Autonomy Supportive Parenting in Refugee Parents:
Examining the context of PTSD and Post-migration Stress at Resettlement

Master Thesis

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Abstract

Frequently people who were forced to flee their homes and resettle in a new country continue to experience traumatic symptoms. Traumatic symptoms can amplify the stress related to common migration-related challenges such as language barriers or discrimination. For parents, the evoked stress may drain parental capacities, thereby interfering with child-benevolent autonomy-supportive parenting. To put these relationships to test, we drew upon intensive longitudinal data from the *parenting as it is lived project* on 55 refugee parents of adolescents who migrated to the Netherlands up to five years before data collection (81.8% female, 74.5% Syrian, M_{age}= 39.94, SD_{age}= 5.57). Participants responded to measures of traumatic symptoms, post-migration stress, and autonomy-supportive parenting up to 10 times a day for a period of 6 to 8 days. Two, two-level mediation models based on daily averages of momentary reports (Level 1) nested in participants (Level 2) tested whether post-migration stress partially mediates the relation between traumatic symptoms and autonomy-supportive parenting. Results indicated no significant day-to-day predictions. Yet, more traumatic symptoms went hand-in-hand with heightened post-migration stress, which in turn predicted *more instead of less* autonomy-supportive parenting on the same days. Within days, traumatic symptoms did not predict changes in autonomy-supportive parenting, with the indirect effect of post-migration stress pointing towards *full instead of partial* mediation (β_{within} = 0.17, 95% CI [0.06, 0.31], p < .01). Outcomes highlight the resilience towards traumatic symptoms in refugee's autonomy-supportive parenting capabilities and offer a broader understanding for the role of post-migration stress in life after refuge.

Key words: Trauma, post-migration stress, autonomy-supportive parenting, refugees, experience sampling method, multilevel modeling

Around the world, the number of people who are forced to flee their homes is increasing with the latest estimations expecting 39.5 million people going to seek asylum in 2024 (UNHCR, 2023). While there is only a minority of refugees that seek asylum in faraway countries like those of the EU (UNHCR, 2023), it is these people in particular, which often encounter traumatic events prior to, or along their escape (Nesterko et al., 2019; Vukčević Marković et al., 2023). As a consequence, the risk of poor mental health is high with one out of three refugees matching post-traumatic stress disorder (PTSD) criteria (Patanè et al., 2022; Henkelmann et al., 2020). Moreover, despite residing in economically rich countries for years, PTSD prevalence rates tend to remain stable amongst refugees (Handiso et al., 2023; Henkelmann et al., 2020). Further, apart from these rates, latest findings point out that there is a substantial portion of resettled refugees experiencing moderate handicap by traumatic symptoms in their daily life while not qualifying for PTSD criteria (Bryant et al., 2023; Minihan et al., 2018). Still, despite its relevance, little is known about the day-to-day unfolding of trauma in refugees at resettlement.

When resettling to a new country, migrants are frequently faced with migration-related challenges such as language barriers, discrimination, or feelings of a lost connection to one's home (Hajak et al., 2021; Li et al., 2016). As applying cognitive-theory on PTSD (Ehlers & Clark, 2000) to context of life at resettlement may suggest, traumatic symptoms could enhance the stress related to such migration-related challenges. People with PTSD have been described as living in an ongoing state of perceived threat, which can make even minor challenges become appraised as exceptionally stressful (Ehlers & Clark, 2000; Kimble et al., 2014). For those fleeing from war, intrusive symptoms such as flashbacks to scenes of war may render encountered post-migration challenges such as discrimination especially stressful. In support of this notion, cross-sectional, and longitudinal designs find refugees' traumatic symptoms going hand in hand with post-migration stress (Chen et al., 2017; Graef-Calliess et al., 2023; Wu et al., 2021). While the literature recognizes PTSD and post-migration stress to frequently co-occur, solely the possibility of post-migration stress amplifying trauma has been considered (Miller & Rasmussen, 2010; Bryant et al., 2018). Thus, the potential for traumatic symptoms to predict post-migration stress remains yet to be investigated.

Importantly, post-migration stress also has direct implications for the well-being of refugee children as it is likely to interfere with their parents' autonomy-supportive parenting. Autonomy-supportive parenting warrants the parent to a) pay attention to the child's wishes, b) to provide options that are appropriate to the child's age and interests, c) to leave it up to the child to choose to finally d) show unconditional acceptance for the child's decision (Deci & Ryan, 1985; Grolnick et al., 1997; Soenens et al., 2014). Combined, these parenting behaviors speak to the growing desire for more autonomy in adolescence (Soenens et al., 2007; 2014) and are being shown to predict well-being and higher academic achievement in children across the globe (Brenning et al., 2015; Cheung et al., 2016; Marbell-Pierre et al., 2019; Vasquez et al., 2016). However, given parental reports of supporting their child's autonomy less when feeling stressed (Distefano & Meuwissen, 2022, Van der Kaap-Deeder et

al., 2019), post-migration stress may also hamper autonomy-supportive parenting. Initial support for this comes from a recent intensive longitudinal study on refugees resettled to the Netherlands, which suggests heightened post-migration stress to predict fewer autonomy-supportive parenting at approximately one hour later (Eltanamly et al., 2023). This raises the question of whether subsequent moment predictions may also have lasting effects across days.

Preceding all this may be traumatic symptoms, that could evoke post-migration stress while simultaneously hampering autonomy-supportive parenting. Specifically, traumatized parents may struggle to provide options that align with the child's aspirations, as PTSD is linked with cognitive and mentalization deficits (Janssen et al., 2022; Plana et al., 2014). Further, opportunities to provide options may be missed due to withdrawal or mental absence as a response to intrusive symptoms like flashbacks (Christie et al., 2023). Moreover, parents must feel motivated to grant their child autonomy which appears less likely given the often-reported overprotectiveness and links between traumatic symptoms and restrictive parenting (Bryant et al., 2018; Christie et al., 2019; 2023). Finally, once the child forms a decision, parents are required to accept it regardless of whether they understand the decision or not (Grolnick et al., 1997). This may pose an additional challenge for parents with PTSD as several traumatic symptoms are linked with poor emotion regulation strategies like rumination (Seligowski et al., 2015). Thus, similar to post-migration stress, PTSD may also hamper autonomy-supportive parenting.

And yet, looking at the current state of literature a few questions remain. First, while many findings suggest traumatic symptoms continuing in later years of refugees' migration (Handiso et al., 2023; Henkelmann et al., 2020; Minihan et al., 2018), little is known about its manifestations in daily life parenting (Meijer et al., 2023; van Ee et al., 2016). Next, although initial relationships suggest PTSD to hamper autonomy-supportive parenting (Bryant et al., 2018; Christie et al., 2019; Janssen et al., 2022; Seligowski et al., 2015), the generalizability to average day-to-day traumatic symptoms in refugees remains to be tested. Similarly, while there is a theoretical (Ehlers & Clark, 2000) correlational (Chen et al., 2017; Graef-Calliess et al., 2023; Wu et al., 2021) basis for traumatic symptoms to predict post-migration stress at resettlement, only a reversed relationship has been considered so far (Miller & Rasmussen, 2010; Bryant et al., 2018). Finally, as post-migration stress was found to predict fewer autonomy-supportive parenting in the next moment (Eltanamly et al., 2023), the persistence of such a relation on a day-to-day level, plus the mediative potential remain to be tested.

All this points towards a gap in the literature which is why we investigate whether traumatic symptoms (day 1) predict next-day increases in post-migration stress (day 2) which, in turn, contribute to reductions in parental autonomy support a day later (day 3). Besides expanding the understanding of traumatic symptoms and post-migration stress in refugee families, the newly gained insights will also be practically relevant to support parenting in the context of common challenges at resettlement. The study will rely on data from the *Parenting as it is lived project* (Eltanamly et al., 2022; 2023),

which investigates parenting in refugee family's moment-to-moment outcomes, to test a two-level mediation analysis of post-migration stress mediating the relationship between traumatic symptoms and autonomy-supportive parenting.

Methods

Participants

Included participants were a) Arabic-speaking refugees of war, b) came to the Netherlands up to 5 years before the study and, c) had a child between the ages of 10 to 15. Participants were excluded if the child had not been co-exposed to war and if parents were illiterate as questionnaires were administered in writing. Recruitment of participants took place at language schools, social organizations, and on Facebook groups with a total of 57.392 members. Of 145 initially interested participants, 73 participated in the study. The final sample of N=55 consisted of participants who also participated in the Experience sampling method (ESM) following the baseline. For details on their characteristics see Table 1.

Table 1

Demographics and main study variables (N=55)

		N (%)	M (SD)
Gender	Male	10 (18.2%)	
	Female	45 (81.8%)	
Age			39.94 (5.57)
Ethnic Origin	Syrian	41 (74.5%)	
	Palestinian	9 (16.4%)	
	Other	3 (5.5%)	
	Missing	2 (3.6%)	
Religion	Sunni	51 (92.7%)	
	Christian	2 (3.6%)	
	Atheist	1 (1.8%)	
	Alawy	1 (1.8%)	
Marital status	Married	46 (83.6%)	
	Divorced	8 (14.5%)	
	Widowed	1 (1.8%)	
Years of Education			13.98 (3.72)
Level of education	Secondary University	20 (36.4%)	
	University of applied science	17 (30.9%)	
	Vocational school	6 (10.9%)	
	Other	6 (10.9%)	
Clinical PTSD levels	No	37 (67.3%)	
	Yes	18 (32.7%)	
Reason for fleeing	War	47 (85.5%)	
	Political Opinion	5 (9.1%)	
	Religious Affiliation	3 (5.5%)	
Parents months in NL			42.64 (13.75)
Refugee status	Seeking Asylum	28 (50.9%)	
	Residence Permit	27 (49.1%)	
Number of Children			3.29 (1.13)
Gender child	Male	26 (47.3%)	
	Female	29 (52.7%)	
Age Child			12.69 (1.74)

Procedure

The study drew from an existing data set of the *parenting as it is lived* project (Eltanamly, 2022; 2023) and received ethical approval by the review board of Utrecht University. The data was gathered between April and November 2019 and began with two visits at participants' home by research assistants. In the first visit, the study was explained, and participants gave written informed consent (see Appendices A and B). Then demographics and baseline measures were taken (see Appendix C). To have parents report their autonomy-supportive parenting with regards to one child only, a child was chosen at random for families with multiple children. Four weeks later, a second visit was scheduled in which research assistants introduced the second part of the study involving momentary data collection to participants. The researcher installed the *Ethica App* on participants' smartphones, which, on the next day, began to notify participants and capture their responses at ten quasi-random timepoints between 7:30 a.m. to 10:30 p.m. a day over a period of 6-8 days. The length of this period was pre-determined for participants at random. At each timepoint, 37 items were presented in a set order (see Appendix D). Items inter alia covered participants' PTSD, post-migration stress and parental autonomy support and asked whether the child of reference was present in that moment. Responding to all items took 2-3 minutes on average. Participants were told not to change their daily routine for answering the questionnaires and to treat them as if they were text messages from friends. Before the ESM measures began, research assistants called participants to check for technical difficulties. After participation, parents were thanked and reimbursed with a gift voucher with a value ranging from 15-45€ corresponding to their level of participation in momentary assessments.

Measures

PTSD - Trait

At baseline, PTSD symptoms were assessed based on the Arabic version of the *Posttraumatic Stress Disorder Checklist for Diagnostic and Statistical Manual of Mental Disorders, fifth edition* (PCL-5; Blevins et al., 2015; Ibrahim et al., 2018). The PCL-5 consist of 20 items and has excellent internal consistency in both, Blevins et al. (2015) (Cronbach's $\alpha = .94$), and in our sample (Cronbach's $\alpha = .86$). Participants reported the extent to which they experienced different PTSD symptoms (e.g. intrusive memory, watchfulness, strong negative feelings) in the previous month by using a 5-point scale (range 0-4). Example items included "Feeling jumpy or easily startled?" or "Feeling distant or cut off from other people?". Higher scores indicated more traumatic symptoms and total scores above 33 signaled probable PTSD (Ibrahim et al., 2018).

State PTSD

For ESM measures, adapted versions of trait scales were used, for which a general outline of the adaptation and translation process can be found in Appendix E. To measure momentary traumatic symptoms, six items based on the four subscales of the PCL-5 (Blevins et al., 2015; Ibrahim et al., 2018) and five items on different emotional states stemming from the original single item "Having

strong negative feelings such as fear, horror, anger, guilt, or shame" were used. Participants rated their agreement upon statements such as "Right now, I feel distant or cut off from other people" or "Right now, I feel guilty" on a 11-point visual scale ranging from 0 (not at all) to 11 (completely agree). As the measures concerned nested data, we conducted multilevel confirmatory factor analysis for each state scale to obtain within-person and between-person reliabilities separately (Geldhof et al., 2014). The within-person reliability yielded ω = .73 while the between-person reliability was ω = .93. Higher total scores indicated more experienced traumatic symptoms at that moment.

Post-Migration Stress - Trait

We used the Arabic version of the *Demands of Immigration Scale* (DIS; Aroian et al., 1998; 2008) to assess post-migration stress. The scale assesses challenges based on 23 items with six underlying subscales (Loss, Novelty, Occupation, Language, Discrimination, Feeling at Home). The DIS has shown excellent internal consistency in prior research (Cronbach α = .94; Aroian et al., 2008) and in our sample (Cronbach α = .81). If original items referred to the US or to English language, this was changed to the Netherlands and Dutch, respectively. Participants responded based on a 4-point scale (range 0-3) on e.g. whether "Dutch people are treating me as an outsider." A high total score reflected general high levels of post-migration stress.

State Postmigration stress

State post-migration stress was assessed using single highest factor loading items of the four subscales (novelty, language, discrimination, and not feeling at home) and two items reflecting missed people or places based on the Loss subscale in the *Demands of Immigration Scale* (DIS; Aroian et al., 1998; 2008). An original sixth subscale (occupation) was omitted as difficulties finding work were considered not to fluctuate between moments. By using an 11-point visual scale (range 0-11) participants rated how much they agreed with statements such as "Right now, I do not feel that the Netherlands is my true home." Internal reliabilities were ω = .51 at within-person and ω = .85 at between-person level. Lower scores indicated participants experiencing little post-migration stress in that moment.

Autonomy Support*ive *Parenting - Trait

At baseline, the parent-reported version of the autonomy-supportive parenting subscale in the *Perception of Parents Scale* was used (POPS; Mabbe et al., 2018). A total of 9 items asked participants to rate statements like "'I let my child decide things for himself." using a 7-point scale (range 1-7). The scale showed internal consistency in the acceptable range (Cronbach's α ranging from .58 to .70; Mabbe et al. 2018), with (Cronbach α = .62) for our sample. Negatively phrased items were reversed, and higher total scores indicated more autonomy supportive parenting.

State Autonomy supportive parenting: In the ESM questionnaire four items of the parental-reported version of the POPS (Mabbe et al., 2018) were used. As no factor loadings on subscales of the *Perception of Parents Scale* (POPS; Grolnick et al., 1991; Mabbe et al., 2018) were available, two respective Items tapping on the dimensions of considering and providing autonomy based on face-

validity were selected. Using an 11-point scale, participants indicated their agreement with statements such as “Right now, I considered something from my child’s point of view” and “Right now, I am allowing my child to choose what to do”. The between-person ω = .93 while the within-person ω = .76. Lower total scores indicated less autonomy-supportive parenting.

Data Analysis

Upon receiving Baseline and ESM in two separate datasets, with the latter structured in long format, data completeness was checked and total scores for measures of PTSD, post-migration stress, and autonomy-supportive parenting were computed. Momentary responses with a delay of 30 minutes and indications for autonomy-supportive parenting, while the child was absent, were programmed to be shown as missing values. The received dataset had already been cleaned according to prior set criteria of maximum 25% missing indications per participant in Eltanamly et al. (2022; 2023). Through visualization and computed Cook’s distance scores for scale totals, neither outliers nor potentially influential cases could be identified. This way, further analyses included all eligible N =55 participants.

In preparation for the main analysis, total scores for momentary responses to PTSD, post-migration stress, and autonomy-supportive parenting were aggregated in day-means. This way, the originally three-level structure of the data, was simplified to two levels representing daily means of momentary level data (Level 1), nested within participants (Level 2). Demographics and interrelatedness based on these means were run. Then, assumptions applying to two-level mediation (Normality, Homogeneity, Linearity) were checked through visualization resulting in all assumptions being fulfilled. Day averages for all study constructs were standardized, to later allow for comparison of effect sizes between models. Subsequently, the standardized means for post-migration stress and autonomy-supportive parenting were lagged to one (t+1), and two days (t+2) later, respectively.

For the main analysis, the SPSS freeware MLmed (beta version 2.0; Rockwood, 2017) was used to test a two-level mediation model with daily average of momentary traumatic symptoms as predictor (t), post-migration stress as mediator (t+1) and parental autonomy support as outcome (t+2). Mlmed was chosen as it avoids common interpretational issues with 1-1-1 multilevel mediation models by estimating mediation effects based on within-person-centered means (Enders & Tofighi, 2007; Rockwood & Hayes, 2019; Zhang et al., 2009). In addition, Mlmed provides separate estimates for between-person (fixed) and within-person (random) effects. For our model, slopes, and intercepts of study variables were set to vary. This means that individual participant intercepts and unique correlational strength between study constructs were considered. Further, we used Restricted Maximum Likelihood (REML) sampling with N=1000. The mediation effect was judged to be significant if the within-person 95% confidence interval for the indirect effect did not encompass zero. Lastly, post-hoc power simulations based on the output with N = 55, T= 7 were simulated, using the *PowerAnalysisIL* Shiny App package in R (Lafit et al., 2021), and yielded just below sufficient power

(1-β = 0.79). After the main analysis, we included age, gender, and refugee status as Level-2 covaries in the model. Lastly, a post-hoc two-level mediation analysis with same-day means of PTSD, post-migration stress, and autonomy-supportive parenting was conducted.

Results

Descriptives

Computed analyses of variance components showed significant within-person and between-person variances on all study variables. ICCs for PTSD, post-migration stress, and autonomy-supportive parenting indicated 52%, 50%, and 34% of the variance to occur at a within-person, day-to-day level, respectively. Descriptives and correlations for selected baseline and study variables are presented in Table 2.

Table 2

Means, standard deviations, between-and within-person level associations

Variables	M	SD	1	2	3	4	5	6	7	8	9	10
1.Age	39.94	5.57										
2.Gender	.18	.39	.40**									
3.Clinical PTSD	.33	.47	.15	-.13								
4.Refugee Status	.49	.51	.-.20	-.09	.01							
5.Trait PTSD	30.33	14.05	.20	.03	.81***	-.14						
6.Trait PMS	40.76	10.30	.08	.04	.43**	-.26	.56**					
7.Trait ASP	47.07	5.28	-.01	-.08	.01	.10	-.16	-.10				
8.State PTSD	30.54	17.80	-.05	.12	.18	-.42**	.30*	.32*	-.35**		.42**	.04
9.State PMS	25.52	11.37	.09	.13	.12	-.24	.20	.52**	-.23	.73**		.20**
10.State ASP	25.59	5.20	-.02	-.20	.17	.13	.09	-.15	.09	-.06	-.01	

Note. Correlations below the diagonal are between-person levels. Correlations above the diagonal are within-person level. N(observations) = 418, N(participants) = 55, PTSD = traumatic symptoms; PMS = postmigration stress, ASP = autonomy supportive parenting, Trait = Scale administered at baseline, State: ESM responses averaged in days

$^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$

Main Analysis

The main analysis constituted a two-level mediation model based on PTSD (t), PMS (t+1), and PAS (t+2) lagged day averages. Following from the hypotheses, only within-person day-to-day effects were investigated with a summary of the model's results provided in the left column of Table 3 and Figure 1. Regarding our first hypothesis of daily average of traumatic symptoms positively predicting next-day means of post-migration stress (a-path), no significant within-person effects were found (β_{within} = 0.08, p = .591, 95% CI [-0.24, 0.14]). This means that participants' average monetary traumatic symptoms did not predict how much post-migration stress they would experience on average for moments on the next day. Further, we hypothesized daily post-migration stress to negatively predict parents' average autonomy-supportive parenting on a subsequent day (b-path). Again, the model did not yield a significant result (β_{within} = -0.07, p = .64, 95% CI [-0.35, 0.22]). This means, that contrary to our hypothesis, lower levels of participant's post-migration stress at one day did not predict them reporting more autonomy-supportive parenting the next day. Next, our expectation of higher average PTSD at one day to predict less mean autonomy-supportive parenting at two days later was rejected, as the total effect (c-path) turned out insignificant (β_{within} = -0.11, p = .42, 95% CI [-0.39, 0.18]). Notably, the direct effect (c'-path) mirrored the total effect when including means of post-migration stress at the day in-between in the model. Finally, the prediction of partial mediation by post-migrations stress was also rejected as the indirect effect (ab-path) was also found not significant (β_{within} = -0.01, p = .72, 95% CI -0.04, 0.02]). In sum, this means that variations in participant's PTSD on one day did not predict changes in autonomy-supportive parenting two days later and that these changes were also not explained when considering participants' post-migration stress at the day in-between. Lastly, the secondary analysis with refugee status, age, and gender added as Level-2 covaries to the model yielded similar results in that relationships remained non-significant (see Appendix F, Table F1).

Post-hoc analyses

To deepen our understanding of the hypotheses-contrasting results in our main analysis, we chose to run another two-level mediation with PTSD means as predictor, averages of post-migration stress as mediator and mean autonomy-supportive parenting as outcome variables. Notably, unlike the main model, study construct' means were not time-lagged so that inferences about the direction of same-day associations could be made. Results are presented in the right column of Table 3 and Figure 2. Compared to the first model, two direct effects and the indirect effect were found significant. This way, the a-path turned out to be significant (β_{within} = 0.35, p < .001, 95% CI [0.22 0.47]) indicating participants' average traumatic symptoms experienced at one day tending to go hand in hand with higher post-migration stress on the same day. Further, a significant b-path was found indicating higher post-migrations stress to co-occur with more, instead of less, autonomy-supportive parenting on the same days (β_{within} = 0.50, p < .01, 95% CI [0.19, 0.81]). Similar to the day-to-next-day predictions in model 1, using same-day means also yielded no significant total (c-path) and direct effect (c'-path) of

PTSD on autonomy-supportive parenting (β_{within} = -0.12, p = .30, 95% CI [-0.34, 0.11]). Thus, how much parents experienced traumatic symptoms on a day did not relate to how much autonomy-supportive parenting they reported for the same day. Lastly, while the direct effect was not significant when post-migration stress was added to the total model, a significant indirect effect for post-migration stress predicting autonomy-supportive parenting was found (β_{within} = 0.17, p < .01, 95% CI [0.06, 0.31]). This points towards post-migration stress constituting a full mediator (Agler & de Boeck, 2017). In other words, the relation between PTSD and autonomy-supportive parenting on a given day can fully be explained by same-day changes in post-migration stress.

Table 3

Multilevel Mediation Models predicting Autonomy Supportive Parenting with PTSD and Post-migration stress as predictors

	Model 1: Lagged effects			Model 2: Same-day effects		
Path	Standardized estimate	95% CI	*p* value	Standardized estimate	95% CI	*p* value
Direct effects model						
Path a: PTSD → PMS	0.079	[-0.238, 0.137]	.591	0.347	[0.219, 0.474]	.000
Path b: PMS → ASP	-0.065	[-0.351, 0.221]	.644	0.500	[0.191, 0.809]	.002
Path c’: PTSD → ASP	-0.107	[-0.390, 0.176]	.424	-0.116	[-0.343., 0.111]	.297
Indirect effects model						
Path ab:	-0.005	[-0.039, 0.021]	.724	0.173	[0.064, 0.306]	.006
Total effect						
Path c: PTSD → ASP	-0.107	[-0.390, 0.176]	.424	-0.116	[-0.343., 0.111]	.297

Note. Model 1 is based on lagged variables for PMS (t+1) and ASP (t+2) with N= 359 observations, Model 2 considers same-day means of PTSD (t) PMS (t) and ASP (t) without time lagging based on N = 418, PTSD = traumatic symptoms, PMS = postmigration stress, ASP = autonomy-supportive parenting

Figure 1

Main multilevel mediation model based on lagged day means illustrating within-person effects at level-1. All estimates are standardized.

Note. *p < .05; **p < .01; ***p < .001

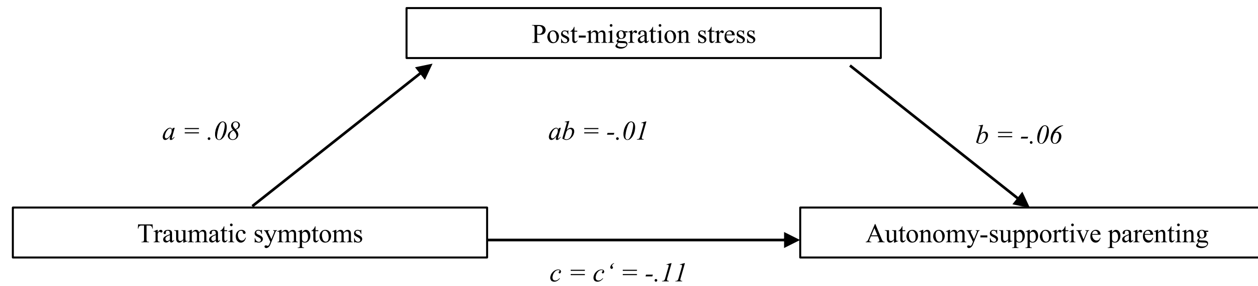
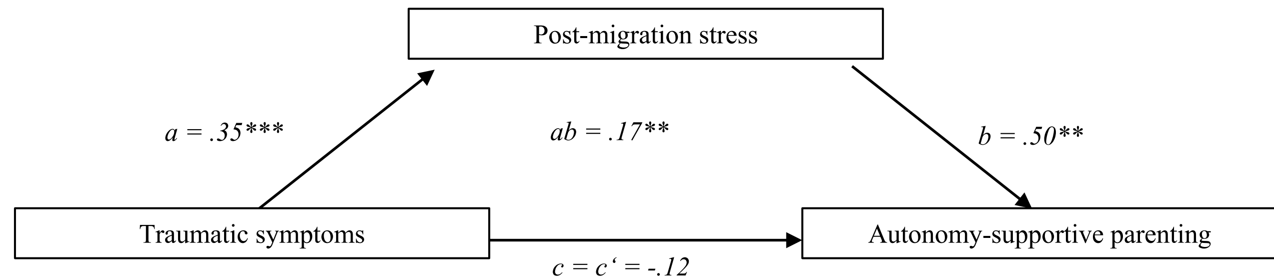


Figure 2

Post-Hoc Multilevel mediation model based on same-day means illustrating within-person effects at level-1. All estimates are standardized.

Note. *p < .05; **p < .01; ***p < .001



Discussion

This study was the first to investigate the potential of postmigration stress posing a partial mediator in a presumed negative relationship between PTSD and autonomy-supportive parenting. Contrary to the expected, no day-to-day transmission effects were found. On top of that, considering same-day predictions, traumatic symptoms did not relate to changes in autonomy-supportive parenting while post-migration stress went hand in hand with more instead less autonomy-supportive parenting. Further, the presumed relationship between PTSD and autonomy-supportive parenting could fully instead of partially be explained by same-day post-migration stress levels. Followingly, drawbacks and alternative explanations in light of the literature are discussed for each hypothesis separately.

Do traumatic symptoms predict autonomy-supportive parenting?

In contrast to the vast literature suggesting traumatic symptoms to interfere with autonomy-supportive parenting capabilities (Bryant et al., 2018; Christie et al., 2019; Janssen et al., 2022; Plana et al., 2014; Seligowski et al., 2015), we found no support for participant's average momentary traumatic symptoms to negatively predict autonomy-supportive parenting when looking at same-day or two-day apart relations. This suggests parents to not let traumatic symptoms interfere with their tendency to support their child's autonomy thereby highlighting participant's resilience. Given the well-established links between PTSD and autonomy-restrictive parenting (Bryant et al., 2018; Christie et al., 2019), the null finding may be best explained by symptom severity as only one-third of all participants indicated levels of probable PTSD at baseline. Put differently, predictions of fewer autonomy-supportive parenting may only apply to parents with clinically significant levels of PTSD. Support for this comes from relationships between traumatic symptoms and measures of parental detachment and insensitivity that applied to resettled refugees with twice as many participants matching PTSD levels as in our sample (van Ee et al., 2016). Thus, replications with bigger samples including below and above PTSD scoring refugees are needed to better identify if and when traumatic symptoms may impede autonomy-supportive parenting. Further, similar to other literature investigating trauma in refugees, our sample consisted of female participants mainly (Affleck et al., 2018). Yet, there is some literature empathizing gender differences in predictions of parenting by war trauma, that may have also corrupted our findings (Maloney et al., 2022; Palosaari et al., 2013). Future replications should also pay more attention to obtaining a gender-balanced sample to assure the generalizability of our findings to fathers too. In addition, we found autonomy-supportive traits in participants to negatively relate to experienced traumatic symptoms during ESM. This finding speaks to the need for sufficiently available mental capacities to act autonomy supportive (Grolnick et al., 1997; Soenens et al., 2014) and calls for more research on factors contributing to parental resilience against trauma (Gewitz et al., 2022; Raghavan & Sandanapitchai, 2024).

Do traumatic symptoms predict more post-migration stress?

Another objective of this study was to test whether traumatic symptoms could also predict post-migration stress as prior research mainly considered the reverse possibility (Miller & Rasmussen,

2010; Bryant et al., 2018). Contrary to the expected, traumatic symptoms on one day did not predict more post-migration stress on the next day. This adds to the preliminary literature on the complexity of projecting traumatic symptoms across days (Canty et al., 2024; Schuler, 2017) by highlighting the projections of traumatic symptoms to the next days' post-migration stress to also follow no stringent pattern but vary considerably across days, within people. Nevertheless, given the observational nature of our study, confounding effects must also be considered. With regards to the daily nine-hour timeframe between the last and the subsequent first days' ESM assessments, participant's sleep quality may have had the most confounding effect. While we did not ask participants how well they slept that night before, sleep may have nullified the transferring relationship between traumatic symptoms and the next day's post-migration stress as former studies find it to positively relate with both (Lies et al., 2020; 2021; Müller et al., 2021). Future intensive longitudinal designs studies would thus do well to also include measures of sleep quality or to use a more controlled setting.

Interestingly, when looking at same-day predictions, we found refugee's traumatic symptoms to indeed go hand in hand with more post-migration stress. This aligns with models of PTSD (Ehlers & Clark, 2000) and prior found cross-sectional relationships (Graef-Calliess et al., 2023) and could indicate traumatic symptoms to indeed raise refugee's stress concerning post-migration challenges within same-day timespans. Alternatively, the relationship could align with the literature suggesting a reversed relationship (Aragona et al., 2013; Chen et al., 2017; Li et al., 2016; Sim et al., 2018) in which post-migration stress from discrimination would evoke traumatic symptoms like hyperarousal. However, given found bi-directional links between post-migration stress and traumatic symptoms between six months intervals (Specker et al., 2024), the relationship is likely to go both ways on same-day too.

Of note is also the secondary finding of participants tending to have experienced more traumatic symptoms on ESM days when facing an insecure asylum status. This underscores earlier findings on residence insecurity posing a marker for mental health outcomes (Gleeson et al., 2020) and it being heavily linked with re-experiencing symptoms in PTSD (Schiess-Jokanovic et al., 2022). Considering the upheld high prevalence rates of PTSD in refugees at resettlement (Handiso et al., 2023), we call for more research on alleviating the PTSD-maintaining potential of having a pending asylum case.

Does post-migration stress predict less autonomy-supportive parenting?

Based on earlier findings of post-migration stress to predict less parent-reported autonomy-supportive parenting in subsequent moments (Eltanamly et al., 2023), we expected similar transmission to also apply across days. Contrary to the expected we found no day-to-day transference, meaning that average momentary post-migration stress on one day did not precede less or more autonomy-supportive parenting on the next day. Unassured volunteering or activism of participants may have provided them with enough self-efficacy to withstand interferences of stress with their parenting. In this vein, heightened self-efficacy was shown to minimize the aversive effects of post-migration stress

on autonomy-supportive parenting (Eltanamly et al., 2022; 2023). As qualitative data may suggest, volunteering or political activity may similarly fulfill basic psychological needs (Walther et al., 2021), which in turn is thought to drive next days' predictions of autonomy-supportive parenting (Mabbe et al., 2018; Neubauer et al., 2021).

Notably, links between participants' post-migrations stress and their autonomy-supportive parenting could be established when looking at same-day predictions. Surprisingly, a positive direction was found with more post-migration stress going hand in hand with more instead of less support for the child's autonomy on the same days. However unexpected, this aligns with alternating positive and negative relationships between the two concepts depending on looking at same, or next time point predictions, respectively (Eltananly et al., 2023). Further, this finding raises the question of whether parents reported to support their more autonomy-supportive parenting when experiencing stress due to a necessity or intentionally.

With regards to the open phrasing of state autonomy support items during ESM, both may be the case. In this vein, language barriers in appointments with host-country authorities tend to frequently occur as usually no interpreters are provided. This systematically encourages the violation of children's rights and poor translations in practice as children tend to regularly be put in the role of interpreters for their parents (Brophy-Williams et al., 2020; Kletečka-Pulker et al., 2018; Mier-Chairez et al., 2019). Along the translations, parents need to devote more attention to their child's thought processes, thereby explaining higher scores on the attentive items of the autonomy-supportive parenting state scale. Besides, as such situations were reported to strengthen the parent-child relationship (Crafter & Iqbal, 2021; Morales & Wang, 2018), parents may have also act more autonomously supportive as a sign of reciprocal appreciation. To explain parents supporting their child's autonomy more as a reaction towards feelings of loss or discrimination, the possibility of participants belonging to a group of highly resilient, daily functioning-maintaining refugees must be considered (Byrow et al., 2022). Accordingly, by purposefully supporting their child's autonomy, parents may have either attempted to negate drains on their, or their child's mental health in situations of missing a lost home and friends, or discrimination, respectively (Gibbons et al., 2010; Simons et al., 2006; Wenzing et al., 2021). Followingly, more research is needed to fully explain the found co-occurrence of post-migrations tress and more autonomy-supportive parenting.

Mediation and clinical implications

Taken together, the present study advanced conventional models on the role of PTSD and post-migration stress at refugees' resettlement (Miller & Rasmussen, 2010) by investigating a post-migration stress-driven mediation process. While we found no support for the average refugee's traumatic symptoms to predict same, and next-day changes in autonomy supportive parenting, we present a full mediation process by post-migration stress within days. This extends the literature on the relative contribution of PTSD and post-migration stress on mental health (Boor et al, 2020; Jannesari et al., 2020; Wu et al., 2021) as to links with parenting. On top of that, the findings have direct clinical

implications as they provide initial guidance of when post-migration stress should best be targeted to facilitate refugees' autonomy-supportive parenting.

Strengths and limitations

Nevertheless, the findings must also be seen in light of the methodological limitations. First, the sample mainly consisted of mothers that were muslin and came from Syria, thereby limiting the generalizability to other refugee populations. On top of that, the sample size was low and yielded below sufficient power for our main analysis, so that an inflated Type 1 and 2 error rate must be considered. Next, the observational design did not control for previously mentioned confounders such as sleep or volunteering activities. Also, as we only used parental self-reports to obtain autonomy-supportive parenting, we cannot accurately speak for the effects according to the child's perspective (McCurdy et al., 2020; Van der Kaap-Deeder et al., 2019). Further, as the post-hoc day analysis assumed a cross-sectional design all detected relationships may also work in reverse. Lastly, by aggregating the state indications in day means, we violated the assumption of 1-1-1 multilevel mediation models that all study constructs were measured at the lowest level (Rockwood, 2017; Zhang et al., 2009).

Despite these limitations, the study also showed many methodological strengths. In light of the chosen analysis, within-person mean centering approaches and separate between-person, and within-person estimates sophisticated our model (Enders & Tofighi, 2007; Rockwood, 2017, Zhang et al., 2009). Further, aggregation of data in means circumvented data loss, and intercepts and slopes were set to randomly vary thereby improving the model's account for natural variance in the sample. Next, by using an ESM approach we directly assessed people's affect in e.g. challenging situations while problems with memory recall were avoided (Bolger et al., 2003). Further, participants were randomly allocated to 6-to-8-day periods at ESM, thereby lowering the chance of day-specific confounders. Finally, the adaptation procedure of trait to state items followed a pre-set scheme while additional back-translation including the use of native-speaking translators, who were blind to the aim of the study, safeguarded the retention of scales' meaning.

Concluding words

In sum, though not aligning with prior expectations, these results offer reason to hope by reminding us of resilient capacities in those who managed to escape war and who seemingly do not let their persistent trauma interfere with how much they supported their child's autonomy. Further, we provide initial support for traumatic symptoms to transform migration-related challenges into stress while speaking against any day-to-day transmissions. Lastly, with regards to the title of the paper, our findings highlight the significance of a stressful post-migration context over the continued role of PTSD in explaining the autonomy-supportive parenting of refugees at resettlement.

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Appendix A

Participant Information Form

Dear Participant,

Before we begin this study, it's important that you are informed about our research and the associated procedures. Please carefully read the text below and don't hesitate to ask about any ambiguities. The researcher is happy to answer your questions.

What is this study about?

Parents who seek of have refugee status have often experienced extraordinary hardships that have changed their lives. After coming to the Netherlands, many parents have both good and bad experiences while they try to adjust to the society and parent their children in a new context. How are the emotional states of parents who seek or have refugee status impacted by the challenges and opportunities they face in their everyday lives? The results of this research will reveal how hardships are linked to parents' emotional states and ultimately help parents who have faced adversity thrive.

How do I participate?

If you decide to participate, we will ask you to meet with our research team twice spaced one month apart. There are two phases to this project.

Phase One:

- A face-to-face meeting will be held with the researcher for around 1 hour (60 minutes).
- The researcher will ask you to fill out a few questionnaires and will conduct a short interview with you which will be audio recorded.

Phase Two:

- One month after the face-to-face meeting, the researcher will call you to arrange a time and place to meet up for phase 2.
- The researcher will visit you and will install an application on your telephone through which you will receive very brief surveys.
- The application will send out 10 notifications per day for a week.
- Each notification asks you to respond to the brief survey which takes around 2 minutes every time.
- The following day, the researcher will call you to inquire about your ability to respond to the beeps and if you have encountered any problems.

- The study will stop after one week days from the start of phase 2.

What is expected of me?

In phase 1, you are expected to fill in the short questionnaires and participate in a short interview at a location that is most convenient for you. The researcher will show you how to participate in the smartphone study by demonstrating how to respond to a brief survey. In phase 2, we kindly ask you to respond to as many beeps per day as you can.

What are the risks and/or benefits of participating in this study?

We do not anticipate that participating in this study will cause significant discomfort. We will be asking you to report about things that have happened and are currently happening in your life and your emotional states. You might therefore feel a little degree of discomfort, especially if you are not used to think about some aspects of your life. We expect the discomfort to be very little.

You might also feel obligated to stay close to the smartphone anticipating a beep, or fearing missing out on a beep. It is important to note that we prefer for you to run your day normally. Please just respond to the beeps as they happen. So if you want to rest, go to the gym, or go out with friends, carry on with your life normally. Just view the beeps as you would respond to a WhatsApp message.

Will my participation in this study be kept confidential?

For this research, some background information will be used. Your data and any information you provide will be kept strictly confidential and will be used only for research purposes. Only the researchers will have access to identifiable information, and this information will be treated with utmost confidentiality and will be anonymously analyzed. This means that we will work with codes instead of participant names. Participant names will be stored separately from the data. In addition, personal information will not be shared with third parties other than the Application provider.

What will happen if I decide not to continue with the study?

Your participation is completely voluntarily. If you give permission to participate in this research you will be given a consent form to sign. If at any moment you decide not to continue in this research this will not have any negative consequences. If during the research, and after giving your consent to participate in the study, you decide you do not wish to continue, this will not have any negative consequences. You can do so yourself by clicking the “Leave Study” button on the app. However we would greatly appreciate it if you inform us that you have decided to do so, and therefore we will then ask you to fill in the “Exit Survey” in the app. In the case that you withdraw from the study, we hope that we may retain and use any information obtained from you up to the point of your withdrawal for

the purposes stated in this letter. However, if you want to delete the information you have provided us with, you can also do so by clicking "Delete Data" on your profile page on the app. We also need to contact us to make sure any copies of the data are deleted from our servers.

Will I be compensated for my participation?

As a thank you to your willingness for participation, and depending on how many assessments you complete, you will be compensated up to €40 for the time and effort you put into participating. The more you respond to the beeps, the more your compensation gets.

Insurance

Since there is no danger to your health and safety, no special insurance has been purchased. However, should you feel uncomfortable following an interview with the researcher, or during data collection, we can guide you for assistance in the referral process to an Arabic-speaking therapist.

Further Information

If you have any further questions about this research, please get in touch with the responsible researchers, Hend Eltanamly, email: xxx or dr. Patty Leijten, email: xxx For any complaints over this research you can get in touch with a member of the Ethical Committee, dr. Henny Bos, tel. xxx, email xxx xx, xx, xx.

Appendix B

Consent Form

This form is part of the written information you have received about the research in which you are participating. By signing this form, you are confirming that you have read the Participant Information Form, and do understand what is in it. Also, by signing this form, you declare that you accept the outlined procedure of the study.

If you need more Information about this research, you can contact the main researcher: Hend Eltanamly, Tel: xx email: xx.

[**Participant**]

"I have read and understood the information in the Participant Information Form, and I give my consent to participate in this research. I reserve the right to withdraw this consent without giving any explanation. Such withdrawal bears no negative consequences. In addition, I reserve the right to stop my participation in this study at any moment."

I give consent for the researchers to contact me for a follow-up study.

Yes

No

Date:

....

signature

[**Researcher**]

"I have given information about this research. I declare my readiness to answer any questions pertaining to this research."

Date:

....

Hend Eltanamly *signature*

Appendix C

Trait Scales posed at Baseline

Blevins, C. A., Weathers, F. W., Davis, M. T., Witte, T. K., & Domino, J. L. (2015). The posttraumatic stress disorder checklist for DSM-5 (PCL-5): Development and initial psychometric evaluation. *Journal of Traumatic Stress*, *28*(6), 489-498.

Respondents rate how much a problem described in the item statement bothered them over the past month on a 5-point scale from 0 (not at all) to 4 (extremely).

1. Repeated, disturbing, and unwanted memories of the stressful experience
2. Repeated, disturbing dreams of the stressful experience
3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back and reliving it)
4. Feeling very upset when something reminded you of the stressful experience
5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)
6. Avoiding memories, thoughts, or feelings related to the stressful experience
7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)
8. Trouble remembering important parts of the stressful experience
9. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)
10. Blaming yourself or someone else for the stressful experience or what happened after it
11. Having strong negative feelings such as fear, horror, anger, guilt, or shame
12. Loss of interest in activities that you used to enjoy
13. Feeling distant or cut off from other people
14. Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you
15. Irritable behavior, angry outbursts, or acting aggressively
16. Taking too many risks or doing things that could cause you harm
17. Being “super alert” or watchful or on guard
18. Feeling jumpy or easily startled
19. Having difficulty concentrating
20. Trouble falling or staying asleep

Aroian, K. J., Kaskiri, E. A., & Templin, T. N. (2008). Psychometric evaluation of the Arabic language version of the demands of immigration scale. International Journal of Testing, 8(1), 2-13.

DIS Items By Subscale

Loss Subscale Items
- I miss the people I left behind in my original country
- When I think of my past life, I feel emotional and sentimental
- When I think of my original country, I get teary
- I feel sad when I think of special places back home

Novelty Subscale Items
- I need advice from people who are more experienced than I to know how to live here
- I must learn how certain tasks are handled, such as renting an apartment
- I am always facing new situation and circumstances
- I have to depend on other people to show or teach me how things are done

Occupation Subscale Items
- I am disadvantaged in getting a good job
- My work status is lower than what it used to be
- I cannot compete with Americans for work in my field
- I have fewer career opportunities than Americans
- The work credentials I had in my original country are not accepted

Language Subscale Items
- Americans have a hard time understanding my accent
- I have difficulty doing ordinary things because of a language barrier
- Talking in English takes a lot of effort

Discrimination Subscale Items
- As an immigrant, I am treated as a second-class citizen
- Americans don't think I really belong in their country
- Americans treat me as an outsider
- People with foreign accents are treated with less respect

Not At Home Subscale Items
- I do not feel like home
- Even though I live here, it does not feel like my country
- I do not feel that this is my true home

Mabbe, E., Soenens, B., Vansteenkiste, M., Van der Kaap-Deeder, J., & Mouratidis, A. (2018). Day-to-day variation in autonomy-supportive and psychologically controlling parenting: The role of parents' daily experiences of need satisfaction and need frustration. Parenting, 18(2),

Respondents rate their agreement to each statement on a 7-point scale from 1 (not at all) to 7 (very true).

1. 'I know how my child feels about things'
2. 'I try to tell my child how to run their life'
3. 'I, whenever possible, allow my child choose what to do'
4. 'I listen to the my childs opinion or perspective when they have a problem'
5. 'I let my child decide things for himself'
6. 'I insist upon doing things my way when it comes to my child'
7. 'I am usually willing to consider my childs point of view'
8. 'I help my child choose their own direction'
9. 'I am not very sensitive to many of my child's needs'

Appendix D

State Items posed during ESM

Table E1 State items posed during ESM

1	1	I feel **happy**	Filler	
2	2	Right now, I **miss the people** I left behind in my original country	DIS	Post Migration (Stress)
4	3	I feel **ashamed**	PTSD	Trauma
5	4	Right now, I feel **helpless** about my child's behavior	MaaP	Parental Efficacy
6	5	Right now, my parenting skills are **effective**	MaaP	Efficacy
7	6	I feel **cheerful**	Filler	
8	7	Right now, I am **taking** my child's opinion or **point of view** in mind	POPS	Autonomy Support
9	8	Right now, I feel **confident** as a parent	MaaP	Efficacy
10	9	I miss special **places** back home	DIS	Migration
11	10	Right now, I am **dependent** on others to show or teach me how somethings are done here	DIS	Migration
12	11	I feel **scared**	PTSD	Trauma
13	12	I feel **angry**	PTSD	Trauma
14	13	Right now, my child is getting their own way, so **why try**?	MaaP	Efficacy
15	14	Right now, I have difficulty doing ordinary things because of a **language barrier**	DIS	Migration
16	15	Right now, Dutch people are treating me as an **outsider**	DIS	Migration
17	16	Right now, I feel **distant** or cut off from other people	PTSD	Trauma
18	17	Right now, I feel connected to a **spiritual** power greater than myself	PTG	Growth
19	18	Right now, I feel super alert/**watchful**/on guard	PTSD	Trauma
20	19	Right now, I do not feel that the Netherlands is my true **home**	DIS	Migration

21	20	Right now, I am allowing my child to choose **what to do**.		POPS	Autonomy
22	21	I feel **guilty**		PTSD	Trauma
23	22	Right now, I am seeking out information about new **opportunities**		PTG	Growth
24	23	Right now, I am having difficulty **concentrating**		PTSD	Trauma
25	24	Right now, I am acting **irritably**, angrily or aggressively		PTSD	Trauma
26	25	Right now, I am trying to **avoid** memories, thoughts, or feelings		PTSD	Trauma
27	26	Right now, I am allowing my child to **decide** something for him/herself.		POPS	Autonomy
28	27	Right now, I feel **close** to someone		PTG	Growth
29	28	Right now, I am experiencing disrupting and unwanted **memories**		PTSD	Trauma
30	29	Right now, I **considered** something from my **child's point of view**.		POPS	Autonomy
31	30	I feel **horrified**		PTSD	Trauma
32	31	Right now, I feel in **control** of my emotions		PTG	Growth
33	32	Right now, I feel **thankful** for what I have in life		PTG	Growth
3	33	Since the last beep I have tried to **connect** with my child	Yes		
			No		
34	34	Right now, I am now at..	Home		
			Work/ School		
			At a friend's/ family's house		
			Shop		
			Restaurant		
			Government body		
			Public Transport		

			Public park		
			Other		
35	35	I prefer to be somewhere else			
36	36	Right now, I am with…	Nobody		
			Nobody, but in contact through social media		
			Family		
			Wife/Husband		
			Children		
			Close Friends		
			Strangers		
			Colleagues		
			Others		
37	37	I prefer to be with someone else			

Appendix E

Trait to State measure adaptation process

State measures assessed during ESM were created based on the content of the trait scales administered at baseline. The adaptations followed a set order and was done in English as not all participants spoke Arabic. First, highest factor loading items for each subscale were selected. Exceptions were made if these items demanded too excessive reflection of participants. In that case, the second-highest factor loading items were used. If items asked participants to rate their general tendency, they were changed to ask in reference to that particular moment in time. To give an example, the trait item: “whenever possible, I allow my child to choose what to do” became the state item: “right now, I am allowing my child to choose what to do”.

All scales were administered in Arabic. Existent translations for the trait scales of PTSD (PCL-5; Ibrahim et al., 2018) and post-migration stress (DIS; Aroian et al., 1998; 2008) were used for Arabic state items creation to ensure that the meaning was retained. In the case of the trait scale for autonomy-supportive parenting (POPS; Mabbe et al., 2018) no official translation was available so that translations were based on English items. All translations were checked by an Arabic native-speaking Syrian librarian and later translated back into English by other interpreters, who were blind to the original English version of the scales. Back translations indicated no need for further changes so that all items were retained.

Appendix F

Table F1 *Lagged Multilevel Mediation Models predicting Autonomy-Supportive Parenting with PTSD and Post-migration stress as predictors*

	Model 1: Main model			Model 3: including covaries		
Path	Standardized estimate	95% CI	*p* value	Standardized estimate	95% CI	*p* value
Direct effects model						
Path a: PTSD → PMS	0.079	[-0.238, 0.137]	.591	0.072	[-0.027, 0.170]	.154
Path b: PMS → ASP	-0.065	[-0.351, 0.221]	.644	-0.076	[-0.363, 0.211]	.588
Path c': PTSD → ASP	-0.107	[-0.390, 0.176]	.424	-0.115	[-0.406., 0.176]	.409
Indirect effects model						
Path ab:	-0.005	[-0.039, 0.021]	.724	-0.006	[-0.036, 0.018]	.668
Total effect						
Path c: PTSD → ASP	-0.107	[-0.390, 0.176]	.424	-0.115	[-0.406., 0.176]	.409

Note. Model 1 is based on lagged variables for PMS (t+1) and ASP (t+2) with N= 359 observations, Model 3 included age, gender, residence status as Level 2 covaries based on N = 352, PTSD = traumatic symptoms, PMS = postmigration stress, ASP = autonomy-supportive parenting.