

Narrative Exposure Therapy for Post-Traumatic Stress Disorder

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Abstract

Narrative Exposure Therapy (NET) is a relatively novice treatment that may be beneficial for use with individuals who suffer from Post-traumatic Stress Disorder (PTSD). The aim of this review was to explore the mechanism, evidence-base and effectiveness of NET in remediating PTSD symptoms. A literature search was carried out using Medline, PsycINFO, EMBASE and The Cochrane Central Register of Controlled Trials (CENTRAL). Reference lists of papers, review articles and grey literature were also hand searched. Findings were presented in a narrative review.

The emerging research on NET presents it as a potentially effective and accessible treatment of PTSD symptoms though careful consideration of cultural issues must be made prior to and during application. Current research on NET provides evidence on its effectiveness especially with refugee populations for whom it was initially intended. It also has additional attractive characteristics such as its accessibility and cultural consideration. However methodological limitations of existing studies, in particular the small sample sizes, have to be noted.

Keywords: Stress disorders; Post-traumatic; Narrative therapy; Therapeutics; Recovery of function

Introduction

PTSD is a highly prevalent disorder that is typically related to traumatic events [1]. It originated from the Vietnam War as experienced by soldiers and found its way in the Diagnostic and Statistical Manual of Mental Disorders (DSM) in 1980. Whilst a number of treatment options, in particular psychotherapeutic ones have been developed [2], evidence-based guidelines for the diagnosis and management of this disorder have been issued by the National Institute for Health and Clinical Excellence [3] and the World Health Organization [4].

Since its conception, the clinical diagnosis of PTSD has broadened so that it is also applicable to other traumatic experiences not necessarily resulting from war [5]. Although symptoms usually appear during the first month following the traumatic event, in a few individuals, delays of months and even years have been reported prior to the onset of symptoms [3].

In the United States, the prevalence of PTSD is around 8% [6]. However in specific populations such as refugees, the rate of PTSD is much higher [7] and the attributed risk has been shown to be as higher as 10 times more than the general population [7]. Overall, the incidence of PTSD has been found to be between 8.1%-13 % for males and 20.4-30.2% for females [6,8].

Although trauma can have various psychological effects on an individual, not all responses can be classified as PTSD as a number of conditions have to be met. Several debates have evolved around the definition of a traumatic stressor and these led to the modification of the meaning. Whereas initially a major stressor was understood as

being a catastrophic event that is not usually experienced in the life of a human being, the contemporary meaning relates to a threat to physical integrity (in the DSM V) with the tenth version of the International Classification of Disorders manual (ICD 10) still emphasising that the event must be essentially catastrophic.

In PTSD, the three core symptoms are: trauma re-experience during sleep and waking hours, avoidance of traumatic memory triggers (often accompanied by emotional numbness, depersonalization and derealisation) and hyperarousal (easy startle) [9]. Over the years, an important debate has revolved around the application of Western diagnostic methods to other cultures such as non-Western refugees. Although diagnostic systems like the ICD 10 are internationally recognized, they are still predominantly based on a Western philosophy and so may not holistically consider the cultural influence on health perceptions [10].

Notably, the fact that PTSD can develop after just one traumatic event highlights the grim reality and psychological consequences that sufferers may experience in the face of continuous multiple traumatic events [11]. Especially in the case of war and refugees, sufferers may also have to deal with a multitude of additional problems related to their situation such as homelessness, poverty and physical health problems which inevitably exacerbate the situation [12]. In the literature, there is a clear distinction between simple and complex trauma. Whereas the former-mentioned is often related to one traumatic experience such as a car accident, the latter-mentioned may arise from repetitive traumatic events such as torture. In the case of complex trauma, individuals may experience deeper psychological and psychiatric changes than those seen in PTSD [13]. An association which is evident and highly cited is that between the number of trauma events and the increased probability of developing PTSD [14].

PTSD treatment may include a combination of pharmacotherapy and psychotherapy though the primary treatment is often recommended to be non-drug based [3]. These are discussed in the following sections.

Pharmacological treatment

In a comprehensive review of medications for PTSD, the evidence base is currently strongest for Selective Serotonin Reuptake Inhibitors (SSRIs) with Sertraline and Paroxetine being the only ones approved by the Food and Drug Administration (FDA) for use in PTSD [15]. In particular, in clinical trials, outcome variables for Paroxetine were statistically significant but not clinically so [3].

Fluoxetine and Venlafaxine are often strongly advocated for use although these may not be so effective in veterans [16]. Although direct comparisons between pharmacotherapy and psychotherapy are scarce and oftentimes inconclusive, effect sizes resulting from available research show that overall certain types of psychotherapy such as CBT are more beneficial and should be the routine first-line treatment [3]. Thus, pharmacotherapy should only be offered if the individual refuses to participate in psychotherapy or if trauma-focused psychotherapy has not proven to be effective [3].

Trauma focused psychotherapy

As noted by Robjant and Fazel, psychological explanations of PTSD are beneficial as they have led to the development of psychological treatment [9]. Most of the trauma-focused treatment approaches are primarily based on CBT principles. Some of these techniques are: Exposure Therapy, Trauma-Focused CBT and Cognitive Processing therapy [3].

Exposure therapy involves a process that exposes and gradually desensitises the individual to memories, thoughts and feelings related to the trauma in a safe environment. In most exposure therapy programmes, such memories are evoked through imagery. It is postulated that the effectiveness of exposure therapies is attributed to the ability to enable an individual to discern between past experiences and current threat [17]. Prolonged Exposure (PE) is one of the commonly recommended evidence-based exposure treatments for PTSD and is often regarded as the gold standard [18]. Developed by Dr. Edna Foa, this treatment usually entails 9-12 weekly sessions lasting 90-120 minutes. This therapy involves gradual exposure to stimuli that are related to the trauma experiences in order to reduce avoidance and eventually diminish PTSD symptoms. During the process, relaxation training and the confrontation of distressing memories are an important component. In a review, the findings showed that 86% of subjects who had been following this type of therapy had a better trajectory than their control group counterparts [19] although other studies reported that up to 45% of individuals may still merit a diagnosis following treatment [20]. Moreover, most research has been carried out on simple and single trauma and so the effectiveness of PE on complex multiple trauma has not been thoroughly explored yet [18]. Narrative Exposure Therapy, which is the intervention of interest in this study, is another variant of CBT which falls underneath the exposure therapy group in PTSD treatment-this therapy type will be explored in a later section.

Trauma-focused CBT (TF-CBT) is a branch of cognitive therapy which builds on the premise that in PTSD, symptoms are evoked by the individual's interpretation of the trauma rather than by the actual traumatic event itself [21]. This implies that it is one's distorted

cognitions that need to be addressed by attempting to correct and replace these with more realistic and less distressing thoughts. This is done through a combination of trauma-sensitive techniques and cognitive behavioral therapy strategies. Typically, TF-CBT lasts between 12 and 16 sessions [22].

Cognitive processing therapy (CPT) shares similarities to Narrative Exposure Therapy in that it engages the individual in writing a trauma narrative. During repeated reading of the account, cognitive therapy is delivered by focusing on control and safety issues [23].

Other therapies which are not predominantly based on CBT include Eye movement desensitization and reprocessing (EMDR) and Testimony Therapy.

Eye movement desensitization and reprocessing (EMDR) targets the individual's reaction to memories of trauma. Essentially, therapy is delivered by guiding the patient to think and speak about the trauma whilst focusing on unrelated external stimuli such as sounds or eye movements [24]. One common practice is for the therapist to move his/her hand whilst asking the individual to follow this movement with his/her eyes.

Another therapy that is in use is Testimony Therapy which places the trauma in the cultural socio-political milieu in which it has occurred. Typically, the process involves 12 sessions during which the individual narrates his/her life stories with the traumatic experiences included. The story is presented in a written format and can be read to significant others or archived [25].

Discussion

Overview of NET

In 2002, Neuner and colleagues developed a new type of therapy for PTSD called Narrative Exposure Therapy (NET) [15].

NET is an evidence-based treatment that is most commonly used in the case of multiple traumas resulting from domestic, sexual or organized violence or abuse, war or natural disasters. The procedure followed by NET uses Testimony Therapy and Cognitive Behavioural Therapy as a base and addresses the same psychological aetiology that exposure therapies are based on; namely the correction of the autobiographical memory dysfunction and the habituation to the fear response [18].

At its simplest, the aim of NET is to facilitate the process of converting fragmented autobiographic memories related to the traumatic event into a coherent narrative-the testimony. During this process, painful emotions are analyzed in a guided manner which facilitates emotional recovery from the trauma [26].

As guided by the therapist, the individual is engaged in forming a chronological narrative of his/her life with special focus on the period of trauma [27]. During this process, the therapist asks the individual to describe observations, thoughts, emotions and physiological responses to the traumatic experience in detail whilst ensuring that connection with the present is not lost. In order to ensure that the individual does not disconnect with the present, constant reminders are provided in terms of the fact that the responses being described by the individual are linked to a traumatic episode that has a time and place in the past. The description provided by the individual is recorded by the therapist as a necessity for the compilation of the autobiography [15]. Whereas in traditional exposure therapy, the therapist asks participants to focus

on the worst traumatic event that they had experienced, NET targets all traumatic events on the premise that in complex trauma, individuals may have undergone similarly severe multiple traumas. Thus it may not be realistic or indeed therapeutic to focus on just one of these events [18]. This is also aimed at enhancing a feeling of personal identity of the person's life including the traumatic episodes. Once the biography is extracted, its review by the individual and the therapist allows for the understanding of the experiences as well as the behaviour and schemas that emerged as a consequence [27].

Basis of narrative exposure therapy

Whilst human perception is often regarded as being influenced by a direct stimulus, it is also known to be affected by memories of arousing experiences that have occurred in the past. In the case of any experience but with specific relevance to traumatic events, the memory is not just a snapshot of the historic episode but a complex mash of the actual event and the meaning attributed to it. This remodels cognition, emotion and behavioral responses to such an extent that the individual may experience significant and constant distress even though the threat is in the past and so no longer exists. In essence, this leads to the formation of hot and cold memories. The term 'cold memories' refers to those memories which are coherent, factual, salient, organized and do not cause significant distress when recalled by the individual [28]. Cold memories are specific to different events that occurred in an individual's life and are organized in different levels with each level being increasingly specific than the one preceding it [9].

Contrastingly, 'hot memories' are painful, distressing disorganized and disconnected from the plain facts of the original episode. A further detrimental characteristic of such memories is the tendency for them to be triggered by a sensory or environmental cue which consequently activates the individual's fear response to a stimulus that has actually occurred in the past [28]. In hot memories, there is an involvement of the limbic system in the mental representation of the traumatic event which is what leads to activation of the fear network and the resulting symptoms such as the flashbacks in PTSD. Neurocircuitry explanations of PTSD have placed the medial prefrontal cortex (mPFC) and hippocampus at the forefront of symptom causation. The involvement of the amygdala is related to hyper-responsiveness which leads to elevated fear reactions and intrusive traumatic memories. Contrastingly, the ventromedial prefrontal cortex (vmPFC) may be hypo-responsive and this fails to inhibit the amygdala. The combination of these two malfunctions may lead to challenges in emotion regulation, attention and contextual processing. Additionally, the malfunctioning of the hippocampus contributes to difficulties in contextual processing, memory processing and neuroendocrine regulation. More recently, research has suggested that the dorsal anterior cingulate cortex (dACC) and insular cortex may also be involved in PTSD [29]. As a consequence of this chain of physiological abnormalities, the fear network is easily activated in particular due to an increased number of possible cues and the stronger associations between these cues [26].

The aim of NET is to reorganize a disordered memory representation against the backdrop of the individual's lifeline, thus enhancing the coding of the declarative autobiographical memory (cold memories) [9] and giving a temporal and spatial context to traumatic events. Exposure to the traumatic episodes continues until the individuals' arousal is visibly diminished [15]. This does not mean that the meaning attributed to the traumatic event is shunned – it is

altered in a way that allows the individual to perceive the event and react to its memory in a less distressing manner [30].

Structure of narrative exposure therapy

NET sessions preferably occur at least once per week with no longer than a fortnight between the sessions. Each session typically lasts 60-120 minutes [31].

The first step of NET consists of psychoeducation which involves the provision of information on the process and rationale for NET. This is followed by the individual's informed consent for the therapy. During the first session, the lifeline is constructed. This is carried out with the use of a rope which represents the individual's life from birth till the present. Part of the rope is left uncoiled so as to represent the future. The individual is then asked to narrate his/her life in a chronological manner. Symbols are used to represent life events on the life line such as flowers (for positive events) and stones (for negative experiences such as the traumatic episodes). This initial exercise is important both as a means of building a relationship between the therapist and the patient and as an indicator of the amount of sessions required. The subsequent sessions consist of the narration of the person's life story with particular focus on the traumatic events. Upon describing the traumatic episodes, the individual is encouraged to initially provide a general description of the antecedents of the event from an environmental, physical, cognitive and behavioural perspective. The actual event is then explored in detail as the therapist guides the individual to immerse himself/herself in the description for a period that is deemed to be long enough to allow for habituation to occur whilst ensuring that the individual remains connected to the present. Following exposure to the event, the individual is guided to continue narrating about the stretch of life following the ordeal until his/her arousal has subsided, at which point the session can be concluded. Between the sessions, the therapist writes up the narrative and identifies any areas that require further probing. At the beginning of the subsequent session, the narrative is read to the patient, which once again serves as an exposure opportunity.

Several sessions and narrations may be required for the individual to experience a diminished reaction to the event. Following this, the individual continues with his/her life story narration until the next traumatic ordeal appears on the lifeline which is once again explored in detail [9]. Upon addressing all the traumatic events and obtaining a full testimony from the individual, therapy can conclude with focus on any hopes and aspirations for the future. The individual is provided with a copy of the testimonial which often serves as a useful source of information for legal proceedings and history purposes [15]. Figure 1 illustrates the framework for NET.

A version of NET for use with children called KIDNET has also been developed and studied. Whilst this follows the same procedure as the adult version, it allows for child-friendly amendments [15].

Apart from its effectiveness, the main strength of this type of therapy is its relative simplicity such that it can be taught to lay people without a psychosocial background. This makes the therapy accessible and handy for use in emergency situations. Another advantage related to NET is the fact that many cultures already hold storytelling as a traditional practice in everyday life and so they may easily embrace and identify to the narrative process of NET [32].

Part 1: Diagnostic interview and psychoeducation

The therapist should discuss, for example:

- brain model
- fear network
- plan for therapy (lifeline, narration, testimony)
- dangers / problems of avoidance
- informed consent

Part 2: Laying out the Lifeline
(optional)

Part 3: NET therapy sessions - Narrative Exposure to flowers & stones.

The focus in NET is on the stones that are causing PTSD symptoms

Part 4: Final session rituals

- Re-reading the narrative - trying to promote engagement in exposure to trauma material
- while re-reading and not avoiding
- Signing of the narrative by the client, therapist, and witnesses (e.g. translator)
- Hopes for the future
- Laying out of the final Lifeline including all the positive, negative, sad (losses), and aggressive (violent) events (flowers, stones, candles, sticks) and finally placing flowers for hopes and wishes for the future

Figure 1: Narrative Exposure Therapy framework [26].

Current evidence base and recommendations

The search for literature was initiated by identifying a number of keyterms that could locate suitable studies as guided by the Cochrane Guide for Systematic Reviews [33] and by carrying out focussed and exploded keyword searches on the MeSH On Demand interface. The databases selected were Cochrane Central Register of Controlled Trials, EMBASE, MEDLINE and PsycINFO. Filters and limiters were used accordingly in order to limit the results to those which are specifically and directly suitable to the research question set. The bibliographies and reference list of relevant articles and reviews were reviewed in order to attempt to identify further potentially suitable articles.

Several trials and reviews have attempted to explore the effectiveness of NET and overall the results are encouraging.

In most of the clinical trials involving NET, the primary outcome measured was a change in PTSD symptoms from baseline to an assessment carried out after 3-6 months. Generally, outcomes were congruent in presenting a higher difference in the PTSD symptoms' mean score after 3-6 months in the NET group than in the comparator group. However the level of significance was reached in some of the trials [34-39] but not so in others [32,40-42].

One of the clinical trials that was conducted compared NET to Psychoeducation [35]. This resulted in a significant reduction in traumatic symptoms in the NET group after a 6 month follow up. In fact a significant Time of examination x Treatment group interaction ($F(1, 16)=20.80, p<.001, n=0.60$) was obtained and in the NET group, the pre-post mean change in PTSD symptom score was 6.4 points as compared to 1.5 points in the other group. Additionally, at the 6-month assessment point, 56% of the NET participants no longer met the criteria for a clinical PTSD diagnosis as compared to only 11% of the cases in the NTFT arm. Another randomized controlled trial presented similar outcomes [34]. After four months of exposure to NET or pharmacotherapy, significant improvement in PTSD symptom severity was only noticeable in the NET group ($p<.001$). Interestingly, individuals in the comparator group had a worsening of symptoms (average score deterioration of 15.9 points). At this point, almost half of the NET participants (45.5%) no longer satisfied diagnostic criteria

whilst all the patients in the other group were still diagnosed with PTSD.

Similarly, in another trial comparing NET to Interpersonal Therapy (IPT) it was found that at after six months of either NET or IPT, the NET group's PTSD score was lower than the other group (a change in mean score of 28 points in NET as compared to no change in the IPT group) [39]. After 6 months, only 25% of NET individuals with a pre-test PTSD diagnosis still satisfied the diagnostic criteria. Contrastingly, in the comparator group, 71.4% of individuals had a persistent diagnosis of PTSD. There was a significant difference between the groups ($p<0.05$). On reflecting on the better outcome of NET in this study as compared to other trials, it is possible that this is due to the fact that the participants had multiple losses in their lives and so a grief session was offered as part of the NET package, thus affecting results. In another trial, the 6-month follow-up point revealed a 24-point score difference in the pre-post symptom assessment in the NET group after 6 months of treatment. Contrastingly a smaller change of 16.9 points was achieved in the other group which consisted of an Academic Catch Up programme [36].

Although in other clinical trials [37,38,42] outcomes were in favour of NET, the results were less positive or significantly different when compared to the other trials described. In the first of these studies, 64% of the NET participants had an improved PTSD score after 6 months (with 45.5% of them no longer meeting PTSD diagnostic criteria) whilst in the comparator group (Treatment as Usual), only 4.3% of the subjects had a symptomatic improvement score [42]. Although this looks like a very promising outcome, the researchers acknowledged that during the study, refugee status was awarded to more of the NET participants than those in the other group and so this could have let to alleviation of symptoms in the NET group. In the subsequent study, there was a significant symptomatic difference between the NET and comparator group participants after 4 months of treatment [38]. Participants in the non-NET arm received medication and non-trauma based psychotherapy. After 1 year, there was improvement in both groups with significant between-group differences ($X^2(2, N=8)=9.48, p<.01$). More improvement was evident in the NET participants ($F(1,106)=14.00, p<.01$). However half of the participants of the NET group were still suffering from severe symptoms even after a 1-year time lapse. The authors noted that despite this outcome, which is rather poor as compared to other trials, the administration of NET seemed to have a strong effect on participants' decision to leave the refugee camp to start a new life after one year. Similarly, in another trial, the participants seem to fare worse than in other trials [37]. Although 63% of the NET participants (as compared to 16% in the other group) improved significantly over a 6-month period, only one patient remitted completely. In this regard, there was no significant difference from the comparator group (psychoeducation). As a possible explanation, the authors noted that the participants in the study had a higher initial pre-test PTSD symptoms score as compared to those in other trials. Extraneous variables such as family separation and the persistent threat of deportation could have also been in effect.

In three other trials, there was an improvement in PTSD symptoms in the NET group but it was not enough to reach significance as compared to improvement in comparator group [32,40,41]. However there were other important changes in relation to NET. For instance, in one of the studies, good results were obtained with less training and sessions as compared to the other arm which consisted of participants who received the best practice standard German treatment for Borderline Personality Disorder [40]. In another trial [32] significant

differences were evident in the NET groups' well-being (paired $t(34)=-3.66$, $p=.001$, $d=0.87$), post-traumatic growth (paired $t(34)=2.35$, $p=.025$, $d=0.41$) and a meaningful (but not significant) decrease of symptom interference in daily functioning (paired $t(30)=1.82$, $p=.079$).

In a qualitative review, 16 trials were included which compared NET to Supportive Counseling, Psychoeducation, Interpersonal Therapy Meditation-Relaxation and Waiting List [9]. The review conclusively provided evidence that NET is helpful in alleviating acute and chronic PTSD. Similarly, in a meta-analytic review which targeted studies that involved refugee populations only [10], the combined outcomes of seven quantitative studies demonstrated the effectiveness of NET with an adequate effect size and statistical power. This led to the authors to conclude that lay counselors should be empowered by being trained to deliver NET to fellow refugees.

Conclusion

Trials and reviews such as the ones described have been successful in building a sound evidence-base for NET. In view of this, further research is required to continue to explore the potential benefits of this therapy. Primarily, it would be fruitful to engage in trials with larger sample sizes and with enough inter-trial uniformity to allow for further meta-analytic approaches of the combined outcomes. Furthermore, the majority of the studies that have been conducted arise from the quantitative paradigm. Whilst this has been beneficial in exploring the 'width' of the subject by allowing for the estimation of the statistical significance of results, it is also desirable to address the depth of the subject by engaging in qualitative or mixed research such as a mixed method study carried out recently in the Netherlands [43]. This will introduce an important tangent to the information that is already available by extracting meaning and perception from participants and therapists who have engaged in this therapy.

There is limited data arising from PTSD sufferers in lower-income countries yet this is ironic since in these countries, there is a high rate of PTSD in refugees. In this population, the type of PTSD experienced may be more complex and involving multiple events-characteristics which may affect the outcome of therapy and thus worth exploring in more detail through further research initiatives [32].

The fact that NET was specifically developed for use with populations who may have experienced multiple trauma such as refugees reflects in the fact that most of available literature is based on research conducted in a very specific setting, commonly refugee settlements—this gives rise to a generalizability issue which makes it hard to determine the effectiveness of NET outside of these populations. It would be interesting to expand the scope of NET by exploring its application to other trauma-related situations that are not necessarily a byproduct of organized violence or natural disasters.

It may also be fruitful to continue exploring the effectiveness of NET as an adjunct treatment to other psychotherapies, physical therapies or pharmacotherapy. An example of such research was presented in a recent study during which physiotherapy was combined with NET in the treatment of chronic pain in torture victims [44].

Furthermore, it is of utmost importance to place further focus on the effect of culture and context when diagnosing and managing disorders such as PTSD. This is due to the fact that the majority of the available studies on the subject have not compared NET to other ways of dealing with suffering in that particular culture which may (or may

not) be as effective. Furthermore studies on how NET testimonials have been used in human rights proceedings may enhance the ecological validity of NET [45].

Finally, on reflecting on the potential benefits of NET, it may be worth dedicating more training initiatives in countries where trauma-specific care is limited and which experience a high influx of refugees. Since Narrative Exposure Therapy training is concise, it may be relatively simple to incorporate it in health care professionals' undergraduate/postgraduate curriculum or continuous professional development training. Ideally this would be part of a Trauma-Informed approach which is built on the premise that many individuals who seek help do not realize that their past traumatic experiences may have a strong link with current psychological difficulties. Similarly care providers may ignore the significance of these traumatic experiences and/or may not address them appropriately [46]. In this way, it has to be noted that the NET process, especially the setting of the lifeline may help to extract a detailed history from the individual which may subsequently shed light on important traumatic events.

Conflict of interest

The authors declare no conflicting interests.

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