

Do post-migration stressors influence treatment effect in refugees with
traumatic grief?

Diede Kuiper

Utrecht University

Under supervision of A.A.A.M.J. Djelantik and A. de Heus

Foundation Centrum '45

May 2018

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

Abstract

Refugees have often experienced traumatic situations such as violence, war, persecution and loss. This makes them highly susceptible to developing mental health problems such as post-traumatic stress disorder (PTSD) and persistent complex bereavement disorder (PCBD). Traumatic grief is experienced by people who have been diagnosed with PTSD and PCBD symptoms following a traumatic loss. Besides the fact that refugees often experience trauma prior to and during migration, refugees who resettle in a new country often experience a lot of post-migration stressors. These stressors involve issues regarding the immigration process such as asylum regulation problems and uncertainty about the future. As well as difficulties in living and social conditions and worries about family members in the home countries in which the conflict may be still ongoing. Post-migration stressors are known to have a negative effect on mental health even over and above the impact of the trauma experiences itself. However, there is a lack of knowledge of how these stressors might influence treatment effects. The present study is aimed at exploring if and how post-migration stressors influence the treatment effect of a day patient treatment for refugees with traumatic grief. It is explored which post-migration stressors played a role in the patient sample; what the treatment effect was in terms of grief symptomatology; and if these stressors were predictors for changes in grief symptomatology. The results suggest that the received treatment had a positive effect on grief-related symptoms of traumatized refugees. There was no indication that post-migration stressors had a negative influence on the treatment effect.

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

There are currently over 110,000 refugees, asylum seekers and stateless persons living in the Netherlands (UNHCR, 2016). These people often had to flee their homes as a result of war, persecution, torture and other human rights violations. The confrontation with traumatic experiences (such as violence and loss) can lead to severe mental health problems. Post-traumatic stress disorder (PTSD), Major Depressive Disorder (MDD), and persistent complex bereavement disorder (PCBD) are frequently observed in this population (Bogic, Njoku, & Priebe, 2015; Fazel, Wheeler, & Danesh, 2005; Nickerson, Liddell, Maccallum, Steel, Silove, & Bryant, 2014). Traumatic grief is experienced by people who have been diagnosed with PTSD and PCBD symptoms following a traumatic loss (Smid, Kleber, de la Rie, Bos, Gersons, & Boelen, 2015). PCBD is characterized by symptoms of yearning and longing for the deceased, intense emotional pain and preoccupation with the deceased or the circumstances of the death (APA, 2013). It is known that the severity of traumatic grief symptoms is affected by the amount and characteristics of the trauma experiences. A dose-effect exists between trauma and psychological distress in refugees (Steel et al., 2009). Likewise, unexpected and violent losses and the loss of close kin (partner or child) produce substantially greater bereavement complications than anticipated and non-violent losses and losses other than close kin (Currier, Holland, Coleman, & Neimeyer, 2008; Djelantik, Smid, Kleber, & Boelen, 2017).

Besides the fact that refugees often experience trauma prior to and during migration, refugees who resettle in a new country often experience a lot of ongoing stressors. These stressors can be subsumed as post-migration stressors and involve issues regarding the immigration process such as asylum regulation problems and uncertainty about the future. As well as difficulties in living and social conditions and worries about family members in the home countries in which the conflict may be still ongoing. Post-migration stressors are known to have a negative effect on mental health (Porter & Haslam, 2005; Silove, Sinnerbrink, Field, Manicavasagar, & Steel, 1997). There are even studies that indicate that post-migration factors

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

impact mental health outcomes over and above the impact of the trauma experiences itself (Chu, Keller, & Rasmussen, 2013; Nicholson, 1997). It seems likely that post-migration stressors interfere with the psychological recovery process (Norris, Aroian, & Nickerson, 2011). However, Li, Liddell, and Nickerson (2016) conclude in their review that there is a lack of research that directly explores the role of post-migration factors in moderating treatment outcomes. The only study up until now that tried to shed light on this matter is from Bruhn et al. (2018). They explored which post-migration stressors were present in their patient sample during the treatment phase and how these stressors interfered with treatment. They found that issues related to work, finances and family were most frequently present. Surprisingly, they found no association between mean number of post-migration stressors present per session and the significant positive treatment effect. Despite the valuable information on the influence of post-migration stressors on depression and GAF scores in treating traumatized refugees the study of Bruhn and colleagues did not touch upon the important issue of grief in traumatized refugees.

Various interventions have been described for the treatment of traumatized refugees (see for example Lambert & Alhassoon, 2015 and Nosè et al., 2017). In the Netherlands, refugees, asylum seekers, and illegals suffering from traumatic grief may be referred to the Foundation Centrum '45, a Dutch mental health care institute specialized in the treatment of traumatized populations. The centre offers a group based day patient treatment programme for traumatic grief directed at diminishing symptoms of PTSD, PCBD and MDD. This programme consists of three phases, with a duration of four months each. The first phase focuses on stabilizing the psychiatric symptoms and investing in mutual trust and support within the group. The second phase focuses on emotional and cognitive processing of the loss via a so-called BEP-TG intervention (Brief Eclectic Psychotherapy for Traumatic Grief; Smid et al., 2015). BEP-TG is based on elements of cognitive models of PTSD, attachment models, a PCBD behavioural

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

model and a PTSD stress sensitization model and has a greater focus on grief than regular trauma treatments. The final phase focuses on resocialisation. For more detailed information of the treatment programme and a case description see de Heus, Hengst, de la Rie, Djelantik, Boelen, & Smid (2017). This treatment has shown its preliminary effectiveness in treating traumatic grief in the first 16 patients. However, de Heus et al. (2017) are critical about the outcome and state that more research is needed. Research on the influence of post-migration stressors on treatment effect is essential. This findings will help to clarify how much emphasis should be given to these stressors and therefore will help to improve existing treatments.

The purpose of the present study was threefold; a) to clarify which post-migration stressors played a role in the current patient sample, b) to describe the treatment effect in terms of change in grief symptoms, and c) to evaluate the impact of the post-migration stressors on the treatment effect, taking into account the total number and type of stressors. First, regarding the presence of post-migration stressors it was hypothesized that in any case stress about legal status, housing problems, ongoing family separation, and ongoing conflict in the country of origin would play a role in the current sample. Secondly, based on previous research by de Heus et al. (2017) a medium to large effect size was expected with regard to the reduction of grief symptoms. Lastly, a negative relationship between the number of post-migration stressors present and the treatment effect was expected, with treatment outcome most affected by stress about the legal status, housing problems and ongoing family separation.

Method

Participants and Procedure

This study used data of all the patients ($N = 79$) who participated in the group based day treatment for traumatic grief between October 2013 and February 2018 at Foundation Centrum '45. Participants were clinically diagnosed with PTSD and PCBD symptoms. Exclusion criteria

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

for participation were acute and active suicidality, severe psychotic symptoms and/or severe alcohol or substance abuse.

Participants underwent standardized measurements at the start of the treatment (T1; within two months before/after the start of the first phase) and at the end of the treatment (T2; within the last two months of phase three). Measures were taken by a team of independent psychologists and psychiatrists, all trained in diagnostics and receiving regular supervision from a senior psychologist.

Of the 79 patients who started the treatment, 15 patients were not incorporated in the final statistical analyses of the present study. Of those 15 participants, 9 people dropped out. The other six did complete the treatment but data essential to the analyses was missing. As regards two of them, there was no T1 assessment data, and there was no T2 assessment data for two others. The final two were absent during more than 50% of the phase two BEP-TG treatment appointments. This was a pre-set exclusion criterium for the final statistical analyses because this would not represent an accurate reflection of the treatment effect.

So, a final sample of 64 participants was incorporated in the completers' analyses. See Table 1 for participant and dropout characteristics. Chi-square tests were run to identify if completers and dropouts differed significantly in characteristics. None of these tests turned out to be significant, which is in line with visual inspection of the numbers. However, the chi square assumption of a minimum expected count of five in each column was often not met and therefore some caution is advised in the interpretation of results.

Table 1
Participant Characteristics

	Completers ($n = 64$)		Dropouts ($n = 15$)	
Age, M (SD)	41.25	(9.37)	41.33	(7.29)
Gender, n (%)				
Female	13	(10.3)	1	(6.7)
Male	51	(79.7)	14	(93.3)
Education, n (%)				

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

Low	19	(29.7)	4	(26.7)
Middle	26	(40.6)	4	(26.7)
High	13	(20.3)	4	(26.7)
Region of Origin, <i>n</i> (%)				
Arabic	33	(51.6)	11	(73.3)
Africa	15	(23.4)	1	(6.7)
Bosnia and Serbia	11	(17.2)	2	(13.3)
Dutch / Colony	4	(6.3)	1	(6.7)
Other (Sri Lanka)	1	(1.6)	0	(0.0)
Marital status, <i>n</i> (%)				
Single	18	(28.1)	4	(26.7)
Married	35	(54.7)	8	(53.3)
Divorced	9	(14.1)	0	(0.0)
Widowed	2	(3.1)	3	(20.0)
Missing family, <i>n</i> (%)				
No	60	(78.1)	14	(93.3)
Yes	14	(21.9)	1	(6.7)
Number of losses, <i>M</i> (<i>SD</i>)	5.38	(2.215)	4.77	(2.522)
Loss ^a close kin, <i>n</i> (%)				
No	55	(85.9)	10	(66.7)
Yes	8	(12.5)	3	(20.0)
Violent loss ^a , <i>n</i> (%)				
No	9	(14.1)	2	(13.3)
Yes	54	(84.4)	11	(73.3)
PCBD diagnose at T1, <i>n</i> (%)				
No	18	(28.1)	4	(26.7)
Yes	46	(71.9)	9	(60.0)

^a Concerning the loss that is considered most painful.

Measurements and Data Collection

Traumatic grief inventory. To assess the intensity of grief symptoms, the Traumatic Grief Inventory (TGI; Boelen & Smid, 2017) was clinically administered. The TGI is a questionnaire consisting of two parts. The first part measures lifetime losses of loved ones and the second part assesses the intensity of the grief symptoms as experienced by the client in the past month. In case of multiple losses, the loss which is currently considered most painful, is used as the anchor event for the second part, which consists of 18 items. Examples of questions are “*I felt a strong longing or yearning for the deceased*” and “*I felt that life is meaningless or*

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

empty without the deceased". Answering options consist of a 5-point Likert scale ranging from '1 = never' to '5 = always'.

The TGI was scored by summing the 18 items per measure moment (T1 and T2) to provide an index of severity of the grief symptoms. The sum scores can range from 18 to 90, with higher scores indicating higher levels of grief. The internal consistency of the two sum scores in the current study was good (Cronbach's alpha T1 = 0.88 and Cronbach's alpha T2 = 0.90). A cut-off score for a provisional PCBD diagnose was determined at ≥ 61 by Boelen and Smid (2017). See Table 1 for the percentage of participants meeting this cut-off point at T1.

Presence of post-migration stressors. The presence of post-migration stressors in the current patient sample was examined via dossier studies. This was done on basis of examination of scientific literature that resulted in a list of possible post-migration stressors was created (see Appendix A for the list of post-migration stressors and their exact conceptualisation). The dossier of each participant was examined for evidence of the presence of any of the post-migration stressors during the time of treatment.

Statistical Analysis

Statistical analyses were performed using SPSS version 20 (IBM, Armonk, N.Y., U.S.A.). The significance threshold was set at $p < .05$ for all analyses. Missing data was considered missing completely at random and did not exceed 5.0% and was therefore replaced by the sample mean (Tabachnick & Fidell, 2007).

Treatment effect. To test if the intensity of grief symptoms changed significantly between T1 and T2, a paired sample t-test was used. For that reason, a change score variable (TGI sum score T2 – TGI sum score T1) was created. The effect size was calculated using Cohen's d.

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

Post-Migration stressors and treatment effect. The influence of the presence of post-migration stressors on the treatment effect was explored through various analyses. First, correlations between all the independent variables (see table 2) were assessed, using Cramer's V (for nominal variables), Spearman's Rho (for ordinal variables) and Pearson's r (for interval variables). Significant correlations with a size of 0.7 or larger were considered problematic (Tabachnick & Fidell, 2007). After this, a final model of relevant post-migration stressors was decided upon based on the found correlations, a re-evaluation of the theoretical conceptualizations, and the found distributions in the sample. Secondly, to assess the individual influence of the final post-migration stressors on the treatment effect (TGI change score) one-way ANOVAs for categorical variables and linear regressions for continuous variables were run. To assess the influence of the stressors while taking their interdependence into account, a multiple regression was run on the TGI change score. After that, the final post-migration stressors were added up into a new variable (total number of stressors) to examine the relationship between the number of stressors in the life of a refugee and the effect of treatment. All nominal variables were made into dichotomous variables (present vs. absent) for this variable. If present, the stressor was accounted for the number of one in the 'total number of stressors' variable. Ordinal variables also had a maximal value of one and their sub-step was accounted for by a half. A simple linear regression was run to analyse the relation between the number of stressors present and the TGI change score.

It was observed that the TGI change score consisted of positive as well as negative TGI change scores. (With negative TGI change scores meaning a positive treatment effect and positive TGI change scores meaning a deterioration of symptoms within treatment). It is presumable that the outcomes of the-above mentioned analyses will be curbed because the two change score variants cancel each other out. For that reason, the TGI change score was split up into two new variables. One variable containing the negative change scores (TGI improvement)

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

and the other variable contained the positive and unaffected change scores and (TGI deterioration). The above-mentioned analyses were run again as regards these two new dependent variables.

Results

Presence of Post-Migration Stressors

Table 2 shows an overview of the post-migration stressors present in the participant sample. No significant differences were found between completers and dropouts using chi square analyses and t-tests. However, the chi square assumption of a minimum expected count of five in each column was often not met and some caution is advised in the interpretation of results.

Table 2
Post-Migration stressors

	Completers (<i>n</i> = 64)		Dropouts (<i>n</i> = 15)	
Time in NL (years), <i>M</i> (<i>SD</i>)	15.35	(8.16)	14.01	(8.43)
Time asylum period (years), <i>M</i> (<i>SD</i>)	6.59	(5.16)	7.08	(8.83)
Legal status, <i>n</i> (%)				
Permanent permit	48	(75.0)	11	(73.3)
Temporary permit	6	(9.4)	2	(13.3)
Pending	7	(10.9)		
Illegal	3	(4.7)	2	(13.3)
Change legal status, <i>n</i> (%)				
Receiving a temporary visa ^a	1	(1.6)	0	(0)
End of Art 64 ^b in phase 3	2	(3.2)	0	(0)
Gained, lost and regained Art 64	1	(1.6)	0	(0)
Language, <i>n</i> (%)				
Dutch	48	(75.0)	9	(60.0)
Insufficient Dutch proficiency	16	(25.0)	6	(40.0)
Work situation, <i>n</i> (%)				
Employed	2	(3.1)	1	(6,7)
Sick leave	13	(20.3)	3	(20,0)
Disabled	6	(9.4)	1	(6,7)
Unemployed	43	(67.2)	10	(66,7)
Financial situation, <i>n</i> (%)				
Normal	28	(43.8)	6	(40,0)
Worries	20	(31.3)	6	(40,0)

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

Debt	14	(21.9)	3	(20.0)
Housing Problems, <i>n</i> (%)	17	(26.6)	7	(46.7)
Legal situation, <i>n</i> (%) ^c				
None	38	(59.4)	12	(80.0)
Asylum	15	(23.4)	3	(20.0)
Work	7	(10.9)	0	(0.0)
Other	4	(6.3)	0	(0.0)
Family separation, <i>n</i> (%) ^d				
No	25	(39.7)	4	(26.7)
Close kin	20	(31.7)	5	(33.3)
Parents	25	(39.1)	7	(46.7)
Siblings	27	(42.2)	9	(60.0)
Other	9	(14.1)	3	(20.0)
Ongoing conflict in country of origin, <i>n</i> (%)	25	(39.1)	7	(46.7)
Subjective lack in social support, <i>n</i> (%)	36	(56.3)	10	(66.7)
Family problems, <i>n</i> (%)	29	(45.3)	5	(33.3)
Family reunion during, <i>n</i> (%)	1	(1.6)	0	(0.0)
Drop in SES ^e after migration, <i>N</i> (%)	2	(3.1)	1	(6.7)
Additional loss during treatment, <i>N</i> (%)	3	(4.7)	1	(6.7)

^a Temporary visa is a permit for 5 years

^b Art 64 includes suspension of departure for a maximum of one year because of medical reasons

^c No participant was involved in multiple lawsuits

^d Adds up to over 100% because this can pertain to several people per client

^e Social Economic Status

Treatment effect

A paired-samples t-test was used to determine whether there was a statistically significant mean change between the pre-treatment grief symptom measure (T1) compared to the post-treatment grief symptom measure (T2). There were no outliers greater than ± 3 standard deviations in the data, as assessed by inspection of a boxplot. The assumption of normality was not violated, as assessed by Shapiro-Wilk's test ($p = .738$). Participants scored significantly lower on the post-treatment grief measure ($M = 60.90$, $SD = 15.594$) compared to the pre-treatment grief measure ($M = 67.49$, $SD = 12.713$), 95% CI [2.852, 10.325], $t(63) = 3.524$, $p < .001$, $d = 0.44$, which is considered to be a medium-small effect (Cohen, 1989). PCBD diagnoses dropped from 71.9% at T1 to 56.3% at T2. It was observed that 41 participants improved and 23 did not.

Post-Migration stressors and treatment effect

Correlations and final stressor model. See Appendix B for the correlation matrix. No significant correlations of 0.7 or higher were found. However, based on the conceptual overlap of ‘family problems’ and ‘subjective lack of social support’ it was decided that ‘family problems’ would not be included in the final model. ‘Work situation’ was also left out of the multiple regression models because the data was skewed since 96.9% of the sample was not employed. A total of nine stressors was summed into the ‘total number of stressors’ variable (language, legal status, financial situation, housing problems, legal situation, family separation, ongoing conflict and subjective lack of social support). So, the scores of this variable could range from 0-9. A mean of 3.37 and a standard deviation of 1.746 was observed.

Singular influence of stressors on TGI change. All assumptions were checked for all independent variables and none were violated. None of the post-migration stressors had a significant influence on the treatment effect on its own, $p > 0.05$ was true for all.

Multiple regression of stressors on TGI change. All assumptions were checked and could be confirmed as being fulfilled. The multiple regression model did not statistically significantly predict TGI change scores $F(10, 52) = 1.721, p = .101$. Within this non-significant model the presence of ‘financial debt’ ($\beta = -.328, p = .024$) and ‘ongoing conflict’ ($\beta = -.344, p = .024$) were significant predictors of reduction in grief symptoms.

Linear regression of total number of stressors on TGI change. Linearity was assessed via visual inspection of a scatterplot. There was homoscedasticity and normality of the residuals. No extreme outliers greater than ± 3 standard deviations were detected. Total number of stressors did not statistically significantly predict TGI change scores $F(1, 62) = 2.295, p = .135$.

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

Singular influence of stressors on TGI improvement and TGI deterioration. All assumptions were checked for all independent variables. The ANOVA assumption of normality was violated for every stressor (Shapiro-Wilk's test $p < .05$ for all), except for two stressors. The presence of an ongoing conflict was normally distributed for TGI improvement and turned out to be a significant predictor of TGI improvement scores, $F(1, 39) = 5.109, p = .029$. However, heterogeneity of variances was detected via Levene's test ($p = .003$). For the presence of financial debts all assumptions were met and this proved to be a significant predictor of TGI deterioration, $F(2,18) = 3.610, p = .048$. However, visual inspection of the data proved that only one participant had financial debt in the TGI deterioration group.

Multiple regression of stressors on TGI improvement. All assumptions were checked and could be confirmed as being fulfilled. The multiple regression model did not statistically significantly predict TGI improvement scores $F(10, 29) = 2.044, p = .065$. Within this non-significant model being involved in a legal situation ($\beta = -.486, p = .014$) and 'ongoing conflict' ($\beta = -.449, p = .013$) were significant predictors of a greater TGI improvement score.

Linear regression of total number of stressors on TGI improvement. To assess linearity a scatterplot of 'TGI improvement' against 'total number of stressors' with superimposed regression line was plotted. Visual inspection of these two plots indicated a linear relationship between the variables. There was homoscedasticity and normality of the residuals. There were no outliers observed greater than ± 3 standard deviations. Total number of stressors did not statistically significantly predict TGI improvement scores, $F(1, 39) = 3.865, p = .056$.

Multiple regression of stressors on TGI deterioration. All assumptions were checked and could be confirmed as being fulfilled, except for multicollinearity. 'Legal status pending/illegal' correlated significantly with housing problems ($r = .772, p < .001$). SPSS excluded 'housing problems' from the final model. The multiple regression model did not statistically significantly predict TGI deterioration scores, $F(9, 13) = 0.775, p = .642$.

Linear regression of total number of stressors on TGI deterioration. To assess linearity a scatterplot of TGI deterioration against ‘total number of stressors’ with superimposed regression line was plotted. Visual inspection of these two plots indicated a linear relationship between the variables. There was homoscedasticity and normality of the residuals. There were no critical outliers greater than ± 3 standard deviations observed. Total number of stressors did not statistically significantly predict TGI deterioration scores, $F(1, 21) = 0.006, p = .939$.

Discussion

The aim of this study was to examine whether the presence of post-migration stressors in the lives of refugees has an influence on the effect of a day treatment program for traumatic grief. Firstly, it was explored which post-migration stressors were present in this patient population. It was hypothesized that stress regarding to the legal status, ongoing family separation, housing problems, and ongoing conflict in the country of origin would play a role in the patient sample. These stressors were indeed found to be present. Furthermore, the loss of a residence permit, and the experience of an additional loss were observed as situations causing a lot of distress. However, also issues leading to positive emotions were observed such as the obtainment of a residence permit and the end of family separation via the experience of family reunification.

Secondly, a medium to large effect size was expected with regard to the effect of treatment on grief symptoms. A significant reduction in grief symptomatology was found with a medium-small effect size. This is a smaller effect than was expected based on results of de Heus et al. (2017). However, it is still a very positive finding. Traumatized refugees are considered a difficult population to treat and treatment results are general lower than other traumatized populations (ter Heide & Smid, 2015). The study by de Heus et al. (2017) had a very small sample size and used the last observation carries forward analysing approach. Their choice for this approach was understandable. However, this approach can lead to an

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

overestimation of the treatment effect because it does not take the possibility into account that deterioration of symptoms is a reason for dropout (Lachin, 2016).

Lastly, we examined how the post-migration stressors which were found to be present influenced the treatment effect. On an individual level, none of the stressors proved to have a significant impact on the mean treatment effect. However, when the treatment effect was split up into a group who improved and a group who stayed the same or deteriorated, two stressors did prove to be significant predictors of the change in grief symptoms. The presence of an ongoing conflict in the country of origin was positively correlated with TGI improvement scores. So, on average, participants for whom the conflict in their home country was still ongoing seemed to benefit more from the treatment than participants for whom there was no ongoing conflict at times of treatment. However, heterogeneity of variances was observed, so caution in interpretation of the results is advised. Having financial debts turned out to be a positive predictor for TGI deterioration scores. In other words, having financial debts was related to deterioration of symptoms. However, only one participant in this group experienced financial debt, which raises questions about reliability of this result. Moreover, all the multiple regression models were non-significant. Within these non-significant models the presence of ongoing conflict and financial debt seemed to predict a greater reduction in symptoms than when they are absent. This is an interesting finding but has to be interpreted with some caution since the model itself was non-significant. The same was observed for being involved in a legal situation and ongoing conflict in the non-significant multiple regression of TGI improvement. Lastly, the total number of stressors was in no way a significant predictor of treatment effect. An statistical explanation for this finding is that all stressors were considered to be equally stressful, which is probably not the case in real life. Running a factor analysis and using the factor loadings in the equation would eliminate this problem. A methodological explanation of this finding lies in the data collection approach of the present study. Dossier study is non-

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

intrusive for the participants. However, the found data is not based on systematically asked questions and this can lead to the misinterpretation of missing data as evidence of the absence of a stressor. The stress of experiencing a drop in social economic status after migration was only explicitly mentioned by two participants. It is highly likely however that more participants had this experience.

The findings of the present study are in line with the findings of Bruhn et al (2018). They found issues related to work, finances and family to be present most often. In the sample of the present study, only two participants had a job. Work issues related to being fired, symptoms interfering with work and even involvement in legal issues as regard to work were noted frequently. Financial debts were common and its presence has proven to significant influence the treatment effect. Family issues, such as separation from family, family conflicts and missing family were often observed. Moreover, death of family members played an important role in our sample in regard to the symptomatology.

Some limitations of the present study can be named. The current research design gives no room for the separate evaluation of the different aspects of the treatment programme. Moreover, an explanation for the current results on the relation between post-migration stressors and treatment effect could be found in the fact that this treatment programme is especially designed for helping refugees in unstable situations. It is conceivable that the treatment itself already captures and diminishes some of the stress related to post-migration situations. Another limitation lies in the sample size. The used analyses need a larger sample size and therefore the results should be considered explorative. Furthermore, it is presumable that people starting off treatment with more symptoms have more room for improvement. In the current study only symptom change is considered. Future research may also take into consideration the starting height of the symptoms and clinically relevant changes besides statistically significant changes. Moreover, because MDD and PTSD are also frequently

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

observed in this population, it would be interesting to look at the influence of post-migration stressors on the treatment of these mental health disorders.

Despite the mentioned limitations, the present findings are valuable and it gives rise to positivism regarding the treatment of traumatized refugees. Present findings indicate that traumatized refugees can benefit from treatment even if post-migration stressors are present.

References

- APA. (2013). *Diagnostic and statistical manual of mental disorders, fifth edition (DSM-5)*. Washington, DC: Author.
- Boelen, P. A., Reijntjes, A., Djelantik, A. M. J., & Smid, G. E. (2016). Prolonged grief and depression after unnatural loss: Latent class analyses and cognitive correlates. *Psychiatry research, 240*, 358-363.
<https://doi.org/10.1016/j.psychres.2016.04.012>
- Boelen, P. A., & Smid, G. E. (2017). The traumatic grief inventory self-report version (TGI-SR): Introduction and preliminary psychometric evaluation. *Journal of Loss and Trauma, 22*(3), 196-212.
<https://doi-org.proxy.library.uu.nl/10.1080/15325024.2017.1284488>
- Bogic, M., Njoku, A., & Priebe, S. (2015). Long-term mental health of war-refugees: a systematic literature review. *BMC international health and human rights, 15*(1), 29.
[doi:10.1186/s12914-015-0064-9](https://doi.org/10.1186/s12914-015-0064-9).
- Bruhn, M., Rees, S., Mohsin, M., Silove, D., & Carlsson, J. (2018). The Range and Impact of Postmigration Stressors During Treatment of Trauma-Affected Refugees. *The Journal of nervous and mental disease, 206*(1), 61-68. doi: 10.1097/NMD.0000000000000774
- Chu, T., Keller, A. S., & Rasmussen, A. (2013). Effects of post-migration factors on PTSD outcomes among immigrant survivors of political violence. *Journal of immigrant and minority health, 15*(5), 890-897. <https://doi-org.proxy.library.uu.nl/10.1007/s10903-012-9696-1>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* 2nd edn.
- Cook, R. D., & Weisberg, S. (1982). *Residuals and influence in regression*. New York: Chapman and Hall.
- Currier, J. M., Holland, J. M., Coleman, R. A., & Neimeyer, R. A. (2008). Bereavement

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

- following violent death: An assault on life and meaning.
- Djelantik, A. M. J., Smid, G. E., Kleber, R. J., & Boelen, P. A. (2017). Symptoms of prolonged grief, post-traumatic stress, and depression after loss in a Dutch community sample: a latent class analysis. *Psychiatry research, 247*, 276-281.
<https://doi.org/10.1016/j.psychres.2016.11.023>
- Fazel, M., Wheeler, J., & Danesh, J. (2005). Prevalence of serious mental disorder in 7000 refugees resettled in western countries: a systematic review. *The Lancet, 365*(9467), 1309-1314. doi:10.1016/s0140- 6736(05)61027-6.
- ter Heide, F. J. J., & Smid, G. E. (2015). Difficult to treat? A comparison of the effectiveness of treatment as usual in refugees and non-refugees. *BJPsych Bull, 39*(4), 182-186. doi: 10.1192/pb.bp.114.047928
- de Heus, A., Hengst, S. M., de la Rie, S. M., Djelantik, A. M. J., Boelen, P. A., & Smid, G. E. (2017). Day patient treatment for traumatic grief: preliminary evaluation of a one-year treatment programme for patients with multiple and traumatic losses. *European journal of psychotraumatology, 8*(1), 1375335.
<https://doi-org.proxy.library.uu.nl/10.1080/20008198.2017.1375335>
- Lachin, J. M. (2016). Fallacies of last observation carried forward analyses. *Clinical Trials, 13*(2), 161-168. DOI: 10.1177/1740774515602688
- Lambert, J. E., & Alhassoon, O. M. (2015). Trauma-focused therapy for refugees: Meta-analytic findings. *Journal of counseling psychology, 62*(1), 28.
<http://dx.doi.org/10.1037/cou0000048>
- Li, S. S., Liddell, B. J., & Nickerson, A. (2016). The relationship between post-migration stress and psychological disorders in refugees and asylum seekers. *Current psychiatry reports, 18*(9), 82. DOI 10.1007/s11920-016-0723-0
- Nickerson, A., Liddell, B. J., Maccallum, F., Steel, Z., Silove, D., & Bryant, R. A. (2014).

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

- Posttraumatic stress disorder and prolonged grief in refugees exposed to trauma and loss. *BMC psychiatry*, *14*(1), 106. <https://doi-org.proxy.library.uu.nl/10.1186/1471-244X-14-106>
- Nicholson, B. L. (1997). The influence of pre-emigration and postmigration stressors on mental health: A study of Southeast Asian refugees. *Social Work Research*, *21*(1), 19-31. <https://doi-org.proxy.library.uu.nl/10.1093/swr/21.1.19>
- Norris, A. E., Aroian, K. J., & Nickerson, D. M. (2011). Premigration persecution, postmigration stressors and resources, and postmigration mental health: a study of severely traumatized US Arab immigrant women. *Journal of the American Psychiatric Nurses Association*, *17*(4), 283-293. DOI: 10.1177/1078390311408900
- Nosè, M., Ballette, F., Bighelli, I., Turrini, G., Purgato, M., Tol, W., ... & Barbui, C. (2017). Psychosocial interventions for post-traumatic stress disorder in refugees and asylum seekers resettled in high-income countries: Systematic review and meta-analysis. *PloS one*, *12*(2), e0171030. <https://doi.org/10.1371/journal.pone.0171030>
- Porter, M., & Haslam, N. (2005). Predisplacement and postdisplacement factors associated with mental health of refugees and internally displaced persons: a meta-analysis. *Jama*, *294*(5), 602-612. doi: 10.1001/jama.294.5.602
- Schaal, S., Jacob, N., Dusingizemungu, J. P., & Elbert, T. (2010). Rates and risks for prolonged grief disorder in a sample of orphaned and widowed genocide survivors. *BMC psychiatry*, *10*(1), 55. <https://doi-org.proxy.library.uu.nl/10.1186/1471-244X-10-55>
- Silove, D., Sinnerbrink, I., Field, A., Manicavasagar, V., & Steel, Z. (1997). Anxiety, depression and PTSD in asylum-seekers: associations with pre-migration trauma and post-migration stressors. *The British Journal of Psychiatry*, *170*(4), 351-357.
- Smid, G. E., Kleber, R. J., de la Rie, S. M., Bos, J. B., Gersons, B. P., & Boelen, P. A. (2015).

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

- Brief Eclectic Psychotherapy for Traumatic Grief (BEP-TG): toward integrated treatment of symptoms related to traumatic loss. *European Journal of Psychotraumatology*, 6(1), 27324.
<https://doi-org.proxy.library.uu.nl/10.3402/ejpt.v6.27324>
- Stammel, N., Knaevelsrud, C., Schock, K., Walther, L. C., Wenk-Ansohn, M., & Böttche, M. (2017). Multidisciplinary treatment for traumatized refugees in a naturalistic setting: symptom courses and predictors. *European journal of psychotraumatology*, 8(sup2), 1377552. <https://doi-org.proxy.library.uu.nl/10.1080/20008198.2017.1377552>
- Steel, Z., Chey, T., Silove, D., Marnane, C., Bryant, R. A., & Van Ommeren, M. (2009). Association of torture and other potentially traumatic events with mental health outcomes among populations exposed to mass conflict and displacement: a systematic review and meta-analysis. *Jama*, 302(5), 537-549. doi:10.1001/jama.2009.1132
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics*. Allyn & Bacon/Pearson Education.
- UNHCR, (2016), Figures at a glance. Retrieved from <http://www.unhcr.org/figures-at-a-glance.html>

Appendix A

Conceptualisation of post-migration stressors

Language: in need of an interpreter vs. not in need of an interpreter; speaking the Dutch language sufficient enough to undergo the therapy sessions without an interpreter.

Legal status: Differentiation between having a permanent permit, a temporary permit (5 years) or Art 64 (1 year), pending (waiting for the verdict about the status), or illegal (having the permit request denied).

Time in NL: Months since arrival in The Netherlands until start of the treatment. (Months were converted to years in the end).

Time of asylum period: duration in months between arrival in The Netherlands and receiving a temporal status. (Months were converted to years in the end).

Change in legal status: Having a change in the legal status (during the treatment period). This can be the change from pending to a temporary resit or the loss of a temporary resit.

Housing problems: not having housing problems vs. having housing problems (defined as living on the streets, in an asylum centre and/or enunciation of high dissatisfaction with current housing situation).

Work: Being employed, on sick-leave, disabled, or unemployed.

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

Financial situation: Differentiation between not having to worry about your financial situation, being worried about your financial situation but not having any debts, and having debts.

Legal situation: Not being involved in a juridical procedure (lawsuit) vs. being involved in a juridical procedure about the legal permit, being involved in a juridical procedure about a work situation, being involved in a juridical procedure about another situation, being involved in multiple juridical procedures.

Family separation: Not being separated from family vs. being separated from family (defined as living in a different country) subdivided into separation from closer kin (partner and/or children, or when there is/are no partner/children, being separated from parents and/or siblings); parents; siblings; others (cousins, uncles, aunts, best friend).

Missing family: Not having missing family vs. having missing family (defined as not knowing if a family member is dead or alive).

Region of Origin: Region of birth.

Ongoing conflict: If there is currently an ongoing conflict in the country of origin (currently is during treatment period). Information retrieved from:

<https://www.crisisgroup.org/>, <https://www.cfr.org/>, <http://isdpr.eu/>, <http://www.bbc.com/>,
<https://www.nederlandwereldwijd.nl/reizen/reisadviezen>, <https://www.state.gov/>,
<https://www.britannica.com>, <https://diplomatie.belgium.be/nl>

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

Change in SES: If there is an explicit mentioned drop in socioeconomic status (e.g., being prosperous in country of origin and being impoverished in The Netherlands).

Subjective social support: not experiencing a lack in social support vs. experiencing a lack in social support (explicitly mentioned by client and/or defined as a DSM-IV axis IV - Problems related to the social environment) .

Family problems: not having family problems vs. having family problems (explicitly mentioned by client and/or defined as a DSM-IV axis IV - Problems with primary support group; or DSM-5 V-code V61.20, V61.10, V61.03).

Marital status: Single, married, divorced, widowed.

Living situation: living alone, living with family, living separated from family (close kin: partner and/or children).

Additional loss: The experiencing of the loss of another loved one during the treatment period vs not having this experience.

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

Appendix B
Correlation matrix

	Status (3 cat)	Gender	Language	Time in NL	Time asyl	Housing	Work	Education	Finance	Lawsuit	Fam SepCK	Missing fam	Region origin	Ong conflict	Lack social sup	Fam confl	Marital stat	Living si	
Status (3 cat)	1.0																		
Gender	V = 0.182; p = 0.347	1.0																	
Language	V = 0.365; p = 0.014	V = 0.022; p = 0.858	1.0																
Time in NL	Rs = -0.546; p = 0.000	rpb = 0.048; p = 0.718	rpb = -0.456; p = 0.000	1.0															
Time asyl	Rs = 0.353; p = 0.048	rpb = 0.016; p = 0.931	rpb = -0.059; p = 0.750	r = 0.051; p = 0.783	1.0														
Housing	V = 0.566; p = 0.000	v = 0.128; p = 0.307	V = 0.225; p = 0.072	rpb = -0.357; p = 0.005	rpb = 0.343; p = 0.055	1.0													
Work	Rs = 0.392; p = 0.001	v = 0.273; p = 0.190	V = 0.319; p = 0.088	Rs = -0.390; p = 0.002	Rs = 0.285; p = 0.114	V = 0.359; p = 0.042	1.0												
Education	Rs = 0.502; p = 0.000	V = 0.116; p = 0.675	V = 0.452; p = 0.003	Rs = 0.475; p = 0.000	Rs = 0.223; p = 0.245	V = 0.228; p = 0.033	Rs = 0.281; p = 0.033	1.0											
Finance	Rs = 0.047; p = 0.715	V = 0.130; p = 0.593	V = 0.148; p = 0.506	Rs = 0.067; p = 0.615	Rs = 0.438; p = 0.014	V = 0.239; p = 0.170	Rs = 0.143; p = 0.266	Rs = -0.052; p = 0.704	1.0										
Lawsuit	V = 0.619; p = 0.000	V = 0.194; p = 0.490	V = 0.341; p = 0.059	rpb = 0.079; p = 0.547	rpb = 0.265; p = 0.143	V = 0.603; p = 0.000	V = 0.310; p = 0.030	V = 0.410; p = 0.003	V = 0.185; p = 0.642	1.0									
Fam sepCK	V = 0.319; p = 0.040	V = 0.095; p = 0.451	V = 0.339; p = 0.007	rpb = 0.411; p = 0.001	rpb = 0.024; p = 0.897	V = 0.150; p = 0.232	V = 0.313; p = 0.103	V = 0.276; p = 0.113	V = 0.132; p = 0.587	V = 0.272; p = 0.197	1.0								
Missing fam	V = 0.423; p = 0.003	V = 0.015; p = 0.907	V = 0.218; p = 0.081	rpb = 0.283; p = 0.029	rpb = 0.194; p = 0.287	V = 0.281; p = 0.025	V = 0.213; p = 0.408	V = 0.382; p = 0.015	V = 0.076; p = 0.835	V = 0.283; p = 0.162	V = 0.210; p = 0.096	1.0							
Region origin	V = 0.354; p = 0.042	V = 0.112; p = 0.938	V = 0.380; p = 0.055	rpb = 0.126; p = 0.337	rpb = 0.077; p = 0.823	V = 0.420; p = 0.023	V = 0.361; p = 0.015	V = 0.257; p = 0.152	V = 0.337; p = 0.080	V = 0.375; p = 0.008	V = 0.415; p = 0.028	V = 0.289; p = 0.254	1.0						

INFLUENCE OF POST-MIGRATION STRESSORS ON TREATMENT OF REFUGEES

Ong conflict	V = 0.038; p = 0.955	V = 0.086; p = 0.492	V = 0.203; p = 0.104	rpb = -0.309; p = 0.016	rpb = -0.378; p = 0.033	V = 0.026; p = 0.835	V = 0.277; p = 0.179	V = 0.026; p = 0.981	V = 0.202; p = 0.281	V = 0.077; p = 0.944	V = 0.423; p = 0.001	V = 0.041; p = 0.742	V = 0.601; p = 0.000	1.0					
Lack social sup	V = 0.049; p = 0.927	V = 0.103; p = 0.411	V = 0.073; p = 0.561	rpb = -0.079; p = 0.548	rpb = -0.147; p = 0.421	V = 0.040; p = 0.748	V = 0.274; p = 0.187	V = 0.098; p = 0.758	V = 0.028; p = 0.976	V = 0.218; p = 0.387	V = 0.030; p = 0.815	V = 0.010; p = 0.939	V = 0.333; p = 0.130	V = 0.254; p = 0.042	1.0				
Fam confl	V = 0.164; p = 0.423	V = 0.087; p = 0.489	V = 0.054; p = 0.664	rpb = -0.165; p = 0.209	rpb = -0.096; p = 0.601	V = 0.050; p = 0.689	V = 0.182; p = 0.549	V = 0.215; p = 0.262	V = 0.238; p = 0.173	V = 0.292; p = 0.142	V = 0.076; p = 0.545	V = 0.126; p = 0.314	V = 0.424; p = 0.021	V = 0.172; p = 0.169	V = 0.083; p = 0.506	1.0			
Marital stat	V = 0.273; p = 0.146	V = 0.314; p = 0.097	V = 0.390; p = 0.021	rpb = -0.223; p = 0.087	rpb = -0.225; p = 0.216	V = 0.243; p = 0.288	V = 0.353; p = 0.004	V = 0.328; p = 0.052	V = 0.196; p = 0.576	V = 0.281; p = 0.087	V = 0.283; p = 0.169	V = 0.203; p = 0.453	V = 0.342; p = 0.033	V = 0.259; p = 0.230	V = 0.246; p = 0.275	V = 0.376; p = 0.029	1.0		
Living sit	V = 0.263; p = 0.064	V = 0.272; p = 0.094	V = 0.225; p = 0.197	rpb = -0.260; p = 0.045	rpb = -0.024; p = 0.897	V = 0.427; p = 0.003	V = 0.358; p = 0.012	V = 0.256; p = 0.107	V = 0.214; p = 0.226	V = 0.339; p = 0.022	V = 0.501; p = 0.000	V = 0.204; p = 0.264	V = 0.400; p = 0.009	V = 0.230; p = 0.184	V = 0.310; p = 0.046	V = 0.529; p = 0.000	V = 0.636; p = 0.000	1.0	
Age	Rs = -0.0512; p = 0.000	rpb = -0.074; p = 0.560	rpb = -0.272; p = 0.030	r = 0.554; p = 0.000	r = -0.157; p = 0.391	rpb = -0.290; p = 0.020	rs = -0.130; p = 0.304	rs = 0.547; p = 0.000	0.247; p = 0.053	V = 0.711; p = 0.215	0.215; p = 0.090	0.238; p = 0.058	0.677; p = 0.451	0.090; p = 0.477	0.058; p = 0.651	0.462; p = 0.000	V = 0.693; p = 0.334	0.736; p = 0.147	V =
Number of losses	Rs = -0.145; p = 0.251	rpb = -0.126; p = 0.321	rpb = 0.115; p = 0.366	r = 0.010; p = 0.937	r = -0.271; p = 0.134	rpb = 0.010; p = 0.937	rs = -0.218; p = 0.084	rs = 0.060; p = 0.654	0.052; p = 0.690	V = 0.310; p = 0.888	0.232; p = 0.068	0.099; p = 0.437	0.451; p = 0.041	0.053; p = 0.678	0.036; p = 0.779	0.230; p = 0.067	V = 0.413; p = 0.206	0.372; p = 0.473	V =
Kinship loss	V = 0.244; p = 0.153	V = 0.395; p = 0.002	V = 0.216; p = 0.087	rpb = -0.177; p = 0.180	rpb = -0.041; p = 0.823	V = 0.017; p = 0.892	V = 0.146; p = 0.719	V = 0.064; p = 0.888	V = 0.138; p = 0.556	V = 0.168; p = 0.618	V = 0.043; p = 0.734	V = 0.140; p = 0.266	0.295; p = 0.242	V = 0.192; p = 0.128	V = 0.139; p = 0.271	V = 0.426; p = 0.001	V = 0.364; p = 0.039	0.309; p = 0.050	V =
Violence loss	V = 0.055; p = 0.908	V = 0.016; p = 0.899	V = 0.134; p = 0.288	rpb = -0.154; p = 0.244	rpb = -0.250; p = 0.168	V = 0.044; p = 0.728	V = 0.363; p = 0.040	V = 0.369; p = 0.045	V = 0.181; p = 0.364	V = 0.187; p = 0.530	V = 0.088; p = 0.486	V = 0.109; p = 0.386	0.351; p = 0.101	V = 0.053; p = 0.672	V = 0.183; p = 0.147	V = 0.183; p = 0.147	V = 0.291; p = 0.149	0.143.; p = 0.526	V =