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Brief Narrative Exposure Therapy for Posttraumatic Stress in Iraqi Refugees: A Preliminary Randomized Clinical Trial

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Abstract

Many Iraqi refugees suffer from posttraumatic stress. Efficient, culturally-sensitive interventions are needed, and so we adapted narrative exposure therapy into a brief version (brief NET) and tested its effects in a sample of traumatized Iraqi refugees. Iraqi refugees in the U.S. reporting elevated posttraumatic stress ($N=63$) were randomized to brief NET or waitlist control conditions in a 2:1 ratio; brief NET was 3 sessions, conducted individually, in Arabic. Positive indicators (posttraumatic growth and well-being) and symptoms (posttraumatic stress, depressive, and somatic) were assessed at baseline and 2- and 4-month follow-ups. Treatment participation (95.1% completion) and study retention (98.4% provided follow-up data) were very high. Significant condition by time interactions showed that brief NET led to greater posttraumatic growth (Effect size; $ES=0.83$) and well-being ($ES=0.54$) through 4 months than the control. Brief NET reduced symptoms of posttraumatic stress ($ES=-0.48$) and depression ($ES=-0.46$) compared to control, but only at 2 months; symptoms of controls decreased from 2 to 4 months, eliminating condition differences at 4 months. Three sessions of NET increased growth and well-being and led to symptom reduction in highly traumatized Iraqi refugees. This preliminary study suggests that brief NET is both acceptable and potentially efficacious in traumatized Middle Eastern refugees.

Refugees may experience traumatic events across the various phases of their journey. Before their flight, violence, political upheaval, loss of property, death of loved ones, and torture may occur; and during their flight, there may be separation from family and a perilous journey to the host country. During their reception in an intermediary country, uncertainty over the future, poor living conditions, and reexposure to violence are possible. Finally, resettlement in a new country often involves stressors related to adjustment. The cumulative nature of refugees' stressors increases their risk for psychological problems, especially depression and posttraumatic stress disorder (PTSD; Fazel, Wheeler, & Danesh, 2005; Keyes, 2000).

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Many Iraqi refugees experienced trauma from the 1980-1988 Iran-Iraq war, the 1991 Gulf War, subsequent economic sanctions, the repressive regime of Saddam Hussein, the 2003 U.S. invasion, and the ensuing civil war and sectarian strife. Being resettled in the U.S. may also complicate these refugees' adjustment, given the role played by the U.S. in causing them to become refugees in the first place. These factors, along with the stigma associated with seeking psychological care (Nassar-McMillan & Hakim-Larson, 2003), leave many traumatized Iraqi refugees with prolonged suffering. Indeed, estimates of the prevalence of PTSD among these refugees ranges from 30% to 40%, and depression, from 26% to 43% (Jamil, Hakim-Larson, Farrag, Kafaji, & Duqum, 2002; Laban, Gernaat, Komproe, Schreuders, & de Jong, 2004).

Traumatic events can disrupt a person's schemas about the self, others, and the future, leading to emotional dysregulation and cognitive, affective, behavioral, and physical symptoms. Traumatic events, however, can also lead to adaptive changes such as improved well-being, resilience, and growth. Tedeschi and Calhoun (2004) proposed that posttraumatic growth occurs when trauma survivors emotionally process and cognitively reflect upon their experiences, striving to incorporate the story of their trauma and its aftermath into a new set of beliefs, worldviews, and systems of meaning. This process of struggling with meaning-making and subsequent rebuilding of a more flexible cognitive framework manifests as posttraumatic growth, including more closeness with others, reevaluation of life priorities, and hope about new directions in life. Similarly, Janoff-Bulman (2004) proposed that three positive adaptations can occur when a traumatized person elects to confront and cognitively reappraise rather than avoid traumatic thoughts and feelings: developing strength through suffering, becoming psychologically prepared for future challenges, and reevaluating core existential beliefs. These adaptations are particularly likely when emotional processing occurs in a caring relationship (Janoff-Bulman, 2004).

Research on interventions for traumatized refugees is relatively new, but some case reports, qualitative studies, and both uncontrolled and controlled trials of interventions have been reported (Crumlish & O'Rourke, 2010; Nicholl & Thompson, 2004; Nickerson, Bryant, Silove, & Steel, 2011; Palic & Elkilt, 2011). In particular, narrative exposure therapy (NET) was developed to meet the mental health needs of victims of organized violence, especially when there are limited professional resources (Schauer, Elbert, & Neuner, 2005). This intervention fuses emotional processing, testimony, and expressive writing, by helping people construct detailed narratives of their life stories with a focus on their traumatic experiences. The combination of exposure to trauma cues within the context of a written life narrative serves to integrate and embed the experience into an organized autobiographical context and permits the survivor to process multiple traumatic events. Also, cultures that value oral tradition and history telling may find the narrative nature of this approach socially acceptable, thereby potentially countering the stigma associated with traditional mental health services. There is growing support for the value of NET in treating posttraumatic stress in survivors of organized violence, including refugees, across a variety of settings, ethnic groups, and providers (Robjant & Fazel, 2010). Although a few of the original studies of NET were randomized controlled trials with relatively large samples (Neuner et al., 2008;

Neuner, Schauer, Klaschik, Karunakara, & Elbert, 2004), most studies of NET have been uncontrolled or had small samples.

Interventions for posttraumatic stress, including NET, focus almost exclusively on reducing symptoms. Very few trauma interventions—and no studies of NET of which we are aware—have assessed their impact on promoting positive outcomes such as posttraumatic growth and enhanced well-being. Because NET helps victims of trauma process and integrate their traumatic experiences into their larger life narratives, and this is done in the context of a supportive, caring relationship, NET may facilitate cognitive rebuilding and meaning making, resulting in posttraumatic growth.

NET typically lasts up to 10 sessions, but research on expressive writing suggests that three sessions can improve health in people with unresolved stress (Frattaroli, 2006; Smyth, Hockemeyer, & Tulloch, 2008). In general, brief interventions, if effective, are less costly and more likely to be disseminated and implemented than longer interventions. Therefore, we adapted NET into a brief, 3-session version and conducted a preliminary randomized trial of brief NET versus waitlist control (brief NET offered after 4 months) on Iraqi refugees in the U.S. with posttraumatic stress. Changes in both positive indicators (posttraumatic growth and well-being) and symptoms (posttraumatic stress, depressive, and somatic) from baseline to 2-month and 4-month follow-ups were assessed. We hypothesized that, relative to controls, participants receiving brief NET would experience greater increases in growth and well-being and greater reductions in symptoms at both follow-up points.

Method

Participants

Participants were 63 Arabic-speaking adult Iraqi refugees who had resettled in southeast Michigan. To be included, participants reported that they had been “exposed to a violent or traumatic event related to being a refugee, to the war, or to sectarian strife”; and that they currently “were bothered by the event, thought about it repeatedly, or felt like they had not overcome it.” As shown in Table 1, the full sample had 35 women (55.6%) and 28 men (44.4%), averaged 48.2 years of age ($SD = 8.9$ years), and almost two-thirds were married. Most participants were Chaldean, a Christian minority in Iraq. Participants had been in the U.S. an average of 2.3 years ($SD = 2.3$).

Table 2 lists the frequency of traumatic events experienced by our sample, as reported on the Harvard Trauma Questionnaire (HTQ; Mollica, McDonald, Massagli, & Silove, 2004). Most participants experienced multiple events (sample $M = 19.8$, $SD = 6.4$), and many were exposed to combat, witnessed murder, had loved ones kidnapped, were tortured, and lost family and friends to violence. Fully 85.7% of the sample ($n = 54$) had a mean score on the core PTSD symptoms of the HTQ of 2.5 or greater, indicating probable PTSD, and the other nine participants scored relatively highly (a minimum of 2.09). Both baseline depression and somatic symptoms were elevated well into the clinically significant range, and well-being was substantially below that of healthy populations.

Measures

Posttraumatic growth was assessed with the Post-traumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996), which was translated to Arabic and back-translated by a 3-person panel of bilingual mental health professionals. The PTGI assesses “the degree to which this change occurred in your life” in five areas: greater appreciation of life and changed sense of priorities; warmer, closer relationships with others; a greater sense of personal strength; recognition of new possibilities or paths for one’s life; and spiritual development. The 21 items are rated from 0 = *I didn’t experience this change at all* to 5 = *I experienced to a very great degree*. The scale demonstrates good convergent and discriminate validity (Tedeschi & Calhoun, 1996), and internal consistencies in this sample at baseline, 2 months, and 4 months were Cronbach’s $\alpha = .93, .96$, and $.95$, respectively.

Psychological well-being was assessed with the World Health Organization’s Well-being Index-Arabic translation (WHO-5; Bech, 1998), which assesses positive mood, vitality, and interest during the last 2 weeks. The five items are rated from 0 = *at no time* to 5 = *all of the time*. This sample’s α were $.87, .94$, and $.94$.

Posttraumatic stress symptoms were assessed by using two sections of the HTQ, which was previously translated into Arabic and used with Iraqi refugees in the U.S. (Shoeb, Weinstein, & Mollica, 2007). Part A assesses the occurrence of 42 traumatic incidents and was completed only at baseline. Part D contains 16 core PTSD symptoms (per the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition) and 29 additional items developed specifically to measure other culturally relevant PTSD symptoms among Iraqis. All items are rated from 1 = *not at all* to 4 = *extremely* with respect to the past week, and a mean of posttraumatic stress symptoms was calculated for all 45 items; a mean of 2.5 or greater on the 16 core PTSD items suggests a diagnosis of PTSD (Mollica et al., 2004). This sample’s α were $.93, .97$, and $.97$.

Depressive symptoms were assessed by using an Arabic translation (Ghareeb, 2000) of the 21-item Beck Depression Inventory-II (Beck, Steer, & Brown, 1996), which assessed symptoms over the past 2 weeks on a 0 to 3 scale. The Arabic version of the Beck-II demonstrated reliability and validity in samples in 18 Arabic countries (Alansari, 2006). This sample’s α were $.86, .92$, and $.90$.

Somatic symptoms were assessed by using the 15-item Patient Health Questionnaire (PHQ-15; Kroenke, Spitzer, & Williams, 2002), which assessed somatic symptoms over the last 4 weeks. Items are rated 0 = *not bothered at all*, 1 = *bothered a little*, or 2 = *bothered a lot*. The scale demonstrates good test-retest reliability, internal validity, and convergent and discriminate validity (Kroenke et al., 2002). The scale was translated by a bilingual psychologist in consultation with a bilingual health researcher and back translated. This sample’s α were $.80, .83$, and $.87$.

Satisfaction with and benefit from treatment was assessed at the 4-month follow-up, at which point participants in the brief NET condition provided two ratings (1 = *not at all* to 10 = *very*): how beneficial treatment was to them, and how satisfied they were with treatment. They also responded to “How did your physical and emotional symptoms change as a result

of the treatment?” (*very much worse, much worse, minimally worse, no change, minimally improved, much improved, very much improved*).

Procedure

The study was approved by the Wayne State University Institutional Review Board and registered with clinicaltrials.gov (NCT01288690); screening began in November 2010 and follow-up assessments were completed by July 2012. Recruitment occurred through community agencies for refugees, which typically provided supportive counseling and psychosocial services (housing, language training), but not intensive therapy for posttraumatic symptoms. Recruitment strategies included agency staff informing their clients about this study, posting flyers, and making presentations at English language classes. Potentially interested participants contacted the study team. One of two female, Arabic-speaking doctoral students in clinical psychology conducted the telephone screening. The same assistant also conducted the baseline assessment session and served as the brief NET therapist with that participant. Assistants met participants at the participant's preferred location (typically the home, but sometimes a church or community center), where written informed consent was obtained. Participants then completed the baseline interview and assessment measures. A few days later, the assistant telephoned the participant and asked if he or she was willing to continue participating in the study. If so, the assistant (heretofore blind to condition assignment) opened a sealed envelope and informed the participant when he or she would be getting the treatment. The computerized scheme was stratified by recruitment site (agency) and assistant, and randomized the two conditions in blocks of six in a 2:1 ratio (intervention: control), which ensured a larger sample in the intervention condition to support later analyses of predictors. A total of 41 participants were randomized to brief NET, and 22 to the waitlist control condition.

Participants assigned to brief NET met with the therapist for three weekly sessions, in a private room, at the participant's preferred location (as noted above). All participants (including controls) were mailed follow-up assessment measures and stamped, return envelopes 2 months and 4 months after baseline. Participants were prompted by telephone to complete the measures if not returned within 2 weeks. Participants received \$35 for the intake interview and baseline assessment, and \$20 for each of the two follow-up assessments.

For the brief NET intervention, the therapists followed a structured manual (Schauer et al., 2005), which was adapted to three sessions, lasting 60 to 90 minutes each. The therapists received training and weekly supervision by a licensed psychologist with expertise in exposure therapies. Session 1 started with psychoeducation, including normalization of the participant's experience and explanation of the therapy rationale. The participant then constructed a chronological narrative of his/her life, starting with highlights of childhood and then focusing on traumatic experiences during adulthood. At these trauma points, the therapist encouraged the participant to describe sensory, cognitive, and emotional experiences. The participant proceeded chronologically with the story until the next traumatic experience, at which point the trauma processing was repeated. The therapist allowed time for the participant to habituate emotionally (hence the variable session length).

While the participant was narrating, the therapist handwrote the story and later transcribed it on a computer (in Arabic) before the next session.

In Session 2, the therapist read aloud the narrative, which the participant revised or enhanced. The process of constructing the life narrative continued, again focusing on processing traumatic experiences. Session 3 involved re-reading the participant's narrative and discussing his/her fears, goals, and hopes for the future. A paper copy of the narrative was provided to the participant at the session's end.

Data Analysis

The targeted sample size was based on a power analysis in which we sought an interaction between condition and time. We conservatively predicted a medium effect size (for an ANOVA model, $f = .20$, based on the review of NET studies by Robjant & Fazel, 2010), which indicated that a sample of 52 would yield power of .80. The success of randomization was examined by comparing the two experimental groups on demographics and baseline levels of the outcome measures, using chi-square and t tests. To assess for biased attrition, we compared demographics and baseline levels of outcome measures between those who provided all follow-up data and those who did not.

Primary analyses of the effects of brief NET versus control on the outcome measures were conducted using mixed design (between-within) repeated measures analyses of variance (RM-ANOVA), assessing between-condition differences from baseline to follow-up. The two follow-up assessment points were analyzed separately. If there was a significant condition $\times$ time interaction, within-condition, paired t -tests were conducted to determine how each condition changed over time. Because we had directional hypotheses about the effects of brief NET versus control, we used one-tailed tests with α set at .05 for the between-condition comparisons; two-tailed tests were used for within-condition and all other analyses. Our primary analyses were "intent-to-treat," meaning that we retained all 63 participants, regardless of how many intervention or follow-up assessment sessions they completed. Any missing follow-up data were replaced using the multiple imputation procedure in SPSS 20.0.

We calculated effect sizes both within and between conditions. Within each condition, Cohen's d was calculated at each follow-up time point by subtracting the baseline mean from the follow-up mean and dividing by the standard deviation of that condition's baseline mean. The between-condition effect size (ES) was calculated at each follow-up point using the following equation: $((\text{Brief NET follow-up } M - \text{baseline } M) - (\text{control follow-up } M - \text{baseline } M)) / SD \text{ of the pooled change scores}$.

Results

Table 1 presents background sociodemographic data, and Table 3 presents the outcome measures at all three timepoints. The two conditions did not differ significantly on any demographic or baseline outcome measure, suggesting successful randomization.

Figure 1 presents the flow of participants through the trial. Fully 39 of the 41 participants (95.1%) assigned to brief NET completed all three sessions. (One participant became employed after randomization and could not participate in treatment, and another completed only one session.) Of the 63 randomized participants, 62 (98.4%) provided some follow-up data; one person (in brief NET) was lost to both follow-ups. Most participants ($n = 53$; 84.1%) completed both follow-up assessments, but 9 participants completed only the 2-month ($n = 6$) or 4-month ($n = 3$) assessment. The two conditions did not differ on the percentage of participants missing a follow-up ($p = .28$), and participants who completed both follow-ups did not differ on demographics or baseline values from participants who missed a follow-up (results not shown).

Table 3 presents the results of between- and within-condition analyses. Analyses of posttraumatic growth and well-being indicated no condition main effects for either variable (as expected), but there were significant time effects for well-being at 2 and 4 months ($p = .045$ and $p = .001$, respectively), indicating an increase in well-being for the sample overall. More importantly, there were significant condition by time interactions for both posttraumatic growth and well-being at both follow-up points. Brief NET increased posttraumatic growth and well-being more than the control condition, with between-condition effect sizes that were medium to large in magnitude. Within conditions, brief NET led to significant increases in growth at 4 months, and increases in well-being at both 2 and 4 months, while the control condition had no significant change. Thus, brief NET led to improvements in posttraumatic growth and well-being for at least 4 months.

We next examined the symptom outcomes, which showed a somewhat different pattern of effects. As expected, there were no condition main effects. There were, however, main effects of time for all three symptom measures at both follow-up points (all $p < .005$, except posttraumatic stress symptoms at 2 months, $p = .054$), suggesting that symptoms decreased across time for the sample overall. Importantly, these time main effects were specified by significant condition by time interactions, but only at the 2-month follow-up, and only for posttraumatic stress and depressive symptoms. Between-condition effects were medium in magnitude. Within-condition, brief NET led to significant, medium effect reductions in posttraumatic stress and depressive symptoms from baseline to 2 months, while the control condition showed little change. At 4 months, brief NET maintained or had slightly greater decreases in symptoms from baseline, with medium to large effects within-condition. The control condition, however, also had reduced symptoms (small to medium effects) by 4 months, which eliminated any differences between conditions at this point. Somatic symptoms also decreased significantly over time within the brief NET condition, but this change did not differ significantly from reductions in somatic symptoms that occurred among controls.

The mean reported satisfaction with brief NET was very high ($M = 8.75$, $SD = 1.71$), and significantly higher than the reported benefit of treatment ($M = 7.53$, $SD = 2.09$), paired $t(37) = 4.57$, $p < .001$. Regarding change in symptoms, no brief NET participants reported their symptoms were very much worse or much worse following treatment; however, two participants (5.6%) reported being minimally worse, 19.4% reported no change, 27.8% were minimally improved, 19.4% were much improved, and 27.8% were very much improved.

Discussion

Compared to waitlist controls, three sessions of brief NET increased posttraumatic growth and well-being 2 and 4 months later, with medium to large effects, among highly traumatized and symptomatic Iraqi refugees in the U.S. Brief NET also reduced posttraumatic stress and depression symptoms after 2 months, with medium-sized effects. Symptoms continued to decrease to the 4-month assessment, but the control condition's symptoms improved at 4 months, eliminating difference between conditions.

This pattern of changes suggests some difference between positive outcomes and symptoms and the value of assessing both domains. Participants' reports of satisfaction and benefit from treatment seem to support this. Satisfaction was experienced more than benefit, and the former may relate to positive appraisals of the treatment experience, whereas the latter relates to symptom reduction. Nonetheless, by study end (4 months) almost half of the intervention group (47.2%) reported that their symptoms had improved much or very much, which is certainly clinically meaningful.

The finding that brief NET improves posttraumatic growth adds to the body of research about potential positive effects of recovery from trauma. Most research on posttraumatic growth has been naturalistic and descriptive; however, our experimental findings support those of a few other studies, which show that an exposure or emotional processing intervention can directly promote posttraumatic growth (e.g., Hageraars & van Minnen, 2010; Slavin-Spenny, Cohen, Oberleitner, & Lumley, 2011; Smyth et al., 2008). Brief NET may shift people from fearful avoidance to courageous confrontation with painful emotional memories. This decreased experiential avoidance enhances one's self-efficacy and supports cognitive processing of the trauma and the development of new meaning or schemas. Moreover, the process of narrating traumatic stories with another person can foster validation and connectedness, which are hypothesized to facilitate posttraumatic growth (Janoff-Bulman, 2004). Indeed, a core tenet of NET is that narrating to and with another person is central to recovery because it allows the survivor to share the burden of the trauma and have another person bear witness to the suffering (Schauer et al., 2005). Brief NET also enhances well-being, creating a positive mood, vitality, and engagement, which are maintained for at least 4 months.

The effects of the intervention on symptoms of posttraumatic stress and depression are considered medium in magnitude, which may have some clinical value, especially because the intervention was only three sessions, and the sample was highly traumatized. Yet this effect is somewhat smaller than found in some prior studies of NET (Neuner et al., 2008; Neuner et al., 2004) and also limited to the first 2 months post-intervention; beyond that, controls also showed symptom improvement. We suspect that somewhat weaker symptom improvement is due to the limited "dose" of three sessions rather than up to 10 sessions as typically conducted with NET, coupled with the relatively severe and often long-standing trauma symptoms in the sample. Yet, it is not known whether the unexpected symptom reduction among controls reflects veritable improvement due to healing with the passage of time, or whether it is an artifact due to repeated assessments, hope for ending the waiting, or

wishing to show the researcher that they were feeling better by the study's end. We conclude, however, that brief NET at least speeds symptom reduction.

Although the sample was self-selected and may not reflect the larger Iraqi refugee community, there was very high engagement in, and low attrition from, brief NET and the follow-up assessments, which is particularly noteworthy given the stigma about mental health treatment often reported by Middle Eastern people. Indeed, NET may have less attrition than some other interventions for trauma (Hembree et al., 2003; Resick, Nishith, Weaver, Astin, & Feuer, 2002; Schnurr et al., 2007). The oral narration nature of NET fits many cultures and renders treatment less threatening. Moreover, participants may view constructing their narratives as empowering, perhaps because doing so enables their voices to be carried by others.

We offer additional observations about implementing NET in this population, which were derived anecdotally from what our patients shared with the therapists, as well as from our knowledge of the history of U.S.-Iraqi relations and U.S. policy toward Iraqi refugees. A number of participants expressed conflicted resentment toward the U.S. government, viewing its invasion of Iraq as unleashing the violence that traumatized them and forced them to flee the country they loved, and then—paradoxically—resettling them into the U.S. Also, our participants were usually unemployed and often experiencing financial hardships due to language barriers, a very poor local economy, and national policies that substantially limit benefits to refugees. Interestingly, most trials of NET have been conducted in refugee camps or Western European countries; the latter appear to be more socially and/or economically supportive than the U.S. for Iraqi refugees. These observations suggest the possibility that being a refugee in a country that one perceives as responsible for one's victimization, especially if social services are limited, generates conflicted feelings and resentment that might exacerbate the original trauma and hinder successfully emotionally processing it. This hypothesis, of course, needs testing.

This study has several limitations in addition to restricted generalizability beyond Iraqi refugees in the U.S. who chose to participate in this clinical trial. First, we did not thoroughly review participants' treatment history, nor did we formally diagnose PTSD or include only patients with this diagnosis, which limits comparisons with some other studies of NET. Most of our participants, however, were highly traumatized, and the vast majority had a probable diagnosis of PTSD. Second, although randomization to a wait-list condition controlled for some factors, we cannot rule out the possibility that the positive outcomes of brief NET stemmed from other nonspecific factors or biases, such as simply meeting with a caring person, having the same assistant conduct the screening, baseline assessment, and therapy; or demand characteristics to report benefits on self-report measures. Third, we did not record brief NET sessions, in part because we felt that doing so would be too intrusive for this traumatized, refugee population; therefore, we were unable to formally monitor or assess treatment competence or adherence and relate these to outcomes. Fourth, a longer follow-up would have illuminated the duration of the effects and the reliability of the symptom improvement in the controls. Finally, the analyses conducted multiple tests without adjustment for experiment-wide error and used a liberal criterion for significance, given the directional hypotheses. Yet the goal of this preliminary study was to explore

potential benefits with a brief version of an intervention applied to a novel population, and statistical power was limited by the modest sample size. Clearly, these findings must be replicated in multiple contexts before firm conclusions can be drawn about the effectiveness of the intervention.

Future research should directly compare NET with established trauma-focused therapies to clarify whether NET is uniquely beneficial for survivors of organized violence, or if NET just repackages therapeutic elements, such as telling one's trauma story and emotionally processing thoughts, feelings, and sensations. Research should also investigate whether different trauma types, such as organized violence and torture versus betrayal traumas or traumatic loss need different interventions. Finally, intervention studies should include measures of adaptive outcomes, which would parallel the larger trend to view trauma not just in terms of pathology, but also with respect to resilience, recovery, and growth.

In conclusion, this study demonstrates that a brief version of NET increases posttraumatic growth and well-being over 4 months and accelerates reduction of posttraumatic stress and depression symptoms, relative to no treatment. This study highlights the value of a brief, focused intervention for traumatic stress in Iraqi refugees, and underscores the importance of assessing the effects of trauma interventions on both positive outcomes as well as symptoms.

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Figure 1.
Flow chart of participants through the study.

Table 1

Sociodemographic Variables for the Brief NET and Control Groups

Variable	Brief NET (<i>n</i> = 41)		Control (<i>n</i> = 22)	
	<i>n</i>	%	<i>n</i>	%
Gender				
Men	15	36.6	13	59.1
Women	26	63.4	9	40.9
Marital status				
Married	27	65.9	15	68.2
Not married	13	31.7	7	31.8
Education				
Primary school	15	36.6	3	13.6
Secondary school	17	41.5	11	50.0
Post-secondary	9	21.9	7	31.8
Ethno-religious group				
Catholic-Chaldean	32	78.1	18	81.8
Other (Muslim/Mandean)	9	21.9	4	18.2
Country before U.S.				
Iraq	1	2.4	3	13.6
Syria	25	61.0	10	45.5
Jordan	6	14.6	4	18.2
Turkey	6	14.6	2	9.1
Other	3	7.3	3	13.6

Note: NET = narrative exposure therapy.

Brief NET and control condition did not differ significantly on any variable.

Table 2

Traumatic Events Experienced by the Full Sample of Iraqi Refugees

Type of traumatic event	<i>n</i>	%
Oppressed because of race, ethnicity or religion	58	92.1
Exposed to combat situation (explosion, mines, shelling)	58	92.1
Witnessed the destruction of religious shrines	47	74.6
Witnessed murder	43	68.3
Witnessed someone being physically harmed	42	66.7
Property looted, confiscated or destroyed	41	65.1
Murder or violent death of family or friends	41	65.1
Witnessed rotten corpses	38	60.3
Kidnapping of family or friends	37	58.7
Witnessed arrest, torture or execution of religious leaders	29	46.0
Witnessed torture	26	41.3
Physically harmed	24	38.1
Imprisoned arbitrarily	18	28.6
Witnessed mass execution of civilians	17	27.0
Kidnapped	17	27.0
Tortured	16	25.4
Serious physical injury from combat situation/mine	16	25.4
Taken as a hostage	11	17.5
Sexually abused or raped	4	6.3

Note. *N* = 63

Table 3
Within- and Between-Condition Comparisons of Outcomes from Baseline to 2-month and 4-month Follow-ups

Outcome measure	Brief NET Condition (<i>n</i> = 41)				Control Condition (<i>n</i> = 22)				Condition × Time Interaction			
	Baseline		2-month		Baseline		2-month		2-month		4-month	
	<i>M</i> (<i>SD</i>)		<i>M</i> (<i>SD</i>)	<i>d</i>	<i>M</i> (<i>SD</i>)		<i>M</i> (<i>SD</i>)	<i>d</i>	<i>M</i> (<i>SD</i>)	<i>d</i>	<i>M</i> (<i>SD</i>)	<i>ES</i>
Posttraumatic growth	45.78 (23.85)		51.22 (25.40)	0.23	58.18 (22.44)	0.52**	41.86 (21.73)	-0.26	39.58 (13.53)	-0.36		0.83***
General well-being	4.93 (5.02)		8.18 (6.27)	0.65**	9.55 (6.76)	0.92***	5.95 (5.50)	-0.02	7.12 (4.91)	0.24		0.54*
Trauma symptoms	2.79 (0.49)		2.60 (0.66)	-0.39**	2.55 (0.66)	-0.50**	2.76 (0.48)	-0.01	2.65 (0.52)	-0.26		-0.32
Depressive symptoms	33.91 (10.46)		27.46 (13.54)	-0.62***	25.08 (13.27)	-0.84***	31.45 (12.08)	-0.17	27.38 (10.85)	-0.53**		-0.27
Somatic symptoms	19.40 (6.12)		16.16 (6.24)	-0.53**	15.90 (6.51)	-0.57***	17.97 (5.71)	-0.22	16.71 (4.76)	-0.41		-0.13

Note. *N* = 63. *d* is the within-condition effect size ((post *M* – baseline *M*) / baseline *SD*).

ES is the between-condition effect size ((Brief NET follow-up *M* – baseline *M*) – (control follow-up *M* – baseline *M*) / *SD* of the pooled change scores).

*
p < .05.

**
p < .01.

***
p < .001.

Tests were 2-tailed for within-condition effects and 1-tailed for condition × time interactions, given the directional hypotheses.

The F-tests of the condition × time interactions had degrees of freedom of 1,61.

The data presented, and analyses conducted, are for the full sample of 63 participants; missing follow-up data were replaced with multiple imputation.