	2.00, 1800.40	.05	*.042*
Avoidant-adapted	1.91	2.00, 4226.22	.15	*.027*
*Within*Between subjects interaction*				
Problem-focussed*condition	0.52	2.00, 1850.49	.60	
Support-seeking*condition	0.22	2.00, 2981.25	.80	
Emotion-focussed*condition	0.94	2.00, 2581.53	.39	
Avoidant*condition	1.05	2.00, 8817.51	.35	
Avoidant-adapted*condition	0.74	2.00, 4548.48	.48	

Note. [1] The assumption of sphericity was violated for the adapted avoidance scale in the original dataset, therefore the degrees of freedom were corrected for this scale using the Greenhouse-Geisser correction.

None of the coping styles changed significantly between T1, T2 and T3, and effect sizes were small ($\eta_p^2 < .06$). There were also no significant differences between the treatment conditions in the amount of change in any of the coping styles between T1, T2, and T3. In line with the lack of significant findings, Table 1 reveals that there are small differences on mean coping style scores between T1, T2 and T3 in each treatment condition and for the whole sample.

DISCUSSION

This study examined 1) the role of coping styles in PTSD reduction after treatment, and 2) the role of PTSD treatment in changes in coping styles during EMDR versus stabilisation in treatment-seeking refugees. Results show that treatment-seeking refugees with PTSD employ a broad range of coping styles (problem-focussed, emotion-focussed, support-seeking and avoidant), higher than reported during a previous measurement among

a comparable sample (Huijts et al., 2012). However, our hypotheses were only partly confirmed.

No predictive value of coping styles for PTSD treatment response

None of the baseline coping styles (problem-focussed, emotion-focussed, support-seeking and avoidant) were significantly related to changes in PTSD symptoms during treatment. Our findings confirmed the hypotheses on emotion-focussed and support-seeking coping but confuted the expectations regarding avoidant and problem-focussed coping. Since avoidance is a central symptom of PTSD, it was likely that avoidant coping would be related to PTSD symptoms. Moreover, this relation was validated cross-sectionally among other refugee samples (Elklit et al., 2012; Finklestein et al., 2012), one of which from the same institute as the current study (Huijts et al., 2012). The latter study also fueled our expectations on problem-focussed coping for PTSD symptom reductions. Our inconsecutive findings show that baseline coping styles are no prerequisite for PTSD changes after treatment, and require further explanation.

In the current study, coping was measured as a personal, instead of a contextual, resource. Earlier longitudinal investigations confirm the limited relevance of comparable individual factors (e.g., self-efficacy and social engagement) (Nickerson et al., 2022) for subsequent PTSD among refugees. In line with this, our findings question the potency of personal resources for altering PTSD in this group (Arnetz et al., 2013). The buffering effects of individual resilience factors, like coping (Sachs et al., 2008), may reach a ceiling effect, given the challenging conditions that refugees face, and consequently lose their protective value (Hobfoll et al., 2011). Earlier research suggested that social mechanisms, like post-migration stressors, can undermine the potential effects of coping among refugees (Solberg et al., 2021). Hence, strengthening patients prior to their PTSD treatment, via improvements in individual coping styles, does not seem helpful based on our data.

No changes in coping styles after treatment

Contrary to our expectations, coping styles did not change significantly after treatment, nor between treatment conditions. Although EMDR therapy and stabilisation target different change mechanisms (Ter Heide et al., 2016), neither had any impact on coping styles in this study. Hence, increasing coping styles via EMDR or stabilisation treatment seems unfeasible based on our findings. This is a saillant finding, since addressing coping styles is seen as a common factor of several trauma-focussed therapies (Schnyder et al., 2015).

A potential explanation is that coping can be seen as a persistent trait, instead of more volatile state characteristic (Beutler et al., 2003). Since refugees are challenged by postmigration stressors (Li et al., 2016), they have had the unfortunate opportunity to become aware of their coping styles in many situations. This could result in response

tendencies with an overarching self-knowledge based on profound coping experiences. Therefore the questionnaire may have evoked responses that are based on persistent tendencies, although it was developed to capture both situational coping responses and general coping tendencies (Carver et al., 1989). Additionally, the number of treatment sessions can impact treatment effects among refugees (Lambert & Alhasoon, 2015), which can explain relatively limited impact of short interventions. In light of our findings, expectations on the flexibility of general coping styles after short-term treatments for refugees should be tempered.

Another explanation for the absent changes in coping styles is the refugee context. Their daily life circumstances often contain challenges beyond individuals' control, which can impair coping skills in the long run (Miller & Rasmussen, 2010). This can counterbalance positive changes that might occur in treatment. This is especially relevant since the majority of participants showed no reliable improvement in PTSD after treatment (Ter Heide et al., 2016) and few other predictors for PTSD change were significant (Haagen et al., 2017) in previous work on the same dataset. Additionally, meta-analytic findings show that the majority of treated refugees remain symptomatic after PTSD interventions (Nosè et al., 2017). The difficult living conditions that refugees face negatively impact their PTSD levels (e.g., Nickerson et al, 2022), and may have comparable impact on coping styles resulting in diminished treatment effects on this outcome.

Strengths and limitations

The current study has several limitations. First, the COPE-easy brought some concerns. Because the COPE-easy is a self-report questionnaire there is a risk of response bias (e.g., Wetzel, et al., 2016). The cultural representativeness of the COPE-easy is another relevant issue. The study sample is culturally heterogeneous, with participants originating from 24 different countries, while coping styles can differ between cultural groups (Akhtar & Kroener-Herwig, 2019). Participants may employ culture-specific coping styles which are not included in the scale, but matter for PTSD symptoms or treatment response. Second, the RCT was performed in a specialised treatment setting offering care to a highly complex refugee population. Therefore it cannot be ruled out that current findings should be assigned to characteristics of the study which limit the generalisability to less complex refugee patients. Last, the data collection was performed before the CAPS-5 was released, which undermines the generalisability to the current understanding of PTSD.

Notwithstanding these limitations, several strengths are worth mentioning. Associations between coping styles and PTSD over time were examined, which is an unsaturated domain in scientific literature on refugee wellbeing (Seguin & Roberts, 2015). Our findings allow us to draw conclusions on general PTSD change, but also on response categories (responders versus non-responders) which increases the clinical

relevance. Additionally, the RCT design allowed us to study the different impact of EMDR and stabilisation on coping styles. Consequently, our conclusions may less likely be assigned to a specific type of treatment. This is especially relevant when taking the difficulties in conducting research among refugee populations into account (Djelantik et al., 2020), which unfortunately limits the amount of RCTs performed among refugees. Lastly, a profound and well-considered effort was made to improve the avoidance scale, in line with earlier noted challenges (Kleijn et al., 2000). Herewith the current study contributes to the psychometric strength of the COPE-easy.

Recommendations for future research

Based on the current study, serveral recommendations can be made for future work. Approaching coping as a contextual instead of an individual factor would be suitable for the study population. Future studies should explore if improving community and social factors, that transcend individual resources and increase the ability to cope with daily life, can accelerate the course of PTSD treatment. For example, considering the impact of addressing discrimination or improving language skills is useful, since these factors are related to refugees' mental health (Kim, 2016).

To gain knowledge on the specific role of treatment for coping styles, our findings might be compared with the natural course of coping styles among the research population. Longitudinal studies on the trajectories of coping styles among traumatised refugees in a naturalistic setting could clarify how coping styles develop without treatment. Additionally, to find a definite answer on the impact of treatment on changes in coping, it is recommended to evaluate the effect on coping styles of treatments with a higher frequency (Zepeda Méndez et al., 2018) or a higher number of sessions (De la Rie et al., 2020) than the current study protocol trial allowed for.

The adapted version of the avoidant coping subschale should be retested among other samples to decide if our operationalisation is an evincive improvement. Also, scoring criteria for the COPE-easy should be developed, to add meaning to outcomes of this instrument. Additionaly, future studies should consider the cultural orientations of participants on coping styles. Explorative research is suitable to determine which specific coping styles are relevant for refugees taking on PTSD treatment (e.g., Baranik et al., 2018).

Conclusion and implications

In conclusion, we did not find any evidence that coping styles matter for short-term PTSD treatment followed by refugees at a specialist mental health setting. PTSD changes did not rely on pre-treatment coping styles. Based on our findings, increasing pre-treatment coping styles among refugees receiving short-term therapy, is not recommended for reducing PTSD. Additionally, treatment did not influence coping styles. Hence, improving copings styles via PTSD treatments seems unfeasible for refugees, and should be done

by longer or different treatments.

The impact of other operationalisations of coping styles on PTSD should be researched, and other refugee samples should be included, to control the generalisability of our findings. Additionally, the adapted avoidance scale should be retested to control its' validity. Evaluating the impact of treatments with more sessions or higher frequencies, on coping styles is warranted, as well as revealing the natural course of coping styles over time. Future research should meanwhile examine the impact of other change mechanisms for diminishing PTSD symptoms in this highly challenged refugee population.

Author contribution

Data collection: JJtH; conceptualisation: HvH, and JJtH; methodology: HvH and NvdA; data-analysis: HvH, NvdA and GV; writing original draft: HvH and JJtH; writing editing: NvdA, RK, JK, DM, TM and AM; visualisation: HvH.

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Disclosure statement

The authors have no conflict of interests.

Data availability statement

Data can be obtained through the last author upon reasonable request. Data is not directly added to the paper to due the highly senstive information of the included patients.

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Can circumstances be softened? Self-efficacy, post-migratory stressors, and mental health among refugees

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ABSTRACT

Post-migratory stressors (PS) are a risk factor for mental health problems among resettled refugees. There is a need to identify factors which can reduce this burden. Self-efficacy (SE) is associated with refugees' mental health. The current study examined whether SE can protect this group from the impact of PS on mental wellbeing. Higher levels of PS were expected to be associated with higher levels of mental health problems. In addition, we expected this linkage to be moderated by lower SE. Questionnaires were administered to a non-clinical refugee sample (N = 114, 46% female, average age 35 SD = 10.42 years) with various backgrounds. The following questionnaires were used: the Self-Reporting Questionnaire-20 (SRQ-20) to assess mental health problems, the General Self-Efficacy Scale (GSES) to measure SE, and an adapted version of the Post-Migration Living Difficulties Checklist (PMLD) to measure PS. Bivariate correlations and multiple linear regression analysis were performed. No significant contribution was found for SE or the interaction of SE and daily stressors, above and beyond the significant contribution of daily stressors to mental health problems. The findings reinforce that PS affects mental health and suggest that SE had a limited impact on mental health in this non-clinical sample of refugees.

Keywords
Refugees, self-efficacy, post-migratory stressors, mental health problems, non-clinical population.

BACKGROUND

The worldwide number of refugees has continuously increased since 2005. By the end of 2019, the number of forcibly displaced people was 79.5 million, 26 million of whom were registered as refugees (UNHCR, 2020a). Forcibly displaced people have left their homes as a consequence of social and political or other events that disorganise public stability (UNHCR 2020b). The sub-group of refugees contains people who are defined by the UNCHR as "someone who is unable or unwilling to return to their country of origin owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion" (UNHCR, 2010, page 3). This group is at high risk of developing mental health problems (Buber-Ennser et al., 2019; Nestereko et al., 2020; Niederkrotenhaler et al., 2020; Turrini et al., 2017). To illustrate, the prevalence of common mental health disorders among refugees is about twice as high compared to migrant worker populations (Lindert et al., 2009).

Factors contributing to these mental health problems can be roughly divided in two categories. First, as an increasing number of studies have shown, refugees are exposed to many traumatic experiences, inflating the risk of mental health problems and psychiatric diagnoses, such as Post-Traumatic Stress Disorder (PTSD) and depression (Steel et al., 2009). The second established factor that threatens the mental wellbeing of refugees is postmigratory stress (Chu et al., 2013; von Haumeder et al., 2019; Li et al., 2016; Porter & Haslam, 2005). Examples of post-migratory stressors are social isolation (Buhmann et al., 2014), unemployment (Kaltenbach et al., 2020), and discrimination (Ellis et al., 2008; Mölsä et al., 2017).

Although intervention studies among refugees are relatively scarce, trauma-focussed interventions have been recommended as first-line interventions for PTSD in refugees (Nosè et al., 2017; Turrini et al., 2019). Unfortunately, there is less clarity on how to intervene on the profound effects of postmigratory stressors (Hynie, 2018). Evidently, the impact of post-migratory stressors can be partially reduced by practical changes, such as obtaining a job or increased proficiency in the host country language (Giacco, 2020), as well as by policies enabling these factors (Niemi et al., 2019). This level of intervention, however, often requires policy change in host countries, and thus is usually beyond the influence of individual refugees and their helpers. Therefore, increasing personal resources for dealing with these post-migratory stressors is crucial. A focus on resilience building within refugee communities is recommended (Murray et al., 2010). However, the psychological mechanisms underlying the association between post-migration stressors and mental health outcomes, that might be targeted to improve resilience, are still largely unclear (Giacco, 2020; Li et al., 2016).

Self-efficacy, the individual perception of one's personal ability to deal with upcoming challenges and stressors (Benight & Bandura, 2004), may be one key mechanism moderating the relationship between post-migratory stress and mental health

problems. Previous research among refugees revealed its positive association with mental health and positive post-migratory outcomes (e.g., employment) (Sulaiman-Hill & Thompson, 2013). Additionally, self-efficacy predicted positive affect over a time period of two years among a group of refugees living in the United Kingdom (Tip et al., 2020). An experimental study demonstrated that enhancing self-efficacy led to increased distress tolerance among treatment-seeking refugee torture survivors (Morina et al., 2018). Although these studies underline the importance of self-efficacy for refugees, it still needs to be determined whether self-efficacy mitigates the negative impact of post-migratory stressors on mental health problems within this group.

The current study examined the potential moderating role of self-efficacy in the relationship between post-migratory stressors and mental health problems, in a nonclinical sample of refugees residing in the Netherlands. We expected that higher levels of post-migration stressors would be associated with higher levels of mental health problems. In addition, we expected this linkage to be moderated by lower self-efficacy. Findings can be used to guide (preventive) mental health programmes and policies for refugees.

METHODS

Procedure

The current study used a cross-sectional design. Participants were recruited via six different non-governmental organisations (NGOs) operating in the area of Amsterdam, the Netherlands. Measurements were primarily conducted to monitor various support programmes offered by these NGOs, focussed on job skills and empowerment. The current study utilised their baseline measurements for secondary data analysis. The aim of their evaluation was to investigate whether their programmes were associated with increased empowerment, measured by changes in self-efficacy, and quality of life, measured by post-migration problems and mental health problems. Subsequently, the collected data were deemed suitable for our research objectives

Participation was voluntary and participants gave informed consent before filling out the questionnaires. Questionnaires were available in Dutch and English. Additionally, the questionnaires were translated from Dutch and/or English (depending on the translators' preference) into Arabic and Tigrinya, the most prevalent languages in the study sample, using a back-and-forth method, with discrepancies being reconciled. Translators were accredited translators or bilingual individuals with experience in working with refugees.

The self-report questionnaires were administered during group meetings, just before the participants started a group programme aimed to increase their personal skills in dealing with work or social challenges connected to their refugee status. The content of

these support programmes differed between the participating NGOs. It was guaranteed that the data would be anonymised, and participation was voluntarily. Participants were instructed to fill out the questionnaires individually.

Assistance to the participants during the administration of the questionnaires was provided by researchers and/or bilingual professionals who were instructed by the researchers. They also checked questionnaires for missing responses directly after administration and requested the participants to complete missing items when applicable.

The Utrecht University medical ethical review board declared that there was no need for review of the ethical merits of the current study, because the questionnaires were primarily administered for evaluating the NGO programmes.

Participants

One hundred and fourteen (N = 114) refugees participated in the current study. Their characteristics are listed in Table 1. All participants had a temporary residency permit, which indicates that, in general, they received a legal residency permit less than 5 years ago. The target groups of the participating NGOs overlapped with the inclusion criteria of the current study, which were (1) being a refugee, (2) age ≥ 18, and (3) available informed consent regarding the data collection and analysis. There were no exclusion criteria. Participants had been referred to the NGOs by their personal (online) network, charity organisations, or governmental organisations.

Because the current study was based on secondary data analysis, no sample size calculation was made prior to the data collection. However, after the current study was designed, an estimation was made to check if the current sample size was satisfactory. A sample of N = 114 was found to suffice for detecting a moderation effect, explaining 6.5% of the variance by the interaction effect of self-efficacy and daily stress, in the context of multiple regression, with a power of 0.80.

Table 1
Participants' Characteristics (N = 114)

Variable	N	(%)	M	(SD)	range
Demographic characteristics					
Female	52	45.61			
Male	56	49.12			
Missing	6	5.27			
Age in years	98	85.96	35	(10.42)	21-65
Missing	16	14.04			
Background					
Syrian	66	57.9			
Eritrean	12	10.5			
Other background	17	14.9			
Missing	19	16.7			

Questionnaires

Self-Reporting Questionnaire-20

The Self-Reporting Questionnaire-20 (SRQ-20) was used to measure general health problems within the last 30 days. Participants were asked to respond to 20 questions (2-point scale: "yes" or "no"), regarding their mental health (e.g., "Do you feel nervous, tense or worried?"). The questionnaire, developed by the World Health Organisation (Beusenberg et al., 1994), was validated in several cultural contexts (Netsereab et al., 2018; Scholte et al., 2011). The Cronbach's alpha in the current study was 0.84.

General Self-Efficacy Scale

Self-efficacy was measured with the General Self-Efficacy Scale (GSES) (Schwarzer & Jerusalem, 1995). Participants were asked to rate 10 items (e.g., "Thanks to my resourcefulness, I know how to handle unforeseen situations") on a 4-point scale (ranging from "not at all true" to "exactly true"). The internal consistency and multicultural validity of the questionnaire are endorsed (Luszczynska et al., 2005; Schwarzer & Jerusalem, 1995). Cronbach's alpha in the current study was good (alpha = 0.81).

Post-Migration Living Difficulties Checklist

Daily stressors were measured with the Post-Migration Living Difficulties Checklist (PMLD) (Silove et al., 1997). This questionnaire was adapted to the specific situation and characteristics of the study population, in cooperation with cultural mediators. For example, the item "little government help with welfare" was changed into two items, namely "little help from charities" and "little help from the government" since the target population often experiences these two sources of help as very different. The cultural mediators were people with a refugee background working or volunteering for the participating NGOs. Participants rated the burden they experienced from 11 potential daily stressors (e.g., "poverty" and "communication problems in the Netherlands") on a visual analogue scale (VAS) (from 0 = "not a problem at all" to 100 = "a very big problem"). Cronbach's alpha in the current study was acceptable (alpha = 0.77).

Statistical analyses

SPSS version 23.0 was used to perform the statistical analysis. Missing values were avoided as much as possible, as described above. Bivariate correlations were calculated in order to reveal the correlations between self-efficacy, mental health problems, and daily stressors. Hierarchial linear regression analysis was used, following the enter method, to examine the study hypothesis. The predictor variables were mean centred before the analysis was conducted. In the first step, self-efficacy and daily stressors were entered as independent variables. In the second step, the interaction between these variables was added as a predictor to the model. The SRQ-20 (mental health problems) was entered as the dependent variable. Before running the analysis, several

assumptions were checked. No outliers were found and the data were distributed normally. Multicollinearity levels indicated enough independence of the different predictors (see Table 3). Listwise deletion was applied for missing items.

RESULTS

Descriptives are listed in Table 2. Men scored significantly higher on self-efficacy compared to woman (p = 0.046). The scores on mental health were significantly different (p = 0.029) between origin groups, with the lowest scores for Eritreans, followed by Syrians, and the highest scores for participants from other countries. They did not differ by age, gender, or background on any other variable in relation to mental health, self-efficacy, and postmigration stressors ($p > 0.05$). Self-efficacy was not significantly correlated with post-migration stressors (r = 0.01) nor general mental health problems (r = −0.07). Post-migration stressors and general mental health problems were significantly positively correlated (r = 0.31, $p < 0.001$).

Table 2
Descriptives (N = 114)

Variable	N	(%)	M	(SD)	range
SRQ-20	110	96.49	0.34	(0.23)	0-1.00
GSES	106	92.98	2.94	(0.54)	1.60-4.00
PMLD	109	95.61	34.88	(19.29)	0-100
Worries about housing situation	108	94.74	22.96	(31.53)	0-100
Interaction with roommates	106	92.98	30.41	(37.05)	0-100
Contact with Dutch institutions	105	92.11	33.64	(30.55)	0-100
Little help from government	101	88.59	34.07	(34.89)	0-100
Little help from charities	106	92.98	26.55	(33.40)	0-100
Being separated from family	108	94.74	33.04	(39.42)	0-100
Worries about family back at home	108	94.74	56.82	(38.86)	0-100
Communication in the Netherlands	104	91.22	43.95	(31.51)	0-100
Discrimination	107	93.86	22.81	(28.92)	0-100
Poverty	105	92.11	32.84	(29.86)	0-100
Loneliness and boredom	106	92.98	39.55	(34.78)	0-100

Note. GSES = General Self-Efficacy Scale; PMLD = Post-Migration Living Difficulties Checklist; SRQ-20 = Self-Reporting Questionnaire-20.

The results of the regression analysis are summarised in Table 3. In step 1, self-efficacy and PMLD were added to the model as independent variables, and mental health was added as the dependent variable. Adding the predictors to the model resulted in a significant increase in R^2 ($F(2, 102) = 4.40$, $p < 0.05$), indicating that these variables explain 7.9% of the variance in mental health. In step 2, the interaction between self-efficacy

and PMLD was added to the model as an additional independent variable, which did not result in a significant increase in R^2 (F(1, 101) = 2.24, p = 0.138). PMLD was the only variable explaining unique variance in mental health. Self-efficacy and the interaction between self-efficacy and PMLD did not contribute to the explained variance in mental health.

Table 3
Hierarchical Regression Analysis on Predictors and Moderator for General Mental Health Problems

Predictor	B	SE B	B	t	*p*	VIF	Δ R^2	R^2
Step 1							0.079	0.079
Constant	0.328	0.021		15.519	0.000			
GSES	-0.024	0.040	-0.058	-0.608	0.545	1.00		
PMLD	0.003	0.001	0.276	2.908	0.004	1.00		
Step 2							0.020	0.099
Constant	0.328	0.021		15.623	0.000			
GSES	-0.030	0.040	-0.07	-0.739	0.461	1.01		
PMLD	0.003	0.001	0.291	3.062	0.003	1.01		
GSES * PMLD	-0.003	0.002	-0.143	-0.150	0.138	1.02		

Note. N=105; GSES = General Self-Efficacy Scale; PMLD = Post-Migration Living Difficulties Checklist; VIF = Variance Inflation Factor. GSES * PMLD = interaction GSES and PMLD.

DISCUSSION

The objectives of the current study were to determine (a) the relation between postmigration stressors and mental health, (b) the relation between self-efficacy and mental health, and (c) the moderating role of self-efficacy in the relationship between postmigratory stressors and mental health problems, in a Dutch refugee sample. We expected that higher levels of post-migration stressors would be associated with higher levels of mental health problems. In addition, we expected this linkage to be moderated by lower self-efficacy. The results only partly confirm our expectations.

A first main finding was that post-migration stressors explained significant variance in mental health problems among the study population. This agrees with prior evidence that post-migration stressors are relevant for the psychological wellbeing of refugees (Hou et al., 2020). Our findings support prior recommendations (Watters, 2001) that (preventive) mental health interventions and policies should consider the impact of post-migratory problems.

We did not find a significant contribution for self-efficacy to mental health problems, which contradicts our hypothesis and previous findings among refugee populations (Morina et al., 2018; Sulaiman-Hill & Thompson, 2013). Additionally, we did not find a significant moderation effect for self-efficacy, which was also contrary to our expectations.

Our study is not the first to find that self-efficacy is unsupportive for mental health among refugees. A recent study among refugees resettled in Turkey and Sweden even revealed that self-efficacy was, via emotional suppression, correlated to psychological distress (Chung et al., 2020), but the link to post-migration stressors was not examined. A literature review (Schönfeld et al., 2017) suggests that self-efficacy is not exclusively advantageous in relation to stress and mental health. For example, one study among patients with somatic conditions indicated that high self-efficacy combined with limited control over pain was related to elevated mental health problems (Schiaffino et al., 1991). A comparable mechanism could explain the absence of a relationship between mental health and self-efficacy in our study. That is, since refugees generally experience high uncontrollability over the daily stressors (Miller & Rasmussen, 2017), they may experience a friction between their self-efficacy and actual control over circumstances that impact their lives, which can abolish the supportive role of self-efficacy (Morina et al., 2018; Sulaiman-Hill & Thompson, 2013). This assumption could be examined in future research by including socio-political factors that objectify the actual control that individuals have over their environmental stress, next to mental health and self-efficacy.

The current study has several limitations. First, the design was cross sectional and consequently it remains unclear how the examined parameters interact on a longitudinal basis. It would, for example, be valuable to know if prior self-efficacy levels affect the impact of later upcoming stressors on mental health. Secondly, the use of questionnaires for non-western populations, as in the current study, has been criticised (Prince, 2008). In addition, questionnaires were administered in a group setting, which is a third limitation, since this may have had an impact on the response tendencies of participants (Stader & Licht, 1992). The presence of peers may, for example, result in socially desirable responses. Fourth, the postmigration stress questionnaire items are limited. Although the content was adapted to the specific sample (see Section 2), the items do not represent the entire scope of postmigration problems that refugees in different contexts may experience. Therefore, we should be cautious in drawing conclusions about the impact of other, non-assessed, stressors on mental health. Additionally, the total load of post-migration stressors was included in the analysis, which does not display information on the impact of the separate stressors. Sixth, the items on the postmigration stress questionnaire were administered on a VAS-scale, which has not been validated in previous work. The original five-point ordinal scale ranges from "no problem" to "a very serious problem". Lastly, we had no data about characteristics of people who were unable or unwilling to participate. Therefore, this study could not control for any selection bias. Additionally, to limit the burden for participants, a limited number of questions was administered on demographic features. Consequently, the impact of the precise duration of the refugees' stay in the Netherlands on the examined mechanisms remains uncertain.

The study also has several strengths. First of all, this study gains insight into

mechanisms underlying mental health for refugees. Despite its relevance, this is a relatively under-researched topic (Giacco, 2020; Li et al., 2016). Secondly, the study was performed in a naturalistic setting which contributes to the external validity of the findings. Third, attention was paid to the cultural validity of the questionnaires by using translators or bilingual individuals, and using a back-and-forth method, with discrepancies being reconciled. Lastly, all refugees had a temporal residency permit. Despite the fact that the number of items on the postmigratory stressors questionnaire was limited, the study population was demarcated on this relevant characteristic which impacts their living conditions and possibilities (Bakker et al., 2014).

Considering these strengths and limitations, several remarks must be made. First, we should be cautious with generalising our conclusions to other groups of displaced populations (e.g., refugees with a permanent residency permit or asylum seekers). Moreover, all participants were connected to an NGO, and therefore generalising the current findings to refugees who are less embedded in their host country should be done with caution. Secondly, the amount of administered postmigratory stressors and characteristics was limited. We therefore recommend future research to include a larger sample and expand the items in the data collection, to objectify the relevance of independent stressors and demographic characteristics. To increase the cultural validity, a multimethod (e.g., qualitative and quantitative) design is advised for future studies. To investigate the longitudinal relevance of our findings, a cohort study would be a suitable next step.

CONCLUSIONS

The findings from this study endorse the relevance of post-migratory stressors for mental health among refugees with relatively low levels of mental health problems. The findings are in line with prior work (Chung et al., 2020; Hou et al., 2020), and illustrate the applicability of prior research findings to the situation of refugees in the Netherlands. In addition, this study was, to the best of our knowledge, the first to examine a potentially moderating effect of self-efficacy for the relationship between post-migration stressors and mental health in refugees. Its findings shed light on mechanisms underlying the resilience of a vulnerable population. Counterintuitively and in contrast with several other study findings (Morina et al., 2018; Sulaiman-Hill & Thompson, 2013), no impact of self-efficacy on mental health was found, and neither did it moderate the relationship between daily stressors and mental health. Our findings dissuade preventive interventions to focus on increasing control over circumstances that may be beyond the influence of an individual, circumstances which may often prevail for refugees, seriously constraining personal control and agency. Considering that the current study focusses on a non-clinical population,

findings are relevant to policies directed at tertiary prevention for resettled refugees.

Author contributions

Conceptualisation, HvH, PB, WS; Methodology, HvH, PB; Validation, PB, WS; Formal Analysis, HvH; Resources, HvH; Data Curation, HvH; Writing – Original Draft Preparation, HvH; Writing – Review & Editing, PB, AN, WS; Visualisation, HvH; Supervision, PB. WS; Project Administration, HvH.

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Conflicts of interest

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7ROSES, a transdiagnostic intervention for promoting self-efficacy in traumatised refugees: A first quantitative evaluation

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8

ABSTRACT

Objective

Due to traumatic experiences and highly prevalent post-migration stressors, refugees are vulnerable for developing psychopathology. To date, research has mainly evaluated trauma-focussed therapies, targeting post-traumatic stress symptoms. Treatments targeting post-migration stressors are relatively understudied. The present cohort study evaluated the potential effectiveness of 7ROSES, a transdiagnostic intervention that aims to increase self-efficacy among treatment-seeking refugees in dealing with post-migration stressors. Because it can be applied by non-specialist health care workers, it can be disseminated on a large scale, thereby increasing options for psychosocial support for refugees.

Method

Forty-nine refugees (65% male, average age: 36.02 years, SD = 8.52) with psychopathology were included. Before and after participation in 7ROSES, self-efficacy was measured using the General Self-Efficacy Scale (GSES), and general psychopathology using the Brief Symptom Inventory (BSI).

Results

Completers analysis yielded a significant increase in GSES scores (Z = −2.16, p = .03) and significant decrease in BSI scores (Z = −2.05, p = .04) with medium-small effects (both r = −.28). Intent-to-treat analysis, using predictive mean matching imputation, yielded significant results for the GSES (p = .012) but not for the BSI (p = .14) with small effects (GSES r = .14, BSI r = .12). Reliable change indices established negative change in 3%, no change in 70%, and positive change in 27% based on the GSES; percentages were 11.5%, 65.5%, and 23%, respectively, based on the BSI. Conclusion: Findings provide preliminary evidence that 7ROSES could improve self-efficacy and general mental health in refugees with psychopathology.

Keywords

Refugees, post-migratory stressors, self-efficacy, transdiagnostic intervention, general mental health.

BACKGROUND

Global political instability and armed conflicts worldwide created a massive influx of refugees into Europe. In 2016, 1.2 million individuals applied for asylum in the European Union (UNHCR, 2017). Although displaced persons entering a host country are usually referred to as either 'refugees', 'asylum seekers', 'victims of human trafficking' or 'undocumented refugees', in this paper we will refer to the entire group as 'refugees'. Refugees are considered a high-risk population for the development of psychopathology (Steel et al., 2009). It is estimated that one in three refugees is affected by depression, Post-Traumatic Stress Disorder (PTSD), or an anxiety disorder (Turrini et al., 2017), which appear to be chronic in the long-term (Bogic et al., 2015). A refugee background doubles the risk of developing non-affective psychoses compared to other migrants (Hollander et al., 2016). Other mental disorders are less researched among refugees, but there are indications that they have an elevated risk of medically unexplained physical symptoms (Rohlof et al., 2014), substance abuse (Ezard, 2012), and attempted suicides (Kalt et al., 2013) compared to non-displaced populations. There is an urgent need for timely, targeted, and effective psychological treatments for these health problems.

Importantly, there are indications that traumatised refugees benefit less from treatment compared to other traumatised groups (Ter Heide & Smid, 2015); their residual post-treatment symptom severity scores are often above clinical thresholds (Palic & Elklit, 2011). Substantial research on adequate psychological treatments for resettled refugees is limited to trauma-focussed therapies (TFT) (Giacco & Priebe, 2018), and indicating that TFTs are substantially more effective in the general population (d = 1.08–1.40; Cusack et al., 2016) than in refugees (g = 0.25–1.01; Lambert & Alhassoon, 2015). These findings highlight a need for credible treatment alternatives, besides TFTs, to help improve refugee wellbeing.

In current guideline-informed interventions (e.g., American Psychological Association [APA], 2017), little attention is paid to post-migration sources of stress which refugees experience (Miller & Rasmussen, 2010; Strang & Ager, 2010; Turrini et al., 2017), despite their impact on refugee health and well-being (Chu et al., 2013; Li et al., 2016; Porter & Haslam, 2005; Priebe et al., 2016). Examples of such stressors are poverty, unsafe living conditions, loss of social network (Lambert & Alhassoon, 2015), discrimination, and insecurity about legal status (Laban et al., 2005). Post-migration stressors predict late-onset PTSD (Bryant et al., 2013), negatively impact treatment outcome in refugees (Buhmann, 2014; Whitsett & Sherman, 2017) and predict depression and anxiety (Schick et al., 2018). Addressing post-migration stressors in psychological treatments for resettled refugees has been recommended (Kronick, 2017; Slobodin & De Jong, 2015). However, it remains to be investigated whether such an approach improves the wellbeing of individuals (Hynie, 2018; Tribe et al., 2017).

Accordingly, 7ROSES, a novel method was developed to empower treatment-seeking

refugees to cope with (trauma-related) psychopathology and post-migration stressors. The current study aims to describe 7ROSES, evaluate its potential to improve self-efficacy and mental health, and provide a treatment case description to understand the first evaluation results in practical terms.

The intervention: Seven Recovery-Oriented Survivor Empowerment Strategies (7ROSES)

Eight European rehabilitation centres for torture and trauma survivors collaboratively developed the transdiagnostic 'Method for the Empowerment of Trauma Survivors' (METS). METS is deliverable in multiple contexts as a flexible toolkit. It can be applied by non-specialist mental health professionals (e.g., social workers, non-specialised psychologists, non-specialised doctors), which reduces provision costs and fosters dissemination.

METS was developed for refugees exposed to traumatic events, facing post-migration challenges on a social level, and suffering from psychological distress. METS takes a perspective on empowerment as a process of psycho-social change through increased self-efficacy, the belief in one's own capacity to adequately act towards ongoing and upcoming stressors. Instead of providing practical support, METS focusses on creating coping resources and developing skills to tolerate or to change negative circumstances, depending on the situation of the participant. Coping with the consequences and impact of traumatic experiences is also an element of the approach, but unlike TFT, METS does not focus on the content of traumatic experiences. The primary aim is to promote self-efficacy, which has been shown to be a sustainable way to reduce psychopathology and increase rehabilitation factors among refugees (Sulaiman-Hill & Thompson, 2013). In addition, a high level of self-efficacy is associated with greater tolerance to trauma-related distress among tortured refugees (Morina et al., 2018) and better treatment response for trauma-related psychopathology (Livanou et al., 2002). The second aim is to reduce the psychological burden of post-migration stressors.

The 'CHIME framework of recovery' (Leamy et al., 2011) provided the empirical framework for METS. CHIME is an acronym referring to Connectedness, Hope, Identity, Meaning and Empowerment. The framework shifts the focus in mental health care from illness-based to strengths-based and emphasises self-control and rehabilitation (Slade, 2013). To adjust CHIME to the specific challenges of displaced trauma survivors, expert input was collected during a meeting with experts from all collaborating rehabilitation centres. The applicability of CHIME for the target group was evaluated and discussed until consensus was reached. It resulted in recommendations to extend the framework with two themes: Recognition (R) and Safety (S). Findings from two separate focus groups of displaced refugee trauma survivors concurred with the expert input regarding the need for the themes Recognition and Safety, creating the CHIME+RS framework.

In line with the CHIME+RS themes, the experts collected and developed exercises

suitable to be included in the method. For each of the CHIME +RS themes, two sessions were defined, each comprising several exercises. Consequently, it will take a minimum of 9 sessions (including introduction and closing session) to address all themes at least once. Except for the introduction and closing session, the order of sessions is flexible, and determined by the present needs of the participants. (See Appendix A for an overview of the sessions). All exercises focus on increasing self-efficacy, connected with the topic of the session. The exercises can be divided into three categories: practical tools to approach daily problems (e.g., goal planning, during the 'Hope' theme), exercises to increase emotional holding (e.g., identifying hopeful messages and ensuring their availability in challenging conditions, during the 'Connectedness' theme), and, lastly, exercises to increase awareness of personal (e.g., making a social network circle, during the 'Connectedness' theme) or cultural (e.g., identifying and performing a group-ritual, during the 'Recognition' theme) resources. The first two categories increase self-efficacy by the introduction of new coping techniques. The last category promotes self-efficacy by encouraging the (re-)vitalisation of coping resources that decreased due to forced migration. Also, the order of the sessions is controlled by participants, which can contribute to experienced control and therewith increase self-efficacy (Ajzen, 2002). At the beginning of each session a Topic Selection is performed, in which participants identify which CHIME+RS themes are relevant in their lives since the last session. Subsequently, one of the CHIME+RS themes is chosen by the participants

Each session has the following fixed elements: discussing homework progress (at the beginning of a session), a physical exercise (e.g., breathing exercises, mirroring each other's movements), topic selection and corresponding exercises, planning homework (at the end of a session). See Appendix A for an overview of the session. To give the method a positive connotation, METS was named Seven Recovery Oriented Survivor Empowerment Strategies (7ROSES) in the Netherlands.

METHODS

Design

Considering the novelty of 7ROSES, its feasibility was tested using an observational cohort design. A feasibility study is recommended to determine the potential effectiveness of novel approaches and enhance the likelihood of success for future stringent effectiveness studies using RCT designs, thereby saving time and costs (Orsmond & Cohn, 2015). Self-efficacy and psychopathology severity were selected as outcome measures.

Setting

The study was conducted at an outpatient treatment facility located in the Amsterdam region of the Netherlands. It specialises in the treatment of complex trauma-related

psychopathology among displaced victims of interpersonal violence (refugees, asylum seekers, and victims of human trafficking) with present post-migration stressors (e.g., poor social network, lack of daytime activities, insecurity concerning one's residence permit, living in an unsafe environment). Due to its specialist nature the treatment centre receives national referrals for patients with complex psychopathology and high social distress.

Participants

Fifty-three adult patients (n = 53) were approached to participate in 7ROSES, based on their treatment indication. Four refused and 49 agreed to participate. They were referred from primary health care settings with suspected trauma-related psychopathology. Inclusion criteria were: 1) current psychopathology based on the DSM-5 (APA, 2013), and 2) social problems due to post-migration living conditions (e.g., lack of work, lack of social network, problems regarding residence permit, insecure housing situation). Exclusion criteria were: 1) acute psychosis, and 2) unwillingness to participate in the 7ROSES trial. Prior psychological treatment and parallel psychopharmacological treatment were not considered as exclusion criteria. All inclusion and exclusion criteria were checked during a multidisciplinary intake. Because our study was the first to evaluate 7ROSES there was no previous information available for conducting a reliable sample size calculation. Therefore inclusion for the 7ROSES pilot was performed without a pre-set up number of participants.

Procedure

Inclusion took place from March to December 2017, during the first execution of 7ROSES. DSM-5 diagnoses and social problems were established during a multi-disciplinary intake by two trained clinicians. 7ROSES was indicated before, or after other psychological treatments, like trauma focussed therapy. All patients were individually informed about the intended trial by a clinician trained in the 7ROSES method. Participation in the study was voluntary. All patients signed an informed consent before participating.

Self-report questionnaires were administered at a maximum of three weeks before the first treatment session (T1) and at the end of the closing session (T2). Participants who were absent during the closing session were invited for the administration of the second measurement within two weeks after the closing session. The patient's own clinician, or a supervised master-level psychology student, administered the questionnaires. Participants missing more than half (four sessions) of the treatment were considered 'dropouts'.

The questionnaires were administered as part of the routine treatment evaluation, which is standard to all patients in treatment at the facility in question. For secondary scientific purposes, all data was archived anonymously. Because all questionnaires were primarily administered for diagnostic purposes, and secondary for data analysis, the

institutional review board of Leiden University stated that there was no need for review of the ethical merits.

Measures

Two questionnaires were selected from the battery of questionnaires that are routinely administered to monitor treatment outcomes. As 7ROSES aims to increase self-efficacy by encouraging personal and cultural resources and increase practical skills and emotional holding, the General Self-Efficacy Scale (GSES) (Schwarzer & Jerusalem, 1995) was used to compare the levels of self-efficacy before and after 7ROSES participation. The GSES measures optimistic self-beliefs about one's ability to cope with a variety of life demands. Respondents are asked to rate 10 statements (4-point scale, ranging from 'not at all true' to 'exactly true') on how they currently judge themselves. (e.g., 'I can solve most problems if I invest the necessary effort.'). The questionnaire is available in thirty-two languages. Its internal consistency and multicultural validity are good (Luszczynska et al., 2005; Nilsson et al., 2015). Cronbach's alpha for the present study was good (α = .869).

The second questionnaire was a measure of psychopathology. This questionnaire was selected because all participants suffer from the undermining effect of psychopathology, and self-efficacy, which 7ROSES aims to increase, tends to positively impact mental health. The Brief Symptom Inventory (BSI) (Derogatis & Melisaratos, 1983) was used to evaluate changes in general mental health problems. The BSI is a multi-dimensional symptom inventory instructing participants to rate the frequency of fifty-three psychiatric and somatic problems experienced 'during the past week including today' on 5-point scales, ranging from 'not at all' to 'extremely'. An example item is: 'trouble remembering things'. The instrument has good psychometric properties in both general (De Beurs, 2011) and refugee populations (Raghavan et al., 2017). Cronbach's alpha for the present study was excellent (α = .921).

Treatment

7ROSES comprised nine weekly group sessions of 2.5 hours: one introduction session, seven treatment sessions addressing all CHIME+RS themes, and one closing session. To facilitate the group process, a maximum of three different languages were allowed per group. Registered interpreters were available for participants who were not skilled in a language spoken by the clinicians (Dutch, English, Dari, or French). Eight groups were run with 5 to 8 participants per group.

Professionals

All clinicians involved were experienced in working with refugees suffering from trauma-related mental health problems. Their professional backgrounds were: social worker (n = 2) and master level psychologist (n = 5). Monthly supervision was provided by two psychologists involved in the development of 7ROSES. During these supervision

sessions the professionals shared how 7ROSES was conducted, by discussing which sessions and exercises were performed. Also, they presented problems they met during the execution of 7ROSES. This concerned both problems regarding the exercises and participants' progress during 7ROSES. Between each monthly supervision session the supervisors were also available for ad hoc questions and problems in line with the weekly treatment sessions that occurred in a higher sequence than the supervision sessions.

Statistical analysis

SPSS Statistics version 20 was used to perform the statistical analyses (IBM, Armonk, N.Y., U.S.A.). The treatment outcomes were calculated using completer and intent-to-treat analyses to improve the reliability of the findings (Vink et al., 2014). The assumptions on skewness and kurtosis were violated in the completer data. Therefore, the non-parametric Wilcoxon Signed Rank Test was used to analyse GSES and BSI treatment changes.

For the intent-to-treat analysis, we imputed 6% (T1) and 35% (T2) of the BSI data and 12% (T1) and 31% (T2) of the GSES data using predictive mean matching imputation (PMMI) with 100 iterations for each imputation. Thirty-five imputation data sets were used, to make the number of imputations equal to or greater than the percentage of missing data (White, Royston, & Wood, 2011). Missing data were considered missing at random (MAR). The computed data met the assumptions on skewness and kurtosis. Therefore, a paired t-test calculated differences between T1 and T2 on both outcomes in the intent-to-treat analysis. The significance threshold was set at $p < .05$ and rank correlation effect sizes (r) were calculated (Rosenthal, 1991) for completer and intent-to-treat analysis.

Reliable change indices (RCIs) assess whether GSES and BSI individual changes for study completers reflect clinically relevant changes. RCIs were computed based on the standard error of difference (SE_D) and standard the error of the instrument (SE_E), in accordance with the procedure reported by Jacobson and Truax (1991). This was calculated as $SE_E = SE_1 \sqrt{1 - \alpha}$; $SE_D = \sqrt{2(SE_E)^2}$ and $RCI = \pm 1.96 * SE_D$. The SD and α from T1 were used for the calculations (GSES: *SD* = *.59*, α = .869, BSI: *SD* =*.64*, α = .921). RCI values above 1.96 or below -1.96 confirm with 95% certainty that the change is due to treatment improvement or deterioration instead of a measurement error.

RESULTS

Participants

Characteristics of the participants are listed in Table 1. Participants originated from Iran (7), Armenia (5), Afghanistan, Syria, Iraq (all 4, respectively), Sierra Leone (3), Congo, Uganda, Eritrea, Nigeria (all 2, respectively), Mali, Palestine, Guinee, Russia, Surinam,

Burundi, Morocco, Ivory Coast, Nepal, Ethiopia, Pakistan, Togo, Argentina, and Gambia (all 1, respectively). Consequently, participants spoke 11 different languages. Thirty-two (65%) participants needed an interpreter. Seventeen (35%) participants were diagnosed with one, twenty-six (53%) with two, and six (12%) with three mental health disorders, respectively. There was no significant difference between participants with or without an interpreter on pre, post or change scores for both outcome measures tapping self-efficacy and general psychopathology.

Table 1
Baseline Participant Characteristics (N = 49)

Variable	n	%	M	*SD*
Demographic characteristics				
Male	29	59		
Age in years			35.45	8.49
Duration in the Netherlands in years			6.14	7.74
Drop out	12	24		
Average session adherence			5.88	2.26
Highest finished education				
No schooling	9	18		
Primary school	8	16		
High school	12	25		
University degree	17	36		
No information	3	6		
Clinical characteristics				
Diagnosis	46	94		
PTSD	23	53		
Depression	1	6		
Substance abuse	6	2		
Personality disorder	5	12		
Traumatic Grief		10		
Anxiety disorder				
GSES scores				
T1	43	88	2.09	.62
T2	34	69	2.37	.66
BSI scores T1				
T1	46	94	2.40	.59
T2	32	65	2.24	.77

Note. BSI = Brief Symptom Inventory; GSES = General Self-Efficacy Scale; PTSD = Post Traumatic Stress Disorder; T1 = pre-treatment measurement; T2 = post-treatment measurement.

Drop-out versus completers

There was no significant difference between dropouts (n = 12) and completers (n = 37) on gender, age, duration of stay in the Netherlands, or schooling. The average session adherence among the drop-out group was 2.67 (*SD* = 1.85); in the completers group this

was 6.96 (*SD* = 1.12). Drop-outs originated from Armenia, Afghanistan (all 2, respectively), Palestine, Syria, Burundi, Nepal, Maroc, Iraq, Iran and Gambia (all 1, respectively). Countries of origin were diverse, suggesting that dropout was not associated with specific countries or cultural reasons.

Treatment changes

Table 2 presents the outcomes for completer and intent-to-treat samples. In the completer sample several questionnaires were missing (GSES: *n* = 8, BSI: *n* =12), and findings were computed with the available data only. Completers analyses (Wilcoxon Signed Rank Test) yielded a significant increase in GSES scores (Z = -2.16, *p* = .03) and significant decrease in BSI scores (Z = -2.05, *p* = .04) with medium to small effects (both *r* = -.28). Intent-to-treat analyses (Paired Sample T-test), using predictive mean matching imputation, yielded significant results for the GSES (*p* = .012) but not for the BSI (*p* = .14) with small effects (*r* = .14 and *r* = .12, for GSES and BSI, respectively).

Table 2
Findings Group Treatment Changes

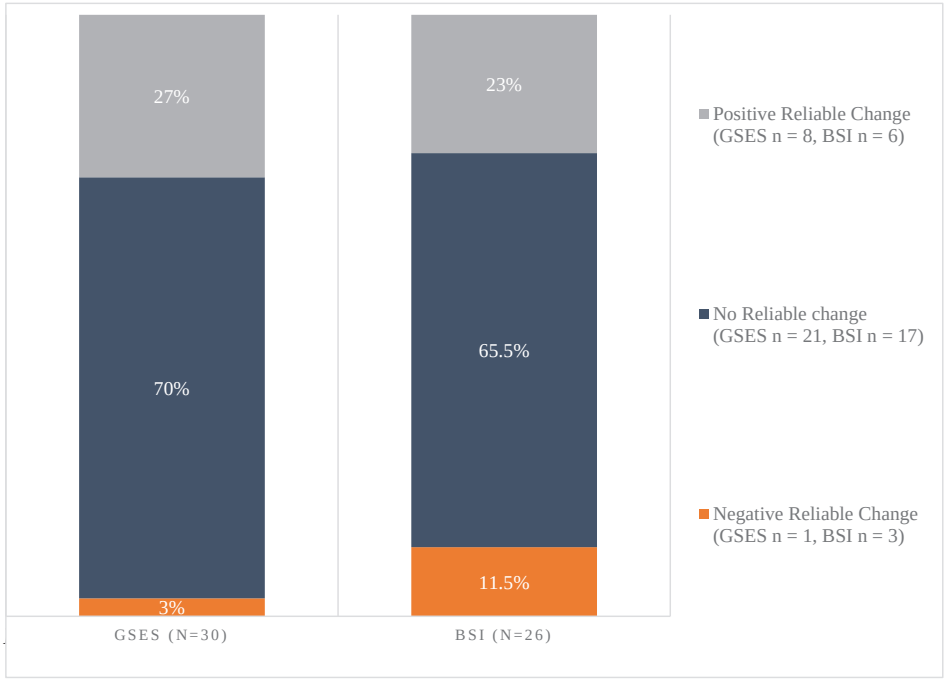
Sample	Drop out		Completers				Intent-to-treat			
	M (*SD*)	n	M (*SD*)	n	Z	*p*	M (*SD*)	N	*t* (df)	*p*
GSES										
T1	2.13 (*.78*)		2.08 (*.59*)				2.11 (*.63*)			
T2			2.36 (*.66*)				2.44 (.68)			
N		12		30	- 2.16	.03*		49	-2.54 (320)	.012*
BSI										
T1	2.57 (*.27*)		2.35 (*.64*)				2.40 (*.59*)			
T2			2.30 (*.67*)				2.17 (*.78*)			
N		12		26	-2.05	.04*		49	1.47 (146)	.144

Note. BSI = Brief Symptom Inventory; GSES = General Self-Efficacy Scale.
*$p < .05$

Individual treatment changes

RCIs were calculated for the GSES and BSI for each treatment completer included at T1 and T2. Reliable change indices established negative change in 3%, no change in 70%, and positive change in 27% based on the GSES; percentages were 11.5%, 65.5%, and 23%, respectively, based on the BSI. See Figure 1 for an overview of the findings.

Figure 1
Findings Reliable Change Indices



Note. BSI = Brief Symptom Inventory; GSES = General Self-Efficacy Scale.

Case description

To guarantee anonymisation, this case description was inspired on several participants. Consequently, this description can not be traced back to one individual participant.

Carlos is a 22-year old patient originating from Iran, where he studied at a university. He had a satisfactory social life and was passionate about learning new things. When he became involved in an illegal political activist group he got into trouble with the Iranian authorities. He experienced several traumatic events (physical and psychological torture) in Iran and developed mental health problems. After a period of imprisonment he fled to the Netherlands.

Carlos resided in the Netherlands for 17 months and was involved in an asylum procedure. He was afraid that his asylum request would be rejected and that he would have to return to Iran. He was not able to fully express himself in Dutch or English which complicated communication people he was depending on, like his lawyer.

The asylum seeker centre where he lived was located at great distance from his social network. It took over an hour by public transport to reach people he felt familiar with. Also, his budget was restricted and the costs for public transportation were relatively high. Carlos was not allowed to work during the asylum procedure. He used to go to Dutch lessons, but when his course ended he did not know how to find a follow-up

course. Carlos' lack of control over his environment and future in the Netherlands made him feel hopeless. His mental health problems undermined his capacity to organise and prioritise affairs that could improve his situation. During intake he was diagnosed with PTSD and comorbid depression. He was indicated for 7ROSES because he wanted to change his social situation, but felt unable to do so by himself.

Each session started with a topic selection. The group discussed which topic was most relevant to them, according to how their week had proceeded. In some sessions the discussion resulted in an integration of different subjects (e.g., stress about procedure, loneliness and mood problems) into one topic (e.g., empowerment) which fitted the different problems. In other sessions the desired topics varied. During the first session the group decided to apply 'the majority of votes principle', but respected the minority by offering them to pick their topic the following session.

The first session after the opening meeting was on Connectedness. Carlos performed an exercise on small talk, by doing a role play, and a successive group discussion on challenges in social interaction. He revealed that, while trusting others was difficult for him, he desired to expand his confidence in others to decrease the loneliness he often felt. After this discussion he became more open to group members. He made more eye contact and started to make jokes. His homework assignment was to invite somebody in the asylum seeker centre to join him to the supermarket, which went well. As 7ROSES progressed, it generally became easier for him to make new social contacts, which reduced the feelings of isolation he reported during intake.

During the following session on Identity, Carlos filled out the 'strengths matrix' exercise to identify several personal qualities. During the exercise, he reconnected to his ability and eagerness to learn new things. This week Carlos connected to the group even more, during the break he brought tea for all group members. After the session, he started to write down all unfamiliar Dutch words he heard, and immediately ask for a translation. This enabled him to improve his language skills and increase his sense of control.

During the session on Empowerment, Carlos was encouraged to replace a negative coping strategy (withdrawing; staying alone in his room) with a positive one (seeking social support; talking to a friend). His personal resources (his ability to seek for help and his present social network) were highlighted and additionally embedded in his daily life. It was noteworthy that Carlos was strongly engaged in the topic selection of this session, and was able to convince group members to choose his topic.

During the session on Meaning, Carlos identified which values were important in his life. His homework assignment was to apply these values in daily life. He realised that although spirituality was important to him, he hardly responded to this value. This insight connected him to a group member who felt strengthened through her religion. Together they discussed how spirituality helps to accept difficult parts of life. Carlos planned to pick up church visits.

Carlos missed the following session on Recognition due to problems with travel expenses.

During the session on Safety, Carlos was involved in the 'keeping yourself safe' exercise. The aim was to objectify current threats and possible safety measures. The threats he listed were connected to the ASC and his asylum procedure. He realised that it would increase his safety to find somebody to translate important conversations for him. This resulted in an action plan on finding a volunteer who could help him translate and practice difficult conversations.

During the session on Hope, Carlos was challenged to define one desire and think about all the specific actions required to realise this. His desire was to sleep more. His roommate often left early in the morning, when Carlos was still in bed, leaving the door unlocked. This felt unsafe for Carlos and consequently he always woke up early in the morning. Because he didn't sleep well in general, it was hard for him to fall asleep afterwards. With help from the group he defined all actions necessary (find a translator, the right words, the right timing) to have a productive discussion with his roommate. After the session Carlos left together with one group member to travel together, since they found out they lived in the same area

At the end of 7ROSES Carlos was satisfied with the treatment. He felt that he regained self-esteem by talking about his past strengths, and increased his trust in others due to the positive group process. The practitioners noticed that Carlos developed openess to group members, and his ability to express his needs to them. These experiences helped him to actively address issues in his life that he wanted to change and were in his domain of control.

DISCUSSION

To the best of our knowledge, this is the first study that evaluated a self-efficacy-oriented treatment method for resettled refugees. The study objectives were to establish changes in self-efficacy and general mental health in refugees with psychopathology after participation in 7ROSES. The findings indicated a modest increase in self-efficacy and minimal improvement of general mental health (i.e., symptom reduction). Changes in self-efficacy and psychopathology symptoms were modest, and the intent-to-treat sample yielded no significant changes in general mental health.

7ROSES provision went along with reliable clinical improvement in approximately one out of every four participants. This is a salient finding since the 7ROSES treatment comprised only nine sessions, which is low compared to the average of seventeen sessions displayed in a recent meta-analysis of fourteen treatment studies with resettled refugees (Nosè et al., 2017). Testing the results of a longer version of 7ROSES could be a valuable next step, since generally greater treatment effects can be expected with the

provision of more treatment sessions (e.g., Karatzias et al., 2007).

This study demonstrated the feasibility of 7ROSES for refugees diagnosed with psychopathology, like the case description illustrates, with the aim to improve self-efficacy and to reduce mental distress for completers. However, it also indicated that the method did not go along with significant clinical improvement for most participants. Moreover, 3 participants reported a deterioration of symptoms and 1 of self-efficacy. Although these findings are in contradiction with the treatment aims, they are in accordance with reported deterioration rates from a previous treatment study with a comparable sample and setting (Ter Heide et al., 2016).

Based on the current findings, it would be premature however to suggest provision of 7ROSES as a stand-alone treatment in clinical settings. Instead, it seems suitable for provision within multi-model interventions. 7ROSES might best be delivered prior to guideline-recommended therapies, since self-efficacy may contribute to the effectiveness of successive treatments (Livanou et al., 2002). Patients who recover sufficiently after 7ROSES may opt to end treatment, while others proceed with specialised (more intensive) approaches like TFT. This stepwise approach may prevent patient overtreatment and at the same time increase the available treatment capacity of organisations, since 7ROSES does not require specialised professionals.

The current study has several limitations. First, given the lack of a control group, it is uncertain to what extent changes in self-efficacy and general mental health were caused by 7ROSES. The impact of group process characteristics, for example, which usually tends to support mental health within the target group (Bunn et al., 2015), could not be controlled for. Also, a possible role of natural recovery processes (e.g., Gerger et al., 2014) cannot be excluded, although the prevalence of psychopathology in refugees in naturalistic settings remains high in the long term (Bogic et al., 2015), and even tends to increase in the face of postmigratory stressors (Laban et al., 2004). Some may argue that the current observational study lacks a strong design that would include a control group, such as a RCT. An observational design was chosen because 7ROSES is a novel method. It is recommended to perform an observational feasibility study for any new method prior to any RCT (Orsmond & Cohn, 2015). Second, long-term effects of 7ROSES still need to be examined. Third, post-treatment questionnaires were administered at the end of the closing session, which may have affected post-treatment outcomes for the BSI. This questionnaire instructed participants to evaluate their general mental health during 'the past week including today', thereby including a 7ROSES session in the period of evaluation. Despite its limitations, the current time point was chosen to avoid extra travelling for the participants who often have a limited budget. Fourth, 94% of all participants were diagnosed with PTSD, though PTSD was not an outcome measure in the current study. Although the BSI identifies psychological distress in trauma exposed individuals (Al-Krenawi et al., 2007) and reflects a post-traumatic symptom constellation (Raghavan et al., 2017), the effect of 7ROSES on PTSD symptoms, therefore, remains

uncertain. Fifth, prior psychological treatments and parallel psychopharmaca treatments were not exclusion criteria. Therefore, reported improvements in self-efficacy could be (partially) due to these interventions.

Lastly, data on post-migration stressors were missing. Although 7ROSES is focussed on internal factors (self-efficacy), it aims to increase the resilience towards the negative impact of external factors (postmigration stressors). Hence, findings on external factors would display if 7ROSES impacts either the participants' ability to deal with post-migration stressors, their actual social situation, or both. For future treatment studies examining 7ROSES it is recommended to follow a Randomised Controlled Trial (RCT) design. The best control condition fur such an RCT is questionable, since 7ROSES aims to increase self-efficacy, while previously established treatments (e.g., Turrini et al., 2017) for the target population primarily focus on reduction in PTSD and depression. Hence, before comparing 7ROSES to established interventions it is necessary to determine if it impacts PTSD and depression symptom levels. Additionally, we encourage future researchers to include post migrations stressor scales, and to perform a follow-up measurement.

Notwithstanding these limitations, this study also has various strengths. First, findings were analysed on an individual level, next to group changes, to demonstrate the clinical potential of 7ROSES. Second, the selection bias was minimal since all present patients with psychopathology and present daily stressors were indicated for 7ROSES, within the timeframe of the study. Only four participants refused study participation. Consequently, the treatment groups were heterogeneous with substantial individual differences on social, cultural, and clinical level. The procedures and study-sample represent clinical practice, which usually is a challenge in researching the population in question (Enticott et al., 2017). Therefore, findings can be generalised to comparable settings. Meanwhile, a heterogeneous sample complicates the drawing of conclusions on subgroups level.

CONCLUSION

This study provides preliminary evidence for a self-efficacy oriented treatment for resettled refugees. Since group changes were small, we should remain modest about 7ROSES' potential. However, around a quarter of all participants showed improved self-efficacy and general mental health after participation. Therefore, while also considering the complexity in dealing with traumatised refugees and the non-specialist nature of the method, this finding is relevant to clinicians and researchers working with refugee populations. While the relevance of self-efficacy for the target population has been established before (Morina et al., 2018; Sulaiman-Hill & Thompson, 2013), this study is the first to indicate that psychological treatment may promote self-efficacy in refugees. Therewith it responds to the critique (Lambert & Alhassoon, 2015; Miller & Rasmussen,

2010) on the domination of PTSD as a focus in treatment methods for refugees. Moreover, this study is a first step in establishing the clinical utility of 7ROSES for a highly vulnerable population.

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Authors' contributions
HvH is the primary investigator of the study and first author of this manuscript. HvH initiated and designed the study, executed the data-analysis and interpreted the outcomes. WS and PB are the primary supervisors and helped to draft and revise this manuscript. JH revised the manuscript and supervised the data-analysis and interpretation of data. All authors read and approved the final manuscript.

Clinical Impact Statement
Refugees are vulnerable for developing mental health problems, like Post-Traumatic Stress Disorder (PTSD), because of experienced traumas and post-migration problems (like housing problems or loss of social network). This study evaluated the effect of a transdiagnostic treatment, 7ROSES, that empowers refugees with psychopathology in coping with post-migration problems. The outcomes of this study indicate potential effects of 7ROSES. Around a quarter of all refugees who participated reported an increased self-efficacy and mental health improvement after participation. As this is a low-intensity transdiagnostic treatment method which can be provided by non-specialists, it may be accessible for many individuals.

Data availability statement
Data can be requested from the first author for secondary analysis.

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APPENDIX A

Brief Overview of the 7ROSES Sessions

Topic	Goals	Example Exercise
Introduction	General group agreements Explain programme and identification of expectations participants	Name game
Connectedness	Network	Social network circle
Connectedness	Aspects of Trust	Leaning back in pairs
Hope	Positive Attitude	Reframing technique
Hope	Dreams and life goals	Present me versus future me
Identity	Self-Awareness, in the light of your life story and present situation	Body-Mind connection
Identity	Strengths, insight in own positive characteristic	Define what I want/I can/I am/I know/ I have
Meaning	Lifeline, understanding of the relation between strengths and stress	Feed forward
Meaning	Life values	Value compass
Empowerment	Coping	Practice different coping techniques
Empowerment	Acceptance	'Book in front of you' exercise
Recognition	Awareness and action plan on current threats	Identification of most important current stressors
Recognition	Culture and Rituals	Sharing supportive cultural stories, wisdoms and rituals
Safety	Dealing with daily challenges	Role play
Safety	Stability	Safety plan on dangers in host society
Closing	ReflectionFarewell	Goodbye ritual

Summary and discussion

9

The aim of this dissertation is to develop scientific knowledge that provides leads for improving mental health among forced migrants. Common risk factors for psychopathology in this population are traumatic experiences and postmigratory daily stressors (e.g., Kashyap et al., 2021). Traumatic experiences are adversities like exposure to death, threatened death, actual or serious injury, and actual or threatened sexual violence (APA, 2013). Daily stressors are less well-defined, but described by Miller et al. (2008, p. 613) as "stressful social conditions". Examples in the context of forced migration are socio-economic problems, issues related to the asylum procedure, and interpersonal factors such as discrimination and family separation (e.g., Li et al., 2016). Finding ways to overcome psychopathology related to traumatic experiences and daily stressors, plays a central role in the different chapters of this dissertation.

In this discussion, the main findings of the previous chapters will be summarised. The first part includes studies on the interplay of Post-Traumatic Stress Disorder (PTSD) and experienced daily stress during Trauma-Focussed Therapy (TFT). The chapters elaborating this theme describe if perceived daily stress influences the recovery from PTSD and the feasibility of treatment. The second part includes studies addressing individual factors that may contribute to the mental health of forced migrants. The findings will be discussed in relation to the aims that were set out in the introduction. Additionally, the strengths and limitations of the different chapters will be described, followed by an author reflection. Thereafter, implications for clinical practice and future research will be provided.

SUMMARY

Chapters 2, 3, and **4** include the study protocol (**chapter 2**) and present the findings (**chapter 3** and **4**) of an uncontrolled treatment study. The study presented in **chapter 3** examined if perceived daily stress, emotion dysregulation and mood impacted the Post-Traumatic Stress Symptoms (PTS) during Narrative Exposure Therapy (NET). For this study, 86 forced migrants with a Post-Traumatic Stress Disorder (PTSD) were included. They were all in treatment at ARQ Centrum'45. Participants filled out a questionnaire, measuring perceived daily stress (the Perceived Stress Scale-4), emotion regulation (a subscale of the Difficulties in Emotion Regulation Scale), mood (one single item) and PTS (the Primary Care Post-Traumatic Stress Disorder checklist), each NET session. Forty people completed NET within the study protocol. Because NET has no predefined number of sessions, the analyses were performed on a standardised part of the data, namely the first sessions, the session taking place at 25% in time, the session taking place at 50% in time, the session taking place at 75% in time and the last session. This resulted in five datapoints that were taken into consideration for the data analysis. Bayesian statistics were applied, to adequately deal with the relatively small number

of completers. Latent growth modeling revealed that perceived daily stress, emotion regulation, and PTS improved during therapy, and that the course of perceived daily stress and PTS were related. Random-intercept cross-lagged analyses found that levels in perceived daily stress were not predictive for later levels of PTS during NET. Outcomes on mood and the relation between emotion regulation and PTS were not taken into consideration due to limited model fit. The overall findings show that improvements during NET transcend PTS, and also apply to perceived daily stress and emotion regulation. And despite the concurrence of PTSD and perceived daily stress, the levels of perceived daily stress were not determining subsequent PTS levels over the course of treatment. Concluding this study was not able to establish an impeding role of perceived daily stress on the course of PTS during of NET, which encourages clinicians to provide NET, also to patients challenged by perceived daily stress.

In the study presented in **chapter 4**, several predictors for treatment completion and adherence were investigated. More precisely, baseline levels of emotion dysregulation (measured with the Difficulties in Emotion Regulation Scale-18), perceived daily stress (measured with the Perceived Stress Scale-10) and PTSD levels (measured with the PTSD Checklist for DSM-5) were related to treatment drop-out and adherence. If participants completed NET after they dropped-out from the study protocol (described in **chapter 2**) they were still listed as 'completers' to match clinical reality, in which patients sometimes continue treatment after a temporary break. This resulted in a number of 64 completers. Binary regression analysis revealed that emotion regulation and perceived daily stress did not significantly predict drop-out. Hierarchical regression analyses indicated that emotion regulation did not significantly indicate adherence. Higher perceived daily stress significantly indicated adherence, but lost its predictive value when PTSD was added to the model. This might be due to the high overlap between perceived daily stress and PTSD scores. Since no impact of the tested variables was found, findings encourage clinicians to indicate NET also to patients who report high perceived daily stress and emotion regulation problems at the onset of therapy.

In **chapter 5** the relation between posttraumatic cognitions with Post-Traumatic Stress symptoms (PTS) and probable Post-Traumatic Stress Disorder (PTSD) was examined among Palestinian refugees. In other populations, the relevance of post-traumatic cognitions for the development and perseverance of PTSD was established. Palestinians live under enduring social pressure due to the Israeli occupation. Therefore, it is uncertain if previous findings among non-refugee samples can be generalised to the living context of Palestinians. This study used a cross-sectional design and compared the level of post-traumatic cognitions between Palestinians and other samples using t-tests. Regression analyses were performed to examine whether post-traumatic cognitions explained variance in PTS and probable PTSD. In total, 85 Palestinians were included, who filled out the Post-Traumatic Cognitions Inventory and the Harvard Trauma Questionnaire. Palestinians had significantly higher scores in post-traumatic

cognitions compared to reference samples. Additionally, post-traumatic cognitions were significant predictors for PTS and probable PTSD. At subscale level it stands out that negative cognitions about the world were not related to PTS or PTSD. Cognitions about self-blame were unrelated to PTSD and higher cognitions on self-blame were related to less PTS.

Findings reveal that overall post-traumatic cognitions are relevant for PTS and probable PTSD among Palestinian refugees, but this does not apply for negative cognitions about the world. Moreover, cognitions on self-blame may even protect people against developing PTS. Findings underline the importance of contextual sensitivity when working with forced migrants, as the situation in which forced migrants live may impact the meaning of trauma-related cognitions.

Chapter 6 explores the relation between coping styles and different treatment interventions, i.e., Eye Movement and Desensitisation and Reprocessing (EMDR) and stabilisation, among a refugee sample. First, the impact of baseline coping styles on PTSD reduction up to 3 months after treatment, was investigated. Additionally, treatment responders were compared to non-responders on baseline coping levels. The aim was to reveal which coping styles are relevant for enhancing PTSD treatment interventions. Second, it was examined if coping styles changed after treatment, and if these potential changes differed between the two groups (i.e., participants receiving stabilisation vs participants receiving EMDR). It is suggested that stimulating beneficial coping is a common factor in PTSD treatments, but evidence for this assumption is lacking among refugees.

Data from a randomised controlled trial (RCT) were used, in which 72 refugees were randomised between EMDR and stabilisation (Ter Heide et al., 2016). Among participants the COPE-easy, measuring coping styles, and the Clinician-Administered PTSD Scale for DSM-IV, measuring PTSD, were administered before and after treatment and at 3 months follow-up. Due to a high percentage of missing data, both the original and imputed version of the dataset were used for data-analysis. Regression analyses revealed that none of the baseline coping styles significantly indicated PTSD changes, from baseline to follow-up. Additional t-tests found no significant differences in baseline coping styles between responders and non-responders, in terms of PTSD reductions at follow-up. A mixed design ANOVA could not detect changes in coping styles after EMDR or stabilisation. Findings in the imputed dataset concorded with findings from the original dataset. The current study found no evidence for the importance of baseline coping styles for PTSD reduction after PTSD therapies. Additionally, based on the current study, it is unlikely that refugees' coping styles change after short-term therapeutic interventions for PTSD.

In **chapter 7**, the relation between postmigration daily stressors and mental health problems was investigated, and the potentially moderating role of self-efficacy was examined. Therewith this study aimed to identify a protective factor (self-efficacy) against the negative impact of postmigration daily stressors on mental health problems.

In this cross-sectional study, an adapted version of Post Migration Living Difficulties checklist (measuring postmigration daily stressors), the Self-Reporting Questionnaire-20 (measuring mental health problems) and the General Self-Efficacy Scale (measuring self-efficacy) were filled out by a community sample of 114 refugees in the Netherlands. They were recruited trough non-governmental organisations. Bivariate correlations and multiple regression analyses revealed that postmigration daily stressors were related to mental health problems, but no moderating effect of self-efficacy was detected. Hence, the findings could not support the hypothesis that self-efficacy can protect refugees against the impact of postmigration daily stressors on mental health. Nonetheless, self-efficacy may support the mental health of forced migrants in other ways.

Chapter 8 describes the first uncontrolled evaluation of 7ROSES, a recovery-oriented intervention for forced migrants. The aim of 7ROSES is to increase self-efficacy of the participants, which may enable them to better deal with the challenges in daily life. This is done by providing several exercises in which they can learn and activate helpful competencies. The method was developed by eight organisations, all specialised in working with victims of torture or other traumatic experiences. All organisations provided exercises that they valued as useful. Therewith 7ROSES became a toolbox filled with relevant elements. The different exercises are ordered in sessions with a fixed theme (connectedness, hope, identity, meaning, empowerment, recognition, and safety). The order of sessions is decided on by participants, which increases the flexibility of the method.

In the study, the experiences of 49 forced migrants who participated in the pilot version of 7ROSES were evaluated. They all had a psychiatric diagnosis and received mental health care at ARQ Centrum'45 and Equator Foundation (specialised mental health care facilities in the Netherlands). Before and after participation in 7ROSES, participants filled out two questionnaires measuring respectively general mental health problems (the Brief Symptom Inventory) and self-efficacy (the General Self-Efficacy Scale). Due to the high level of missing data (maximum 35%) the analyses were performed over the available, as well as imputed, data. By t-tests and Wilcoxon-Rank tests the group differences between pre- and post- treatment were investigated. Reliable Change Indices (RCI) were calculated for participants, to examine the percentage of people who benefited from 7ROSES. Additionally, a fictional case description was given.

Positive changes in self-efficacy were significant in the available and imputed data, with small effect sizes. In the majority of the participants (70%) self-efficacy did not change, a small number experienced a positive change (27%) and a minority (3%) had a deterioration in self-efficacy. A significant decrease of mental health problems was found in the available data, with small effects. However, no significant change was found in the imputed dataset for this outcome. Looking in percentages, the majority did not change (65.5%), part of the population showed an improvement of mental health (23%) and another part deteriorated on this outcome (11.5%). The findings are a first indication

that 7ROSES can positively impact self-efficacy, and perhaps also mental health, among forced migrants with psychiatric problems.

DISCUSSION

Aim one: Investigating if perceived daily is related to PTSD recovery

Despite the effectivity of trauma-focussed therapies (TFTs) for forced migrants, many of them improve insufficiently during therapy (Nosè et al., 2017). Additionally, the feasibility of TFTs is challenged by drop-out, although empirical research on this topic is scarce (Semmlinger & Ehring, 2022). Therefore, it is a matter of urgency to seek leads for improving current treatments. In order to do so, it is necessary to detect which factors determine the effectivity and feasibility of TFTs. Daily stressors are expected to be one of these factors.

Daily stressors may contribute to the confined feasibility of treatments for forced migrants (Semmlinger & Ehring, 2022). Previous studies investigated the impact of daily stressors during PTSD treatment on PTSD reduction in different settings. One study examined the impact of clinician-rated daily stressors on the course of treatment among forced migrants. Findings revealed that the presence of daily stressors during therapy was not related to PTSD symptom change after treatment (Bruhn et al., 2018). Another study, investigating the impact of self-reported life events (overlapping with daily stressors) among forced migrants during TFT, found an increase in PTSD symptoms at the timepoint after a new negative life event was reported, but no impact on eventual treatment effect was revealed (Kaltenbach et al., 2020). These studies provide valuable insights into the role of actually present stressors with respect to the course of PTSD symptoms during therapy, but the role of the perceived daily stressors load remains unknown. PTSD symptoms and perceived daily stress are related (Garey et al., 2016), but it was scientifically unsubstantiated if such perceived daily stress matters for PTSD treatment effects among forced migrants. More specifically, it would be useful to investigate if the course of perceived daily stress impacts PTSD treatment response. This knowledge could help in deciding whether perceived daily stressors should be targeted for improving TFT.

In chapter 3 the courses of PTSD symptoms and perceived daily stress during Narrative Exposure Therapy (NET) were examined among forced migrants with PTSD. NET is an evidence-based TFT, which is suitable for forced migrants (Neuner et al., 2018). The relation between PTSD symptoms and daily stressors is impacted by emotion regulation (e.g., Nickerson et al., 2015), and the course of this outcome was also measured. Perceived daily stress, PTSD symptoms, and emotion regulation difficulties declined over the course of therapy. The findings suggest that the effect of NET transcends the reduction of PTSD symptoms. Additionally, changes in perceived daily stress and

PTSD symptoms appeared to be related over the course of NET, which indicates that their changes coincided. Their strong relation is not surprising since perceived daily stress and PTSD symptoms might mutually affect each other. For example, having PTSD related sleeping problems may increase the awareness of the inappropriateness of a sleeping facility, and vice versa. However, the course of perceived daily stress was not associated with subsequent levels of PTSD symptoms during NET. This suggests that despite the concurrence of perceived daily stress and PTSD symptoms, the latter is not driven by earlier perceived daily stress. Previous work (Schick et al., 2018) presented concordant results: improvements over time in daily stressors were not related to PTSD improvements among forced migrants who engaged in various treatments, although improved daily stressors indicated improved symptoms of anxiety and depression in the same sample. In chapter 4 several possible predictors for drop-out and adherence were tested. In line with previous research (Semmlinger et al., 2021), no predictors for drop-out were found. The only significant relation was tentatively established for higher baseline perceived daily stress as a predictor for higher treatment adherence, indicating that people who experience their lives as more stressful at the outset of treatment are better able to commit to NET as planned. However this finding should be interpreted very cautiously since this relation disappeared when baseline PTSD scores were added to the model. This indicates that baseline scores in PTSD and perceived daily stress were strongly related.

Aim two: Understanding the role of individual factors in mental health and its treatment

There are different individual factors that could help forced migrants in dealing with daily stressors. Herewith the negative impact of daily stressors on mental health might be constrained. Knowledge on such factors, and their relation to mental health, needs expansion (Kashyap et al., 2021). For clinical practice it is useful to determine which specific factors could be promoted. Accordingly, in this dissertation three promising factors, namely trauma-related cognitions, coping styles, and self-efficacy, were analysed in relation to relevant mental health problems and treatment.

Post-traumatic cognitions

Negative cognitions connected with traumatic experiences are related to PTSD and its reduction during treatment (Brown et al., 2019). Trauma-related cognitions (TRC) can be distinguished into at least three categories: cognitions about oneself (e.g., *"I'm inadequate"*), self-blame (e.g., "*somebody else would have not gotten in this situation"*), and the world (e.g., *"the world is a dangerous place"*) (Foa et al., 1999). To examine the relevance of these cognitions in the context of forced migrants, chapter 5 analysed cross-sectional relations between TRC and PTSD levels in Palestinian refugees. Participants lived in a conflict area which caused unsafe living conditions (OCHA, 2017)

that might evoke cognitions like 'the world is dangerous'. The total amount of TRC was related to PTSD symptom levels and probable PTSD diagnoses. Looking at subscale level, it became apparent that TRCs about the world were not significantly related to PTSD symptoms or probable diagnoses. This indicates that having perceptions like '*the world is a dangerous place*' (Foa et al., 1999) in a setting that is actually dangerous, may not increase the risk of PTSD (symptoms). Perhaps such cognitions are an adequate interpretation of the actual circumstances and therefore not exclusive for people developing PTSD symptoms. Additionally, increased self-blame was related to lower PTSD symptomatology. This finding hints at a protective role for self-blame (Koss et al., 2002). It could be related to a sense of control arising when one attributes traumatic experiences to one's own behaviour, thereby protecting a person from the overwhelming experience of complete powerlessness. Therefore, practitioners should examine the function of specific cognitions, like self-blame, in relation to patients' living circumstances, before addressing these in interventions.

Coping styles

Beneficial coping styles help forced migrants in dealing with daily stressors, such as the asylum procedure (Hoare et al., 2020), and promoting functional coping is an important factor in several TFTs (Schnyder et al., 2015). Accordingly, the study addressed in chapter 6 related coping styles to the effects of short-term PTSD treatments (i.e., EMDR and stabilisation) in a sample of forced migrants diagnosed with PTSD. Coping styles were distinguished as follows: problem-focussed (acting to improve a situation), emotion-focussed (focus on how the situation is experienced), support-seeking (seeking social support to deal with the situation), and avoidant (avoiding a situation and related triggers) (e.g., Huijts et al., 2012). None of the baseline coping styles predicted subsequent PTSD treatment response at three months follow-up. Additionally, no difference in baseline coping styles could be established between those who showed considerable PTSD symptom reduction at follow-up and those who did not. Hence, we found no indications that coping styles that people employ at the start of treatment matter for PTSD reduction over the course of therapy. This suggests that boosting pre-treatment coping styles might not enhance the PTSD reductions during short term PTSD-treatments. Meanwhile, our findings contradict expectations following cross-sectional studies that relate PTSD to several coping styles within refugee samples (Elklit et al., 2012; Finklestein, et al., 2012; Huijts et al., 2012). The findings also contradict previously established relations between pre-treatment avoidant coping and PTSD treatment response among other samples (Bourdon et al., 2019). Perhaps the included participants experienced a supportive holding environment while being in treatment, which overruled the potential impact of coping styles on treatment effect.

The same study (chapter 6) suggested that none of the treatments (i.e., EMDR and stabilisation) were successful in changing any of the coping styles, contrary to our

hypothesis. This tentative finding can be explained in different ways. Coping styles may be "consistent patterns" (Beutler et al., 2003, p. 1152), and therefore the impact of short-term treatments might be limited. Another explanation is that challenging living conditions that many forced migrants face, may erode coping styles and therewith overrule potential improvements in coping styles induced through short-term treatment.

Self-efficacy

Previous research among forced migrants confirmed the relevance of self-efficacy for mental health (Schlechter et al., 2023; Sulaiman-Hill & Thompson, 2013; Tip et al., 2020). Self-efficacy refers to the extent to which individuals perceive themselves as able to deal with upcoming challenges and stress (Bandura, 1994). In this dissertation self-efficacy was examined in two different populations.

The study addressed in chapter 7 examined the moderating role of self-efficacy in the relation between perceived daily stressors and general mental health problems among a community sample of forced migrants. The latter two appeared to be related, but this relation was not significantly moderated by self-efficacy. This contradicted our hypotheses and indicates that self-efficacy may not buffer the impact of daily stressors on mental health. Other work outlined that daily stress moderated the effect of self-efficacy on mental health-related quality of life among forced migrants (Nickerson et al., 2022b). Hence, daily stressors may hamper the benefits of self-efficacy. In addition and counterintuitively, no relation between self-efficacy and mental health was found in our study. This finding contrasts previous work (e.g., Sulaiman-Hill & Thompson, 2013). However, in a refugee sample, self-efficacy was related to subsequent depression, but no effect on later PTSD symptoms or perceived daily stressors was found (Nickerson et al., 2022a). The various findings on self-efficacy suggest that the benefits of this factor may only appear under favorable circumstances, and differ between samples. Since self-efficacy relates to the degree to which people believe they can positively impact their circumstances (Bandura, 1982), the benefits of this factor may be reserved to potentially manageable problems. When certain problems are evidently uncontrollable, self-efficacy may lose its role.

Chapter 8 describes the first evaluation of a novel treatment that aims to increase self-efficacy. Study results revealed that self-efficacy improved in a clinical group of forced migrants who participated in 7ROSES, of whom 27% experienced a clinically reliable improvement. These findings are a first indication that 7ROSES can boost the self-efficacy of forced migrants, although effect sizes were small. In the same study, improvements in mental health problems were partially confirmed, with small effect sizes. The findings match previous work that outlines the potency of increasing self-efficacy among forced migrants (Morina et al, 2018a).

Understanding the meaning of null findings from a methodological perspective

In several studies included in this dissertation, hypotheses were only partially, or not, confirmed (chapters 3, 4, 5, 6, and 7). The underreporting of null findings in psychology stresses the importance of disclosing results that are not in line with expectations (Laws, 2013). Yet, the interpretation of such findings requires substantial reflection. One stance towards these results is that the null findings disclose meaningful information. Null findings could indicate that the theory underlying a specific study requires reconsideration (Landis et al., 2014). This line of thought warrants caution because "the absence of evidence is not evidence of absence" (e.g., Alderson, 2004, p. 476; Altman & Bland, 1995, p. 485). Theoretically, null findings can indicate that the data are not suitable for investigating the study hypothesis due to methodological flaws (Landis et al., 2014), like questionnaires that insufficiently represent the latent variables, selection bias, or too small samples. Hence, null findings should be understood in the context of previous findings in other studies (Alderson, 2004) and statistical information overarching the significance threshold, like effect sizes.

The questionnaires applied in the different studies were not validated for the specific research samples, which can increase the risk of inaccurate measurement. Meanwhile, the reliability of the null findings in this dissertation is partly supported by the internal validity of the specific studies. In chapter 6 the 'null-findings' were substantiated by small effect sizes, and the psychometric characteristics of the questionnaires were established in previous work. The latter also applies to chapter 3, 4, 5, and 7. Additionally, the sample size of chapter 7 was deemed large enough to detect meaningful relations, and the number of participants in chapter 5 aligned with the rule-of thumb for the applied analysis (Field, 2018 p. 520). In chapter 3 and 4 (partially), the sample size was considerably smaller than planned (see chapter 2) and therefore findings should be interpreted with caution. However, only well-fitting models were interpreted in chapter 3, and previous work with a comparable sample size detected significant relations (Teachman et al., 2008).

Given the study characteristics, it is meaningful to consider what the null findings suggest. However the 'limitations' sections of the respective studies as well as the limitations of the combined studies described below, warrant substantial reflection on the studies' methodologies to prevent erroneous interpretation of the null findings.

Understanding the meaning of null findings from a theoretical perspective

The lack of statistically significant findings for coping styles and a moderating role of self-efficacy may be attributed to the impact of daily stressors that can suppress the benefits of personal strengths (Nickerson et al., 2022b). Moreover, contextual resources could be necessary for people to employ resiliency responses to detrimental circumstances (Hobfoll et al., 2011; Sleijpen et al., 2019). For example, a support-seeking coping style can be useful in a setting where helpful people are present, but not in an environment

where most people are too overwhelmed by their own issues to support others. Forced migrants experience less social support than local groups (Schlechter et al., 2021). Hence, in the case of forced migrants, their resources may be too limited for them to benefit from their abilities like coping styles or self-efficacy.

Regarding the relation between PTSD and perceived daily stress in treatment settings, the difference between their co-occurrence and temporal relation should be considered. Although daily stressors are predictive for PTSD levels over time (e.g., Nickerson et al., 2022a), and perceived daily stress is related to simultaneous PTS (chapter 3 and 4), the recovery from PTSD does not seem to be affected by daily stressors as seen in chapter 3 and earlier findings (Bruhn et al., 2018). Accordingly, long-term treatment changes in daily stressors predicted improvements in depression and anxiety but not in PTSD (Schick et al., 2018). The findings presented in chapter 3 highlight the question if daily stressors matter for PTSD improvements in clinical populations receiving TFT. This group is characterised by high symptom levels, and the relation between psychopathology and traumatic events has been established by mental health professionals. Perhaps PTSD recovery is more firmly linked to the processing of traumas than to daily stressors in this particular group.

Limitations

Several limitations stand out in the different studies presented in this dissertation and have also been addressed in the discussion sections of the specific studies. In this general discussion, however, it is relevant to highlight overarching issues that appeared in the different studies.

One central limitation concerns the measurement of daily stressors. In different studies in this thesis, the impact of daily stressors on mental health problems is assumed without this having been directly measured. For these studies, the presence of daily stressors is likely, since the occurrence of daily stressors among forced migrants is well documented (e.g., Hynie, 2018; Li et al., 2016). Nonetheless, it would have been more accurate to measure the presence of daily stressors among the different samples in this dissertation.

Some studies did include daily stressor measures, which in turn came with other limitations. It remains challenging to measure daily stressors since this construct can refer to a whole set of diverse experiences that people can encounter, such as discrimination, financial issues, or problems related to the asylum procedure (e.g., Li et al., 2016). Some forced migrants will experience more of these stressors than others. This can be due to the situational factors that may create these experiences, like being undocumented which brings along social deprivation (Lahuis et al., 2019). In chapters 3, 4 and 7, daily stressors were measured, but the studies varied in their approach. In chapters 3 and 4, daily stressors were assessed by establishing participants' perception on their daily stress, using the Perceived Stress Scale. This questionnaire fails to connect

the stress perception to actual stressors. However, there is no risk of unintentionally excluding relevant stressors, since the 'perception of stress in one's entire daily life' is captured. In chapter 7, a tailored version of the Postmigration Living Difficulties Checklist was used. This questionnaire established the subjective burden of predefined daily stressors, with the risk of missing the impact of certain stressors that were not included among the items. Nevertheless, it provides insight into which stressors were exactly relevant for participants. Ideally, both ways of establishing daily stressors would have been included in the analysis of chapters 3, 4, and 7.

An additional issue related to questionnaires is cultural validity. Many questionnaires rely on Western manners, like scoring on a Likert-scale, that may discord non-Western reasoning. The cultural appropriateness of such instruments may be limited (Djelantik et al., 2022). Moreover, the administered questionnaires in this dissertation's studies may not fully capture the measured constructs as experienced by the different study populations. This increased the risk of measurement errors (Dowrick et al., 2015). It would have been better to validate questionnaires for the specific target groups, before using them.

Another relevant limitation lies within the study designs presented in chapter 3, 4, 5, 7 and 8, which reduce the strengths of the findings. This attunes to the commonly apparent difficulties in conducting research among forced migrants, such as a lack randomisation and high drop-out rates (Djelantik et al., 2022). In chapters 5 and 7 cross-sectional data were used. This gave the opportunity to reveal relations, but their causality remained unknown. Chapters 3, 4, and 8 rely on cohort designs. Although this increased the feasibility of the studies as it facilitated the inclusion of participants, the meaning of cohort study findings is limited relative to findings of RCTs. For example, in chapter 3 it remains unknown if the observed changes in perceived daily stress and PTSD can be attributed to NET or to the natural course of these outcomes. Chapter 6 bypassed this limitation since it relied on an RCT design, which ruled out important issues related to cross-sectional or cohort designs.

A final important limitation which applies to all studies in this dissertation, is the lack of multi-method designs. The different chapters in this dissertation rely on, mostly self-reported, quantitative data. Without casting doubt on the relevance of such research, quantitative methods are not able to fully grasp the perspectives of participants from their stance (Malterud, 2001). In addition to the quantitative research in this dissertation, it would have been useful to conduct qualitative interviews among forced migrants. Perceived gains of TFT, experienced constraints regarding these gains, and personal factors that are considered to be crucial for dealing with daily stressors, would have been meaningful topics to address in such interviews. Findings could clarify which specific outcomes are most relevant for participants, for example reduced distrust could be experienced as the main result of TFT. Since distrust is only represented in a few PTSD-questionnaire items (e.g., Blevins et al., 2015), its reduction is easily overlooked in a

quantitative analysis and better detectable through qualitative interviews.

Strengths

A number of strengths are also worthy of mentioning. First, a variety of health-related factors was examined: trauma-related cognitions, self-efficacy, and coping styles, which allows us to transcend the separate outcomes and reflect on the general role of psychological abilities. The overall relevance of these individual resources for mental health was only partially evinced. Integrating the findings on these different outcomes gives an overarching insight.

Second, an investigation of several therapy processes was performed. By integrating the findings of chapters 3, 6, and 8, diverse knowledge was gained that transcends one specific treatment method. Moreover, chapter 3 provided a detailed insight in how outcomes potentially coincided and interacted over the course of treatment. Additionally, chapters 4 and 6 examined several baseline predictors for PTSD treatment feasibility and response, although only limited outcomes were considered and non-assessed factors such as depression (Haagen et al., 2017) might play a pivotal role for PTSD change among forced migrants.

Third, questionnaires were adapted to the population where needed, to increase the validity. For example, in chapter 6 the Cope-Easy was improved for analysis, based on critical evaluation of the avoidant-coping subscale. In chapter 3 the questionnaires were brief, in order to minimalise the burden on the participants. In this way participants who found it difficult to fill out the questionnaires, for example due to limited education or a high symptom level, were still able to participate in the study. In chapter 5 the items of the Postmigration Living Difficulties Scale were attuned to the study population.

Lastly, the various findings are based on a collection of five different samples. Not only clinical (chapters: 3, 4, 6, and 8) samples were used, but also community samples (chapters: 5 and 7) were included. Considering the challenges in conducting research among forced migrants (Djelantik et al., 2022), this in itself is an accomplishment.

Author reflection: **Personal lessons and recommendations**

This section will be written from a personal point of view, because it reflects my experiences during the performance of the work in this dissertation. My insights are characterised by my position as a Dutch female researcher without a migration history. Furthermore, this reflection should be considered as an ongoing process.

Position of the researcher versus the clinician

Since I am a clinician in addition to my work as a researcher, I perceived the studied topic from two perspectives. Many research questions arose in the consulting room, where patients expressed their sorrows and strengths. This created a strong motivation to discover what supports and undermines the mental health of the population I worked

with. It also caused inner stress when my hypotheses were not confirmed, such as in chapter 6. I felt the need to deliver leads for improving the wellbeing of the population I worked with, but my data did not always provide these leads. The positive side was that it helped me to reconsider my clinical intuition and at the same time consider the relevance of the findings in relation to clinical practice. I could see findings from both perspectives: clinical and scientific (Yanos & Ziedonis, 2006). Being a scientist practitioner also resulted in a natural valorisation of research findings, for example I was able to introduce scientific knowledge during clinical team meetings.

An issue related to my initial desire to help the target group can be noted in the order of my work. The first study I published (chapter 8) is the evaluation of 7ROSES, a method that aims to promote the mental wellbeing of refugees. 7ROSES was designed to increase self-efficacy and herewith counterbalance the impact of daily stressors. This study presents a practical approach, relying on assumptions about daily stressors and self-efficacy. The studies that I performed later on have a more fundamental character. For example, chapter 6 examined if coping styles are actually as supportive as expected. As I matured as a researcher, I investigated more profound questions that underly processes of recovery. The unusual order of my work, from 'solution-oriented' to 'verifying assumptions', may have resulted from the responsibility towards the target population that initially rushed me. This position was later complemented with a fascination for the specific working mechanisms in the mental health of forced migrants.

Position of the researcher towards participants

Since I have never personally undergone the process of forced migration, I perceived the stories from participants as an 'outsider' (Bourke, 2014). This has probably impacted the research designs. For example, choosing standardised questionnaires over more adaptive methods of data collection may have resulted from the fact that I was more familiar with the scientific community than the community of forced migrants. In hindsight, I would rather have invested more time in understanding the research methods from the perspective of the participants, for example by including their opinion on questionnaires prior to including these materials in research designs. Additionally, while conducting research I sometimes experienced a gap between the scientific ethical standards and the way participants perceived scientific research (MacKenzie et al., 2007). To give an example, the participant information folder used for the study in chapter 3 and 4 contained a thorough explanation on the study procedures, aligned with demands set by the designated medical ethical committee. However, this information could be overwhelming relative to participants' prior knowledge on scientific procedures. In some cases it required extra explanation and repetition to obtain profound informed consent. By trial and error, I grew to understand how to include the participants perspective when investigating forced migrants.

Another relevant issue is the power dynamics between the researcher (myself) and

the participants (Merriam et al., 2001). For example I decided how treatment results were defined in chapter 3, which gave me control over how the participants' experiences would be captured and scientifically presented. Consequently, I was often aware of my own privileges during the research. On top of that, on a social level an unpleasant awareness of the imbalance between me and the participants often persevered. Many of the participants had insecure legal positions such as being an asylum seeker, that excluded them from social opportunities which are obvious to me. This resulted in high ethical norms (Djelantik et al., 2022). I felt a strong responsibility to correctly process the information participants shared with me, and I often felt unsatisfied about the way I translated their personal stories into data. In the conducted studies, the awareness of the power imbalance kept me humble. This motivated me to improve my research skills and persevere. Looking back, I could have transformed this inconvenience better by using participatory research methods (Cornwall & Jewkes, 1995), where the voice of participants is included in the research.

Recommendations for future research

Several recommendations for future research are appropriate, which can be divided into three main topics: extension and validation of questionnaires, conducting multi-method research, and replication and extension of the findings in other samples or with other designs.

Extension and validation of questionnaires

Using questionnaires for data collection among forced migrants involves some challenges. First, there is a paucity of questionnaires validated for use among forced migrants for outcomes transcending common mental health disorders (Morina et al., 2018b). Hence, more questionnaires should be validated for this group. This is especially relevant for self-efficacy, which was widely used and related to the mental health of forced migrants across many studies (Nickerson et al., 2022b; Schlechter et al., 2023; Tip et al., 2022). Second, there is a risk of cultural biases which needs consideration. Most questionnaires originate from Western concepts, like in the case of the PTSD Checklist measuring PTSD based on the DSM-5 definition of this disorder (Blevins et al., 2015) which deviates from specific cultural idioms of post-traumatic distress (Rasmussen et al., 2011). It is advised to develop and validate questionnaires that represent the experiences of forced migrants from their perspectives. In particular for factors that are less demarcated, like coping styles, there is a need for more representative questionnaires. Lastly, future research on daily stressors would benefit from standardised measures that capture the psychological impact of specific daily stressors. The currently applied questionnaires are at risk of being incomplete. Some questionnaires measure the impact of predefined daily stressors, and consequently miss the load of not-included stressors, as in the Post Migration Living Difficulties Checklist (e.g., Nickerson et al., 2022b). Other questionnaires

measure the general level of perceived daily stress, like in the case of the Perceived Stress Scale (Alemi et al., 2015), without linking it to present stressors. Extending the list of predefined daily stressors with open items, in which individual participants can report additional relevant daily stressors, may take away the disadvantages of both approaches. Future studies are recommended to evaluate such an extension of currently applied questionnaires.

Conducting multi-method research

Another recommendation is to use multiple methods when investigating psychological phenomena among forced migrants. Research on psychological mechanisms fostering forced migrants' mental health is relatively scarce (Nickerson, 2018). Hence, explorative knowledge is appropriate, and can be gained through qualitative methods (e.g., Hussain & Bhushan, 2013). This is particularly relevant considering the several null findings that require validation and interpretation. For example, qualitative research on the interplay between daily stressors and PTSD change during TFT could clarify why daily stressors may, or may not, hamper PTSD decline. Qualitative interviews might reveal situational factors, like a supportive social environment, that are determining for the impact of daily stressors on PTSD recovery. Moreover, qualitative interviews have no predefined outcomes and may therefore help to understand concepts from the participants' points of view. The latter is valuable for clarifying the role of extensive factors like coping styles, that can differ between cultures (Akhtar & Kroener-Herwig, 2019) and may be insufficiently captured by questionnaires.

Replication and extension of the findings in other samples or with other designs

Forced migrants together constitute a very diverse population. In the current studies most samples include participants from various countries, with diverse education levels and differences in legal status. Hence, for future studies it is recommended to examine if the findings also apply to other forced migrant samples, e.g., samples that represent specific or subgroups of forced migrants. Similarly, self-efficacy and post-traumatic cognitions were examined among community samples (chapters 5 and 7) and the presented results should be validated among clinical samples in order to generalise the findings to treatment settings. In particular the benefits of self-efficacy may be different for people with mental health problems, since they are generally more challenged than healthy participants. Additionally, the non-significant findings on self-efficacy diverge from previous work (Sulaiman-Hill & Thompson, 2013), although the supportive role of self-efficacy does not stand firm for PTSD (Nickerson et al., 2022a), and may be suppressed by daily stressors (Nickerson et al., 2022b). Higher levels of self-efficacy might even evoke mental problems (Schiaffino et al., 1991) when people have no actual control over their challenges. Accordingly, the relation between self-efficacy and various mental health outcomes (i.e., PTSD and general mental health problems)

requires further examination. Comparing this relation between community and clinical samples, while controlling for the impact of daily stressors, could elucidate for whom and under which circumstances self-efficacy is beneficial.

The findings from the treatment studies (chapters 3, 4, 6, and 8) should be tested in relation to other treatments, for example treatments specifically targeting coping styles, which in turn might reduce perceived daily stress, with larger samples. Moreover, the findings on coping styles cannot be compared to previous findings, due to a lack of corresponding studies. This warrants more longitudinal research on coping styles and its relation to PTSD for forced migrants. The findings on the decrease of perceived daily stress after NET also require further investigation. Future treatment studies are recommended to examine if perceived daily stressors can indeed be reduced through therapies instead of naturalistic change processes. For example, by including daily stressor measures when evaluating RCTs with control groups that match the naturalistic setting. As previously stated in the limitations section, the used cross-sectional and cohort designs limit the conclusions that can be drawn. Using longitudinal data for examining the temporal relation between variables, and RCTs for examining changes through therapy, is an obvious but important recommendation for future research.

Another issue is the need to examine the main research questions in relation to other factors than general mental health and PTSD. The role of personal abilities protecting forced migrants from the detrimental effects of daily stressors should be examined in relation to a broader scope of mental health outcomes. For example, relating baseline coping styles to post-treatment quality of life gives a valuable perspective on the role of this predictor. Accordingly, the potentially undermining role of daily stressors on treatment effects should be examined in relation to other psychopathology than PTSD, for example, by relating the course of perceived daily stressors to the course of depression or anxiety during designated therapies.

Recommendations for clinical practice

Several recommendations for clinical practice can be made based on the findings in this dissertation. First it must be noted that the relevance of daily stressors for mental health problems may vary between treatment and naturalistic processes. Despite the relevance of daily stressors for forced migrants, as revealed in chapter 7, chapter 3 suggests that not all recovery processes rely on preceding perceived daily stress levels. Additionally, higher perceived daily stress at baseline does not seem to reduce the feasibility of treatment. Therefore, even in the presence of daily stressors PTSD treatments should be offered to forced migrants. Although a high trauma exposure and daily stressors casted worries on the appropriateness of such treatments (Nickerson et al., 2011), our recommendations are in line with previous studies outlining the safety (Ter Heide et al., 2016) and the suitability of TFT for forced migrants (Robjant & Fazel, 2010). Moreover, chapter 3 shows that perceived daily stress decreases after TFT, which

is an extra encouragement to provide PTSD treatments for forced migrants.

Second, expectations towards the role of coping styles and self-efficacy for clinical outcomes require modesty. Clinical intuition and practice often count on these personal abilities for improving mental health. Although coping styles are relevant for mental health (e.g., Khawaja et al., 2008), they may not necessarily impact PTSD change after treatment. Additionally, the mental health benefits of self-efficacy may vary between populations and might erode under high levels of daily stress. Individual abilities such as self-efficacy and coping styles can evidently benefit forced migrants' mental health, but we should keep a close eye on the context in and the purpose for which they are addressed. Our findings postulate that daily stressors might sometimes overrule the impact of coping styles and self-efficacy on mental health. This may encourage clinicians to consider and include practical support in dealing with daily stressors in order to increase mental wellbeing.

Last, the findings imply that practitioners providing cognition-based therapies should be aware that cognitions can be context specific. Most treatments are based on research findings from Western samples, which deviate from forced migrants in the symptoms they express (Rohlof et al., 2014) and their explanatory models (Grupp et al., 2021). The function of certain cognitions may differ between forced migrants and local populations. For example, self-blame might give a sense of control and thereby reduce, instead of maintain, PTSD complaints. Similarly, high self-efficacy might frustrate individuals who have limited control over their daily lives. Hence, it is recommended to deliberately consider the role of forced migrant patients' attitudes and cognitions in the context of their daily lives.

CONCLUSION

This dissertation contributes to previous literature by suggesting that the role of perceived daily stressors, post-traumatic cognitions, coping styles, and self-efficacy in mental health for forced migrants may vary in different contexts. Although all these factors impact the wellbeing of forced migrants, their influence may be context-specific. For example, higher self-efficacy and beneficial coping styles may not always constrain mental health problems, while post-traumatic self-blame might suppress PTSD symptoms under stressful living conditions. Meanwhile, perceived daily stress may not necessary block forced migrants' abilities to recover from PTSD symptoms. Evidently, there is a need to optimise available treatments for forced migrants' highly prevailing mental health problems. But factors promoting mental health and increasing PTSD treatment response among forced migrants should always be valued in the context of their psychopathology *and* living conditions.

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Dutch summary (Nederlandse samenvatting)
Acknowledgements (Dankwoord)
About the author

DUTCH SUMMARY - NEDERLANDSE SAMENVATTING

Samenvatting

Het doel van dit proefschrift is om wetenschappelijke kennis te vergaren die handvatten biedt voor het verbeteren van de mentale gezondheid van en behandelinterventies voor onvrijwillige migranten. Het betreft een groep die relatief kwetsbaar is voor het ontwikkelen van psychopathologie. Dagelijkse stressoren en blootstelling aan traumatische ervaringen zijn bekende risicofactoren voor de psychische gesteldheid van deze groep. Het proefschrift is opgedeeld in twee delen. Het eerste deel is gericht op *de rol van ervaren dagelijkse stress in traumatherapie*. Dit onderwerp wordt uitgewerkt door analyses van een behandelstudie. Het tweede deel richt zich op *de rol van individuele bronnen voor mentale gezondheid en behandelinterventies*. Dit thema wordt uiteengezet in twee behandelstudies en twee cross-sectionele studies.

Deel een: De rol van ervaren dagelijkse stress in traumatherapie

Het **2e, 3e en 4e hoofdstuk** behelzen de aankondiging (trial paper) en de bevindingen van een ongecontroleerde behandelstudie. In **hoofdstuk 3** staat een studie centraal die het beloop van Post-Traumatische Stress klachten (PTS), ervaren dagelijkse stress, emotie-regulatie en stemming tijdens Narratieve Exposure Therapie (NET) onderzocht. Het doel van de studie was om factoren te identificeren die van invloed zijn op de effectiviteit van NET. Hiervoor werden 86 participanten, die gedwongen gemigreerd waren, met een Post-Traumatische Stress Stoornis (PTSS) geïncludeerd. Ze waren allen in zorg bij ARQ Centrum'45. Deelnemers vulden iedere NET sessie een vragenlijst in waarbij ervaren dagelijkse stress (middels de Perceived Stress Scale-4), emotie-regulatie (middels een subschaal van de Difficulties in Emotion Regulation Scale), stemming (middels een item voor Mood) en PTS (middels de Primary Care Post-Traumatic Stress Disorder checklist) gemeten werden. Veertig mensen maakten uiteindelijk de behandeling binnen het studieprotocol af. Omdat NET geen vast aantal sessies heeft werden de analyses uitgevoerd op een gestandaardiseerde indeling van de metingen, te weten: de eerste sessie, de sessie die plaatsvond op 25% van de totale behandelduur, de sessie die plaatsvond op 50% van de totale behandelduur, de sessie die plaatsvond op 75% van de totale behandelduur, en de laatste sessie. Hiermee werden er uiteindelijk vijf datapunten gebruikt voor de data-analyse. Er werd Bayesiaanse statistiek toegepast, om een adequate analyse te kunnen uitvoeren op de relatief kleine groep. Via latente groeimodellen bleek dat ervaren dagelijkse stress, emotie-regulatie en PTS tijdens therapie verbeterden, en dat verbeteringen in ervaren dagelijkse stress en PTS samen opgingen. Middels random intercept cross-lagged analyses kon echter geen voorspellend effect van ervaren dagelijkse stress voor opvolgende niveaus van PTS tijdens NET worden aangetoond. Niet alle modellen pasten op de data, waardoor de bevindingen over stemming niet geïnterpreteerd konden worden, evenmin als bevindingen over

de interactie tussen emotie-regulatie en PTS. Concluderend laat de studie zien dat tijdens NET niet alleen een reductie in PTS plaatsvindt, maar dat ook ervaren dagelijkse stress en emotie-regulatie verbeteren. Ondertussen werden in dit onderzoek geen aanwijzingen gevonden voor de sturende werking van eerder ervaren dagelijkse stress op PTS niveaus tijdens NET. Dit moedigt clinici aan om ook PTSS-behandelingen in te zetten bij patiënten die veel stress ervaren in het dagelijks leven.

In **hoofdstuk 4** werd onderzocht of scores in ervaren dagelijkse stress (gemeten met de Perceived Stress Scale-10), emotie-regulatie (gemeten met de DERS-18) en PTS (gemeten met de PTSD checklist voor DSM-5) aan het begin van de behandeling indicatief zijn voor behandeltrouw en behandeluitval. Middels een binaire regressie-analyse werd onderzocht of ervaren dagelijkse stress en emotie-regulatie voorspellend waren voor drop-out. Beide variabelen hadden geen significant voorspellende waarde voor behandeluitval. Er werd middels een lineare regressie-analyse getoetst of ervaren dagelijkse stress, emotie-regulatie en PTS behandeltrouw voorspelden. Hieruit bleek dat hogere ervaren dagelijkse stress een significante voorspeller was voor meer behandeltrouw, maar wanneer PTS werd toegevoegd aan het model verviel dit effect. Dit is mogelijk toewijsbaar aan de sterke samenhang tussen ervaren dagelijkse stress en PTS die van invloed is op het statistische model. Een denkbare verklaring voor die sterke samenhang is dat ervaren dagelijkse stress het bewustzijn van aanwezige PTS klachten vergroot en vice versa. Concluderend vonden we geen aanwijzingen dat hoge baseline scores in ervaren dagelijkse stress en emotie-regulatie problemen indicatief zijn voor behandeluitval of problemen met behandeltrouw.

Deel twee: De rol van individuele bronnen voor mentale gezondheid en behandelinterventies

In **hoofdstuk 5** werd onderzocht in welke mate negatieve Post-Traumatische Cognities (PTC) samengaan met Post-Traumatische Stress klachten (PTS) en Post-Traumatische Stress Stoornis (PTSS) bij Palestijnse vluchtelingen. In andere populaties wordt het belang van PTC voor de ontwikkeling, voortzetting en behandeling van PTSS beschreven. Palestijnen leven onder voortdurende maatschappelijke uitdagingen, vanwege de Israëlische bezetting. Daarom is het onduidelijk of eerdere bevindingen te generaliseren zijn naar de Palestijnse context. Middels een cross-sectioneel design onderzochten wij of het niveau van PTC onder Palestijnen verschilde van andere populaties en of PTC variantie in PTS en vermoedelijke PTSS verklaarde. Er werden 85 Palestijnen geïncludeerd, die twee vragenlijsten invulden: de Post-Traumatic Cognitions Inventory en de Harvard Trauma Questionnaire. Analyses werden middels t-toetsen en verschillende regressie-analyses uitgevoerd. Palestijnse vluchtelingen hadden significant hogere scores in PTC dan andere groepen en algehele PTC was een significante voorspeller voor PTS en PTSS. Opvallend was dat, op subschaal niveau, negatieve cognities over de wereld niet verklarend waren voor PTSS en PTS, en dat negatieve cognities over zelfverwijt niet

waren geassocieerd met PTSS. Bovendien waren cognities over zelfverwijt voorspellend voor minder PTS.

De bevindingen laten zien dat PTC over het algemeen van belang zijn voor PTS(S) bij Palestijnse vluchtelingen, maar dat dit niet opgaat voor cognities over de wereld. Mogelijk is dit het gevolg van de uitdagende levensomstandigheden die maken dat bepaalde cognities niet specifiek voor PTS(S) zijn, maar een adequate en algemene interpretatie van een gevaarlijke levenswereld. Bovendien zijn cognities over zelfverwijt mogelijk zelfs beschermend voor PTS, wellicht omdat ze bijdragen aan een gevoel van controle. De bevindingen onderstrepen het belang van contextuele sensitiviteit in het behandelen van vluchtelingen, waarbij het passend is om de betekenis van cognities te relateren aan de omstandigheden waarin vluchtelingen verkeren.

Het **6de hoofdstuk** richt zich op de relatie tussen coping stijlen en therapie, namelijk Eye Movement and Desentisisation and Reprocessing (EMDR) en stabilisatie, bij vluchtelingen. Allereerst werd onderzocht of coping stijlen die mensen bij aanvang van behandeling rapporteerden van invloed waren op de afname van PTSS klachten drie maanden na behandeling. Aanvullend werd onderzocht of deze coping stijlen verschilden tussen mensen die baat hadden bij therapie in vergelijking tot mensen die geen profijt hadden. Hiermee werd beoogd coping stijlen te identificeren die PTSS-behandeling kunnen optimaliseren. Ten tweede werd onderzocht of coping stijlen na PTSS-behandeling waren veranderd, en of er een verschil was tussen de twee verschillende behandelingen. Deze vraag is relevant omdat eerder gesuggereerd werd dat het bewerken van coping stijlen een van de algemene factoren is in trauma-therapie, maar de evidentie hiervoor nog ontbreekt voor vluchtelingen.

Er werd gebruik gemaakt van data uit een gecontroleerde studie, waarbij 72 vluchtelingen met PTSS gerandomiseerd werden tussen EMDR en stabilisatie therapie. Bij de deelnemers werden vragenlijsten afgenomen, de COPE-easy voor coping stijlen en de Clinician-Administered PTSD Scale for DSM-IV voor PTSS, voor en na behandeling en bij 3 maanden follow-up. Omdat er missende data waren (tot 19%) zijn de analyses over de originele en over geïmputeerde data uitgevoerd. Met een regressie-analyse werd geen effect gevonden van baseline coping stijlen op de PTSS-afname (baseline ten opzichte van follow-up). Aanvullend bleek uit een t-toets dat baseline coping stijlen niet verschilden tussen mensen die profijt hadden gehad van de therapie en mensen die er geen baat bij hadden gehad. Uit een mixed design ANOVA bleek dat coping stijlen niet veranderden na EMDR of stabilisatie therapie. Alle bevindingen stemden overeen tussen de originele en de geïmputeerde data. Deze studie vindt geen aanwijzingen voor het belang van baseline coping stijlen voor PTSS klachtenreductie, na een PTSS-behandeling. De studie laat ook zien dat het verbeteren van coping stijlen middels kortdurende PTSS-behandeling bij vluchtelingen niet waarschijnlijk is.

Het **7e hoofdstuk** richt zich op self-efficacy, post-migratie stressoren en psychische klachten bij vluchtelingen. Specifiek werd er gekeken of post-migratie stress gerelateerd

was aan psychische klachten en of die relatie werd beïnvloed door self-efficacy. Hiermee beoogde de studie om een factor (self-efficacy) te identificeren die een beschermende werking heeft op de negatieve impact van post-migratie stress op psychische klachten. In deze cross-sectionele studie werden vragenlijsten, namelijk een aangepaste versie van de Post-Migration Living Difficulties checklist (voor het meten van post-migratie stress), de Self-Reporting Questionnaire-20 (voor het meten van psychische klachten) en de General Self-Efficacy Scale (voor het meten van self-efficacy), ingevuld door 114 vluchtelingen in Nederland. De deelnemers waren 'algemene vluchtelingen', die geworven werden via niet-regeringsgebonden organisaties. Middels bivariate correlaties en multiple lineaire regressie-analyses kwam naar voren dat post-migratie stress gerelateerd was aan psychische klachten, maar dat self-efficacy geen modererende rol speelde in deze relatie. De resultaten vinden daarmee geen bewijs dat een individueel beschermingsmechanisme zoals self-efficacy vluchtelingen kan behoeden voor de impact van post-migratie problemen op psychische gezondheid. Self-efficacy kan uiteraard wel op een andere manier van belang zijn voor hun mentale welzijn.

In **hoofdstuk 8** wordt de eerste (ongecontroleerde) evaluatie van 7ROSES beschreven. 7ROSES is een herstelgerichte interventie ontwikkeld voor slachtoffers van mensenrechtenschendingen. Het doel is om de self-efficacy van deelnemers te vergroten en daarmee handvatten te geven in het omgaan met uitdagingen in het dagelijks leven. Dit wordt bewerkstelligd door oefeningen aan te dragen waarin ze vaardigheden kunnen leren of activeren. De methode is ontwikkeld door acht organisaties, alle gespecialiseerd in de begeleiding en/of behandeling van slachtoffers van traumatiserende mensenrechtenschendingen. Alle organisaties hebben oefeningen aangedragen waar ze positieve ervaringen mee hadden. Hierdoor werden verschillend bruikbare elementen verenigd in een methode. Voor 7ROSES zijn alle oefeningen gerangschikt in sessies met vaste thema's (verbinding, hoop, identiteit, betekenisgeving, empowerment, erkenning, en veiligheid). De methode kenmerkt zich door flexibiliteit: de deelnemers bepalen welke sessie nodig is en wordt ingezet.

In de studie werden de ervaringen geëvalueerd van 49 onvrijwillige migranten die deelnamen aan de groepsgewijze pilotversie van 7ROSES. Ze waren allen in zorg bij ARQ Centrum'45 en Equator Foundation, gespecialiseerde GGZ-instellingen in Nederland, en hadden een psychiatrische diagnose. Bij de deelnemers werden voor aanvang en na afronding van 7ROSES de Brief Symptom Inventory (voor het meten van algemene psychische klachten) en de General Self-Efficacy Scale (voor het meten van self-efficacy) afgenomen. Omdat er missende data waren (maximaal 35%), werden de analyses uitgevoerd over de beschikbare data, en aanvullend over de geïmputeerde data. Middels t-toetsen en Wilcoxon rank toetsen werd onderzocht of er op groepsniveau een verschil in scores was tussen vóór en na deelname aan 7ROSES. Ook werden er Reliable Change Indices (RCI) berekend voor deelnemers, om te onderzoeken welk percentage profijt had van deelname. Aanvullend werd er een fictieve casus-beschrijving gegeven.

De verandering in self-efficacy was significant, met kleine effecten. De meerderheid van de deelnemers (70%) had geen verandering in self-efficacy, een deel had wel een positieve verandering (27%) en een deel liet een negatieve verandering zien (3%). De psychische klachten namen significant af onder deelnemers die 7ROSES hadden afgemaakt, met een klein effect, maar in de geïmputeerde data werd dit effect niet gevonden. De meerderheid liet geen verandering in psychische klachten zien (65%), een deel van de populatie veranderde positief (23%) en een deel negatief (11.5%). De bevindingen zijn een eerste indicatie dat 7ROSES een positieve impact kan hebben op self-efficacy, en wellicht ook op psychische klachten, bij onvrijwillige migranten met psychiatrische problematiek.

Conclusie en implicaties

De bevindingen uit dit proefschrift suggereren dat de rol van dagelijkse stressoren, post-traumatische cognities, coping stijlen en self-efficacy context-specifiek is bij onvrijwillige migranten. Hoewel al deze factoren samenhangen met het mentale welzijn van deze groep, is hun invloed niet vanzelfsprekend in elke situatie. Zo zou zelfverwijt beschermend kunnen werken tegen de ontwikkeling van PTSS klachten en lijkt ervaren dagelijkse stress het herstel van PTSS klachten niet per se te belemmeren. Gezien de kwetsbaarheid en omvang van de doelgroep is het van belang om hun mentale gezondheid te stimuleren en behandelingen te optimaliseren. Wanneer we manieren zoeken om dit te bewerkstelligen moeten we oog houden voor de specifieke psychopathologie en dagelijkse stress van de doelgroep, omdat die de werking van ondermijnende factoren en krachtbronnen kunnen beïnvloeden.

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ABOUT THE AUTHOR

Henriëtte (Jetske) Elisabeth van Heemstra was born in 1983 in Amsterdam. She obtained her bachelor in sociology in 2007 at the University of Amsterdam and Humboldt University in Berlin. Afterwards she finished her bachelor and master in Clinical Psychology at the University of Amsterdam in 2011, with distinction. During her master she lived in Palestine to work on her thesis. In this period she developed a fascination for the interplay between social, political and psychological trauma.

After her graduation she worked for the Salvation Army, and different psychology practices. In 2014 she started working at ARQ Centrum'45, where she provides treatment to (undocumented) refugees and victims of human trafficking. She is trained in several trauma focussed treatment methods and Mindfulness, and is a registered Cognitive Behavioural Therapist. In 2022 she obtained her registration as a licensed Mental Health Psychologist (GZ-psycholoog).

Besides her clinical work she was involved in the development of a Method for the Empowerment of Torture Survivors (METS), which is also named 7ROSES. Also she initiated a collaboration between ARQ Centrum'45 and Theater Frascati (a Dutch Theatre). During several projects patients performed in the theatre, the different plays were based on their experiences with trauma, culture and healing.

During her clinical work Jetske became curious on ways to improve mental health care, which brought her to research. In the end of 2016, she started working on her dissertation. In the last years she (collaboratively) collected four different datasets. Besides her Phd, she was involved in several projects, for example the evaluation of 7ROSES provided by non-governmental organisations. She presented her work on international conferences, was part of the ARQ conference committee and she is chair of the ARQ Centrum'45 research meetings.

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[ǂ] Both authors contributed equally to the study and manuscript

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Jetske van Heemstra

Recovery in Context

Mental Health in Relation to Psychotrauma and Postmigration Stress among Forced Migrants

A continuously growing group of people are forced to flee their home countries to seek refuge from unsafe living conditions. Forced migrants are at relatively high risk for developing mental health problems, like posttraumatic stress disorder (PTSD). Common risk factors for psychopathology in this population are traumatic experiences and postmigratory daily stressors. Hence, there is a huge population suffering from the mental impact of uprooted and disturbed lives.

Finding ways to overcome psychopathology related to traumatic experiences and daily stressors plays a central role in the different chapters of this dissertation. First by investigating the role of perceived daily stress in PTSD treatment and second by understanding the role of individual factors for mental health and its treatment. To enhance knowledge on these issues, several quantitative studies were performed among five different samples of forced migrants.

Findings suggest that the role of individual psychological resources, such as post-traumatic cognitions, coping styles, and self-efficacy, in mental health for forced migrants may vary in different settings. Although all these factors impact the wellbeing of forced migrants, their influence may be context-specific. For example, higher self-efficacy and beneficial coping styles may not always constrain mental health problems, while post-traumatic self-blame might attenuate PTSD symptoms under stressful living conditions. Meanwhile, perceived daily stress may not necessary block forced migrants' abilities to recover from PTSD symptoms.

Evidently, there is a need to optimise available treatments for forced migrants' highly prevailing mental health problems. But factors promoting mental health and increasing PTSD treatment response among forced migrants should always be valued in the context of their psychopathology and living conditions.

Henriëtte (Jetske) van Heemstra works as a licensed health care psychologist and researcher at ARQ Centrum'45.

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