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An initial evaluation of narrative exposure therapy as a treatment of posttraumatic stress disorder among Sudanese refugees in Cairo, delivered by lay counselors

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Abstract

Background: The growing worldwide refugee crisis highlights the needs for increased access to mental health services, including in the large urban cities in the Middle East to which refugees are frequently displaced and in which access to such services is limited. The current study offers an initial evaluation of narrative exposure therapy as a treatment for posttraumatic stress disorder among Sudanese refugees in Cairo, delivered by lay counselors. Sudanese refugees with no prior background in counseling were given 27 h of training in narrative exposure therapy. They then delivered this to seven members of the same refugee community with a diagnosis of posttraumatic stress disorder at a local community center, and this was evaluated using a pre-post design and a focus-group with the intervention recipients.

Results: Despite the small sample size, over the course of the intervention there was significant decrease in trauma and anxiety symptoms, and a close to significant decrease in depression. Moreover, the focus group participants generally spoke positively about their experiences.

Conclusions: To the best of the authors' knowledge, this is the first study to examine the viability of lay counselors delivering narrative exposure therapy to refugees with posttraumatic stress disorder in a complex urban setting. The findings suggest that this approach has promise and support the case for a randomized control trial of narrative exposure therapy delivered in this manner in such a setting.

Keywords: PTSD, Refugees, Narrative exposure therapy, Lay counselors, Trauma

Background

Sudan has been the country of origin of a great number of refugees since the mid 1980s, being the largest country in Africa and one of the poorest in the world, with a long history of armed conflict [17, 18]. Collectively, studies have found high rates of psychopathology among refugees, particularly posttraumatic stress disorder (PTSD) and depression [24]. With Sudanese refugees in specific, the levels of depression and anxiety are elevated and correlated to their PTSD symptoms [14]. South Sudan has a long history of civil war and political instability, which has resulted in huge numbers of atrocities and violence and mass forced migration, with previous studies identifying the high exposure to continuous traumatic events [17, 18]. Furthermore, studies that have looked at the mental health of Sudanese refugees suggest that their trauma grows due to the harsh socioeconomic conditions post-flight [23]. This suggests that mental health

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for Sudanese refugees is negatively affected starting pre-flight in the war zone and continuing in transit nations such as Egypt.

Psychotherapeutic interventions for refugees

Even though PTSD is increasing in refugee populations, including among Sudanese refugees, few studies have examined possible interventions and treatments with these populations [10]. However, among the therapies that have demonstrated effectiveness is Trauma Focused Therapy developed by Lira and Weinstein [5]. TFT involves the replacement of the traumatic memory related to the feeling of fear, with new learning attempting to ensure that related indications are no longer signals of threat [19]. TFT has been found to be effective for refugees with PTSD from a single-incident, but there is an absence of evidence for its effectiveness for those who have PTSD connected to multiple traumatic incidents [19].

Cognitive behavior therapy has been demonstrated to be powerful when used as a treatment for PTSD; however, refugees often need assistance in the context of ongoing threat, such as being detained, living in camps, fleeing persecution, or living with uncertainty for the future [19]. Moreover, CBT typically requires many sessions and therapists with significant training to deliver, and so is frequently not available to refugees. An alternative therapy that is arguably more feasible in such settings is narrative exposure therapy.

Narrative exposure therapy

Schauer et al. [20] developed narrative exposure therapy (NET) as a short-term treatment for PTSD for survivors of armed conflict, political violence, and torture, incorporating many of the exposure practices of existing models whilst also documenting the traumatic events that occurred. The impact of NET has been promising in both PTSD and depression in refugees, both inside and outside of their countries, and also among former political prisoners [10].

NET is a combination of CBT and testimony therapy. Testimony therapy aims to restructure fragmented autobiographic memories of the traumatic event. Through this reconstruction, emotional and cognitive processing of the event may occur to form an organized narrative of the event [21].

Four advantages of using NET include the use of lay counselors, storytelling, the participatory nature of the therapy, and the limited number of sessions needed for therapy to be effective. The use of lay therapists, in other words teaching local community members and non-professionals to implement such therapies themselves within their community, is arguably key for a realistic, sustainable intervention in this context. This addresses the gap between high numbers of individuals in need of psychological assistance in affected communities and the lack of qualified mental health professionals or counselors [16]. Additionally, storytelling is an oral tradition that is prevalent in many African cultures, and so the use of detailed narration of autographic memory fits well. NET also includes an educational dimension, educating participants on how avoidance plays a major role in inhibiting treatment is given before therapy begins and is likely to reduce treatment dropout [10].

The effectiveness of NET

There is a growing body of support for NET as an effective and acceptable intervention for refugees with PTSD, though to date, only a few studies have been randomized control trials with a relatively large sample [11, 15–18]. Neuner et al. [17, 18] conducted the first randomized control trial, with three groups of Sudanese refugees in a Ugandan refugee camp. One group received NET, one supportive counseling and the third psychoeducation. The group that received NET was the only one that demonstrated an absence of PTSD symptoms at 1-year post intervention. They concluded that NET appears to be a feasible and effective intervention for Sudanese, Rwandan, and Somalian refugees with PTSD who are living in refugee camps. However, while the study employed lay counselors, all were doctoral level or graduate students of Western origin and employed the use of local research assistants as translators. The study was conducted by well-trained psychologists and their graduate students. The authors also commented that acceptance of the intervention may in part have been due to the desire of refugees to talk to a foreigner.

Neuner et al. [16] tested the applicability of delivering NET by lay counselors in a refugee camp in Southern Uganda. This study included 277 Rwandan and Somalian refugees diagnosed with PTSD, randomly assigned to one of three groups, NET, trauma counseling (TC), or no treatment. Assessment and follow up took place at baseline, immediately post-therapy, and 6 months post-therapy. A clinically significant reduction in symptoms for those receiving either active treatment compared to the "no treatment" group was observed immediately post-intervention and maintained 6 months later. The authors concluded that effective psychotherapy could be carried out by lay counselors within refugee populations after only 6 weeks of training. During this study, significantly fewer participants dropped out of the NET treatment, than trauma counseling. The lay counselors were trained over a period of 6 weeks and came from varying educational backgrounds, the authors commented that one limitation was illiteracy, and that translators were

needed. It is worth noting that the translators, being refugees, may also be psychologically vulnerable.

More recently, research has focused on the effectiveness of NET in treating refugees resettled in industrialized or high-income countries in usual psychiatric settings. For example, Neuner et al. [15] compared NET offered within the German health care system to asylum seekers resettled in Germany with a treatment as usual (TAU) control, and found that NET resulted in significant improvement compared to TAU. NET was delivered by highly trained clinical psychologists and with the use of interpreters in this study. Similarly, Stenmark et al. [22] examined the effective of NET with 81 refugees and asylum seekers in Norway, who all met DSM-IV criteria for PTSD. As before, compared with TAU, NET gave significant symptom reduction.

A further randomized control trial, examining the effectiveness of brief NET in Arabic (3 sessions) with a sample of Iraqi refugees who had been resettled in the US, was conducted by Hijazi et al. [11]. The findings were that those in the NET group displayed symptom improvement 2 months post intervention in PTSD, depressive and somatic symptoms, compared to the wait list control group. However, this effect disappeared at four month follow up, with both groups doing equally well. The authors suggest that the small dosage may be a contributing factor, as usually NET is carried out over six to ten sessions.

Study rationale

There is promising evidence from randomized control trials that NET is effective when delivered by well-trained professionals, in both camps and for those resettled in high-income countries [11, 15, 17, 18, 22]. Furthermore, promising results have been demonstrated when NET is delivered by lay counselors in refugee camps [16]. However, currently, there is a lack of research on the effectiveness of NET delivered by non-psychological trained lay counselors from the same origin as the target refugee population, residing in urban settings in a low-income country, in a complex metropolis such as Cairo. In such settings, there is an overwhelming lack of access to trained professionals and resources, as well as considerable language and cultural barriers. In such settings, NET would need to be adapted in terms of language and cultural appropriateness, providing a further rationale for the value of further research on NET.

Therefore, it is essential to identify effective interventions that can be delivered by local members of the community without mental health formal education or training (cf. [17, 18]) and, if possible, without the need for translators.

Therefore, the following study aimed to be the first step of the process of examining the feasibility, acceptability, and effectiveness of training lay counselors to deliver a cultural adapted version of narrative exposure therapy to Sudanese refugees living in Cairo with a diagnosis of PTSD.

Methods

Participants

Lay counselors

Of 15 potential trainees, 10 were recruited into the training from the community center, identified by the chairperson. Of the five who were not, one was excluded due to misunderstanding what the training was for, and was looking to improve their English proficiency only, two were excluded due to suffering their own mental health issues, and two were unable to commit to the time to complete the training due to child care. Those who were recruited into the training were assessed with the same measures used throughout the study, to ascertain that there were no current symptoms of PTSD, depression or trauma.

All trainees were Sudanese refugees who attended the same community center, and all were bilingual, speaking both English and Sudanese Arabic proficiently. The trainees all identified as Christian, from the Nuba mountains in the Kordofan region, straddling the North and South Sudan political lines. Of the ten trainees, three were female and seven were male, aged between 26 and 42 years old. All were employed, three as teachers, two as janitors, two as waiters, one as a translator, and two as home help. None had any background working in mental health or counseling professions.

Intervention participants

Adult Sudanese refugees were recruited by word of mouth, community meetings, and posters advertising the free therapy, which was to be provided at the community center in a private room and confidentially. Twelve people underwent initial screening, five of whom did not meet inclusion criterion of meeting DSM-V criteria for PTSD, as assessed by the researcher, a clinical psychologist in during clinical interview. One of the excluded participants displayed symptoms of psychosis (and was referred to appropriate psychiatric care), another was heavily using substances, to the extent that it was felt that therapy would not be possible, and a further three did not meet PTSD criteria according to DSM-V.

The final study sample consisted of five female and two male Sudanese refugees from the same area as the trainees. All of the participants identified as Christian, four as employed and three as unemployed. Three of the participants were widowed, one married, and three identified as

single. The age of the participants ranged from 28 to 39 years old, with a mean age of 31.

Design

This pilot study adopted a pre-post design, in which measures of PTSD, depression, and anxiety were taken before and after participants received NET, delivered by lay counselors. A focus group was also held about 6 months after the intervention ended.

Translation

All training materials, including the instructions and examples for Narrative exposure therapy (with permission from the authors), the measures and consent, and information sheets, were translated and provided in both Sudanese Arabic and English. All translations were back translated by a second bilingual native Sudanese Arabic and English speaker, similarly trained to work in psychosocial services in order to ensure correct understanding of psychological and therapeutic terminology. Prior to translation, a focus group was carried out among members of the Sudanese community group to ascertain the adaptability and appropriateness of the NET materials, as well as the assessment materials, for use among this population. To date, there are no standardized versions of any of the materials in Sudanese Arabic.

Lay counselor training

The training was planned to take part in the evenings of weekdays at the community center to accommodate the work schedules of the trainees (as well as the PI and translator). The original plan was that training would be carried out from 6 to 9 pm, three times a week, over a 3-week period. However, due to a large number of scheduling problems, the training took place over 2 months. Many of the trainees were delayed for the training sessions due to three main reasons, work commitments taking longer than expected, traffic in Cairo, issues relating to their refugee status, and, particularly for the female trainees, child care. The training followed a group format and so training started only when all trainees arrived. It was delivered in English by the first author and simultaneously in Sudanese Arabic by the project translator, who was a professionally trained Sudanese refugee who had received training as an interpreter specialized in psychosocial services through a training institute in Cairo and had been recommended to assist with the project due to his experience in the field.

After training, the lay counselors provided NET to clients under weekly supervision by the first author.

Intervention

Cultural adaptation

Sudan is part of the Middle East North African region (MENA), and the predominant language is Arabic. A review of 22 psychosocial and mental health treatment studies in the Middle East by Gearing et al. [8] identified 85% more barriers than levers to treatment efficacy. They summarized that successful treatments must consider the following nine issues: lack of awareness, gender issues, stigma, poor language competency of caregivers, financial barriers, lack of transportation, diagnosis/treatment misunderstanding, medical versus traditional models, and a mistrust of mental health services. The current study aimed to consider all of these issues when adapting the NET model and the assessments used, both linguistically and culturally. This process was aided by consulting about the study and intervention with a focus group of local community members, both male and female ranging between the ages of 23 and 52 years old.

NET by nature is a treatment developed for use with refugees and has predominantly been used in similar geographical areas. However, there were some phrases and concepts that needed to be changed to make sense linguistically and culturally. All those who took part in the study were Christians from the Moro Nuba tribe of South Sudan, reducing the need to consider sub cultures within the group, as advised by Gearing et al. [8]. The female members of the focus group all mentioned the issue of gender-based violence and so it was agreed that there should be a mix of lay counselors in terms of gender and that females should be seen by female counselors only.

The issue of stigma and awareness was raised not only during the focus group but during the community group meetings, and in discussions with the community group leaders. The stigma around seeking psychological support at a professional clinic was raised frequently, as well as a lack of accessibility for psychological support for the community within Cairo; NET was deemed by all in discussions as an acceptable intervention that may address both of these issues.

One of the most significant barriers that NET delivered by lay counselors in this population can overcome is the financial barrier to accessing services; this is particularly relevant to any refugee residing in Cairo, where there is an absolute lack of services freely available. Furthermore, by delivering the intervention within local community centers, through fellow refugees who speak with the same mother tongue, the key informants felt that the intervention would be more appealing, appropriate and accepted by the local population. This was also thought to be another benefit of such an intervention being

delivered in such a way, in resolving the issue of lack of transportation.

The NET delivered in this study followed the protocol of Neuner et al. [17, 18]. Each participant was assisted by the lay counselor to construct a chronological narrative of his or her life, focusing on the traumatic events in particular. After the initial screening, those who met criteria for PTSD were invited to take part in the intervention. Participants completed the Vivo Event Checklist for War, Detention and Torture experiences [21], and were oriented to the intervention. which involved attending for sessions once a week for a period of 6 weeks. The intervention began with the individual and the counselor creating a time line, using materials such as rope to signify the lifeline, rocks to represent bad events, and flowers to represent good ones. The participant was asked to fill the timeline as much as possible and also to include their hopes for the next years to come. Fragmented traumatic memories were integrated into a coherent narrative and the counselors used techniques including active listening, empathy, congruency, and unconditional positive regard, to enable the participant to explore in depth the experiences they had survived. The was focus was not just on a single traumatic event, but rather could encompass as much of the lifespan as seemed helpful. At the end of the intervention, each participant was given their written biography. For those who were unable to read, a recording was offered during the last session (this was either on their mobile phone or of a trusted loved one).

Measures

Translation

All the measures were translated into Sudanese Arabic and the translation was checked and back translated into English by professional native bi-lingual Sudanese/English speakers who had received further training in providing translation for psychosocial interventions. Where appropriate, the internal consistency of the translated versions was checked using Cronbach's alpha.

Vivo Event Checklist for War, Detention, and Torture experiences

The Vivo Event Checklist for War, Detention, and Torture experiences [21] was used to assess experiences of organized violence at baseline. The measure is a 45-item questionnaire requiring yes or no answers as to whether an event has been experienced. Where events are answered positively, details are requested. This measure was only given at baseline.

Screen for Post-Traumatic Stress Symptoms

The Screen for Post-Traumatic Stress Symptoms (SPTSS) [3] is a 17-item brief self-report screen, which is not based on a single-reported trauma model, was employed to identify individuals who may be suffering from high levels of PTSD. This measure was chosen as more appropriate for individuals who have likely experienced multiple (and ongoing) traumas. While not a diagnostic tool, the items in the SPTSS closely mirror the criteria for PTSD in the DSM-IV. Items are written in a way to aid appropriateness for a wide range of populations, using colloquial language and simple terms. Scored on an 11-point (0-10) scale using a two-week time frame, the scale is scored using the mean of all items, thus the range of scores is from 0 to 10. In a validation study by Caspi et al. [4], normative data for clinical populations diagnosed with PTSD indicated a mean of 7.41, with a standard deviation of 1.72. For non-clinical populations, a mean score of 2.34 with a standard deviation of 2.17 was indicated. A cut-off point of 5.50 on the SPTSS maximized classification accuracy, with associated sensitivity and specificity rates of 89% and 89%, respectively. The internal consistency of the measure in the current sample was acceptable, Cronbach's alpha = .70. The SPTSS was administered pre and post the intervention.

Hospital Anxiety and Depression Scale

The Hospital Anxiety and Depression Scale (HADS) [26] is a self-report, 14-item brief report screen designed to assist clinicians and researchers in detecting possible clinical cases of depression and anxiety. The scale gives an overall or total score, as well as, a subscale for anxiety and depression. The range of scores is from 0–42 for the total score, and 0–21 for the anxiety and depression subscales. The clinical cutoffs for both the anxiety and depression subscales indicate scores of less than 7 are non-cases, scores of 8–10 indicate mild disturbance, 11–14 indicate moderate disturbance, and scores of 15–21 indicate severe disturbance. Based on normative data, a clinical population has a mean anxiety score of 8.6 (SD = 4.40), and a mean depression score of 5.9 (SD = 3.53). There are no clinical normative data for the total score (Atkins et al. [2]). For non-clinical norms, the respective scores are 6.14 (SD = 3.76) 3.68 (SD = 3.07), with a total score mean of 9.82 (SD = 5.98) [6].

While this measure has been translated into Arabic, many problems with its use have been reported, particularly with cultural understandings of phrases and activities that may or may not imply the likelihood of depression, likely leading to biased depression scores ([7, 13]; Alamri [1]). Therefore, a new translation was created, employing the approach described above. A reliability analysis was computed on the 14 item HADS using the data from the current population resulting in a reliable Cronbach's alpha of .73. The HADS was administered pre and post the intervention.

Data analysis

Non-parametric Wilcoxon matched pairs tests were conducted to compare pre and post intervention scores on the outcome measures. All outcome measures were also examined to see if individual participants' scores had reliably and clinically significantly changed over the course of NET [12]. Where existing clinically cut off scores were available, these were employed; see the "Results" section for more details.

Results

Outcome measures

SPTSS

Prior to NET, the participants' median score on the SPTSS was 8.1 with a range from 6.1 to 9.2. After NET, the median had decreased to 5.6, with a range from 3.7 to 6.4. A Wilcoxon matched pairs test revealed that this decrease was significant ($Z = -2.201$, $p < .028$).

Total HADS

Prior to NET, the participants' median score on the HADS was 30, with a range from 24 to 38. After NET, the median had decreased to 17, with a range from 12 to 26. A Wilcoxon matched pairs test revealed that this decrease was significant ($Z = -2.023$, $p < .043$).

HADS Anxiety

Prior to NET, the participants' median score on the anxiety scale of the HADS was 16.5, with a range from 14 to 21. After NET, the median had decreased to 8, with a range from 5 to 14. A Wilcoxon matched pairs test revealed that this decrease was significant ($Z = -2.032$, $p < .042$).

HADS depression

Prior to NET, the participants' median score on the depression scale of the HADS was 13.5, with a range from 10 to 17. After NET, the median had decreased to 9, with a range from 4 to 14. While the median decreased in the direction of symptom alleviation, a Wilcoxon matched pairs test revealed that this decrease was non-significant ($Z = -1.753$, $p = .080$).

Reliable and clinically significant change

As can be seen from Table 1, five of the six participants showed a reliable improvement in PTSD symptoms, as measured by the SPTSS, and three also showed clinically significant change, according to the clinical cut off of 5.5 [4].

With respect to HADS Anxiety (Table 2), four of the six participants showed both reliable and clinically significant change, when a clinical cut-off separating mild, moderate, and severe anxiety was employed [26]. For HADs Depression (Table 3), three participants showed reliable and clinically significant change. Here too, a cut-off to separate mild, moderate, and severe levels of depression was employed [26].

Table 1 Reliable improvement and clinically significant change on the SPTSS, per participant (scores have been rounded to the nearest whole number)

Pre-treatment	Post treatment	Change score	Reliable change	Clinically significant change
8	5	3	Improve	CSC
9	6	3	Improve	
9	5	4	Improve	CSC
6	4	3	Improve	CSC
7	6	1	No change	
8	6	2	Improve	

Acceptability and feasibility of NET

All of the participants completed treatment, with the exception of one male participant who was withdrawn from the study by the PI. This participant was exhibiting signs of psychosis and with permission from the participant an admission to hospital after the first session was secured. This 100% treatment completion rate is extremely rare, especially among refugees.

Participants' comments during the focus group held 6 months after the completion of NET further added to the sense that NET was effective for at least some participants. To illustrate, the following (translated) comments were made by three of the four focus-group participants, when asked "how, (if at all) did you benefit from these sessions?"

> *"Yes, for when I speak I feel relieved, and better than before".*

> *"Thanks God that you came and support us, now we feel better".*

> *"I used to cry a lot before, but now it's different, I don't cry every time something happened or while walking on the streets".*

The sense of feasibility and acceptability of the intervention was supported by participants' responses to the question: "for what reasons would you recommend (or not) the intervention to others?" For example, some participants knew others who they wanted to receive NET:

> *"We wanted to bring some people today, but we have been told not bring in anyone today, because this meeting for the old cases only".*

Table 2 Reliable improvement and clinically significant change in HADS Anxiety, per participant

Pre-treatment	Post treatment	Change score	Reliable change	Clinically significant change
14	14	0	No change	
15	12	3	No change	
21	8	13	Improve	CSC
20	8	12	Improve	CSC
18	5	13	Improve	CSC
14	8	6	Improve	CSC

Table 3 Reliable improvement and clinically significant change in HADS Depression, per participant

Pre-treatment	Post treatment	Change score	Reliable change	Clinically significant change
11	11	0	No change	
13	14	-1	No change	
17	8	9	Improve	CSC
14	10	4	No change	
14	7	7	Improve	CSC
10	4	6	Improve	CSC

"I brought a woman today, for she has many problems, but the doctor suggested only the cases to come today. We will be waiting until you decide to have new cases, then you can inform us".

When asked how was the experience of taking part in NET, respondents were positive and talked about the transition of from the emotional difficulty of initially re-experiencing their difficult memories, but how in time this not only improved but how they felt better:

"I used to cry a lot before, but now it's different, I don't cry every time something happened or while walking on the streets".

"I was sad when telling my story, and after I returned home and recalled what happened was very difficult for me and I wasn't able to sleep. I had that experience for the whole week and then I started to forget slowly, gradually and after keeping it going, I started to feel better".

"Whenever I have a session I feel relieved."

Feasibility of training lay counselors

A lack of resources to provide or pay for child care made recruiting female lay therapists particularly challenging, resulting in a 3:7 female to male ratio. The trainees who worked also struggled to fit the training around their working hours, and there were challenges with travel and difficulties associated with refugee status, such as trying to register with UNHCR, barriers to accessing services, and resettling in a third country. However, it should be noted that generally the trainees appeared very dedicated, and while often late for training sessions, they generally appeared determined to attend and to learn, and provide help and support for their fellow community members.

Of the original ten trainees who started training, two were unable to sustain the time training due to work and financial reasons. A further two trainees who completed training was unable to deliver the intervention, one because his family was resettled in Europe and the other because she gave birth. Another trainee did not follow the NET protocol and despite further training sessions and supervision with the PI, and it was decided mutually that he should not continue; the PI (with assistance of the translator) took over the case that this trainee had seen for three sessions and completed the NET and gave appropriate additional support. This particular case did not demonstrate any clinically significant or reliable change.

Discussion

To the best of the authors' knowledge, the current study is the first to administer a translated and culturally adapted version of NET to Sudanese refugees living in Cairo, using non-professional counselors from the same population. Similar to other studies of NET [11, 15–18, 22], the current study showed a significant decrease in symptoms of PTSD from pre to post-intervention. This supports the idea that the previous studies' findings can be generalized to the delivery of NET by non-psychologically trained lay counselor in a low-income urban setting, without the use of interpreters.

Furthermore, the current study demonstrated a significant reduction in anxiety and a marginally significant reduction in depression following NET. For all the outcome measures, at least half of the participants showed reliable improvement, with five out of six participants exhibiting this on the measure of PTSD. With regard to clinical significance, HADS anxiety symptoms decreased to "mild" for four of the six participants; three of the six participants' HADS depression scores decreased to the mild range; and three of the six participants' PTSD scores moved into the non-clinical range.

While the absence of a control group prohibits causal conclusions from being drawn, when these findings are considered together with the data from the existing RCTs of NET, they suggest that it is feasible to deliver NET to the current population via lay therapists from the same community with just eight weeks part time training (a total of 27 h). Previous studies in third world countries, of NET, have also shown positive results, but unlike the current study have tended to employ more expensive, mostly Western psychologists to deliver the NET intervention [11, 15, 17, 18, 22]. While Neuner et al. [16] also used lay counselors to deliver NET, they employed translators and were based in a refugee camp. The current study therefore offers promising indications regarding the delivery of NET by lay counselors to refugees without translators, in a complicated, urban metropolis such as Cairo.

Offering NET in this way, in this context, is likely to be more affordable and sustainable, given the constraints on available resources. Furthermore, the fact that the NET was delivered in just six sessions over a 2- to 3-week period means it was less vulnerable to the issue of frequent movement of refugees interrupting interventions; NET appears to have the potential to offer a feasible, effective intervention for PTSD in a brief time, despite arguably unsettled and unsafe living conditions of the refugees [9]. Moreover, it arguably has the potential to addresses a pressing need, given the current refugee crisis.

In addition, having the intervention delivered by members of the same community with shared experiences, language and culture may help aid its acceptability among a population who have a significant distrust of those who may be perceived as authority figures or officials in any capacity. In this respect, it is worth noting that none of the participants for whom NET was deemed as suitable disengaged from the intervention, something that is unusual with refugee samples given their unstable circumstances (REF). Furthermore, during the focus group the participants spoke positively about the intervention. All that said, it is worth noting that some of the participants had not reached the non-clinical range of the measures by the end of NET.

Arguably NET is consistent with the World Health Organisation guidelines recommending a stepped model of care [25]. Importantly, the study also suggests that Sudanese refugees living in an urban context can be trained in a short period of time to offer an intervention that seems to reduce symptoms of trauma, anxiety and depression. That they were willing to do so voluntarily and were committed to the process is also promising. Should such an undertaking be compensated, it seems likely that many refugees would be willing to take part, as common issues preventing attendance at the training were child care commitments, travel costs, and paid employment opportunities. While there was significant attrition among the trained NET counselors, if sufficient counselors are trained to allow for this, the delivery of NET in the manner adopted here seems feasible.

Limitations

The study has a number of limitations. Most notably, as mentioned above, the fact it is uncontrolled means that changes in outcomes cannot be definitively attributed to NET. That said, the consistency of the findings with previously RCTs in related contexts is encouraging, and preliminary studies of this sort are helpful in making the case for funding for subsequent RCTs. A second limitation is that the translated versions of the measures had not been previously validated. However, the translation was checked by back translation and the measures' internal consistency examined. Thirdly, the extent to which the lay counselors complied with the NET protocol was not formally assessed, though supervision was able to detect significant deviations from the protocol (as described above).

Conclusions

The current study findings support the delivery of NET by non-psychologically trained lay counselors to Sudanese refugees in Cairo. The initial findings indicate that with linguistic and cultural adaptation, this intervention may offer a significant decrease in not only

symptoms of posttraumatic stress but also anxiety and at a lesser extent, in depressive symptoms.

Arguably, the current study, taken together with the existing literature, makes the case for the value of an RCT of NET delivered by lay counselors among Sudanese refugees with PTSD living in Cairo (and other refugees living in urban areas in transit countries who are suffering from PTSD). Prior to such a study, it would be helpful to fully validate the measures employed, in the relevant language(s). Such an RCT could also benefit from including culturally appropriate diagnostic clinical interviews for PTSD.

Abbreviations

PTSD: Posttraumatic stress disorder; NET: Narrative exposure therapy; RCT: Randomized control trial.

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Authors' contributions

KE designed and implemented the study, carrying out all data collection. DFJ and KE carried out the data analysis and wrote the paper. The author(s) read and approved the final manuscript.

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Availability of data and materials

The data is not publicly available as consent for this was not obtained.

Declarations

Ethics approval and consent to participate

Ethical approval was given by the Institutional review board of the American University in Cairo. All participants gave informed written consent to participate.

Consent for publication

All participants consented to any subsequent publications.

Competing interests

The authors declare that they have no competing interests.

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