Chapter 9

FACING CHILDHOOD TRAUMA: NARRATIVE EXPOSURE THERAPY WITHIN A CASCADE MODEL OF CARE

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ABSTRACT

Interventions that include (in sensu) exposure to, and restructuring of, traumatic memories can effectively reduce trauma-related suffering in children and adolescents. Such treatment modules target implicit memory representation of the various stressors that connect perceptual and action-related networks, which have formed in response to multiple traumatic stressors and other fear-provoking experiences (fear networks). The ability to recall and restructure trauma-related memories into a coherent trauma narrative, assigning episodic memory to the intrusive recollection, varies with the developmental stage, as does the formation of the fear network. Here, we focus on KIDNET; an effective and efficient child-friendly version of Narrative Exposure Therapy (NET) that takes these developmental aspects into account and includes the effective exposure elements. Given the frequency and scope of both domestic and organized violence, we suggest a multi-layered, cascade structured care system to support the many children who are in need. KIDNET can be applied by trained lay counselors as a short-term intervention, which is a key feature of success, especially in many of the most affected (social) settings where survivors endure continuous trauma.

In addition to one-to-one individual trauma therapy, for cases where psychological difficulties are below a threshold of clinical diagnosis, novel approaches are necessary for the prevention of chronic trauma-related illness. In particular low threshold, early intervention programs including internet-based and group format programs for traumatized children are required. Psychoeducation, support from peers, counseling and psychological assistance should be provided for those who present with only limited

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deficits in functioning, despite their experience of abuse related stress. These approaches are thought to prevent aggravation of mental suffering in children at risk.

**TRAUMA DURING CHILDHOOD – PREVALENCE AND CONSEQUENCES**

Exposure to traumatic stress and severe suffering can occur in various forms at all stages of development. Children experience physical, emotional and sexual violence at home, in their neighborhoods and schools,[1, 2] that can lead to a series of later psychopathological problems (see e.g. [3, 4]). A national survey conducted with children and adolescents from birth to seventeen in the United States, reveals substantial rates of violence, abuse and exposure to crime, with more than 60% of children having experienced a physical assault, almost 10% having experienced at least one type of sexual victimization and almost 20% having experienced at least one form of maltreatment[5]. With increasing age, the prevalence rate of reported lifetime exposure to violence and abuse increases even further, so that in the 14-17 year old age group more than 70% reported experiencing at least one kind of physical assault, almost 30% had experienced sexual victimization and more than 30% had experienced some form of maltreatment. A recent representative nation-wide study in Switzerland with more than 6 000 teenagers showed that sexual abuse and harassment by adults is a major problem. The study also showed that sexual violence among peers is common and is occurring within relationships among teenagers, a problem that has received little attention to date. In more than 50% of the victims of some form of sexual abuse and violence, the perpetrator was below the age of 18 years [6]. This is consistent with previous studies that have focused on child sexual abuse and revealed that more than 15% of girls and more than 7% of boys are victims of child sexual abuse (CSA) [7].

Unfortunately, research has shown that experiencing one type of stressful and violent event raises the probability of experiencing another one. Furthermore, in those who have experienced a physical assault, the odds of having also been a victim of sexual assault is 6.2 [5]. Finally the number of traumatic event types experienced produces a ‘building block-effect’, a linear relationship with the likelihood of developing psychological and physical problems [8, 9].

There is ample evidence for sensitive periods during which maladaptive neuroplastic processes may negatively affect the development of specific brain regions and thus set the path for psychopathological developments [10, 11]. In addition to domestic violence and occasional natural disasters, children in many regions are affected by civil wars that are still raging in the world [12]. At the same time, in post-conflict regions, violence at home is increasing. Children and young people experience both organized and family violence, and therefore have a higher risk of developing mental health problems due to the building block effect [13-15].

These findings demonstrate the importance of assessing the autobiographical case history of a child survivor in addition to completing a comprehensive structured diagnostic interview. This is required in order to properly assess and evaluate the impact of the multiple traumatic events and other life-stressors, and also to take into account the developmental period during which the stressors have occurred [16].
The consequences of trauma include mental health problems like PTSD, Depression, Anxiety Disorders and Personality Disorders [16-18]. Comorbid disorders that are typically found amongst trauma survivors contribute enormously to the global disease burden: i.e. depression, which is the third leading contributor to international health problems, or suicidal behavior which is a leading cause of death worldwide, and alcohol and illicit drug use, which accounts for more than 5% worldwide [19]. By 2020, an estimated number of 1.5 million people will die each year by suicide, and between 15 and 30 million will make a suicide attempt [20].

Children with a history of maltreatment and adverse childhood experiences have not only poorer mental health but also poorer physical health throughout life, including cardiovascular disease, diabetes, cancer, infectious diseases, frequent headaches, and even premature mortality[4, 21-24]. Exposure to traumatic stress is also associated with augmented use and cost of health care as well as an increased risk of developing multiple medical disorders such as respiratory, gastrointestinal, musculoskeletal or inflammatory and autoimmune diseases like rheumatoid arthritis[25, 26]. This increased risk for physical diseases is presumably mediated by stress-induced alterations in the immune system: For instance, work from our group [27] demonstrated a reduction of naïve T cells, mediating viral immune responses, and regulatory T cells, preventing the development of autoimmune diseases, in a dose-response like manner following traumatic stress and PTSD. The observed reduction in naïve T cells might explain the increased susceptibility of traumatized survivors to infections, and the reduced number of regulatory T cells could explain the increased risk for autoimmune diseases in PTSD. Furthermore, PTSD has been associated with an increased inflammatory state, concurring with increased levels of proinflammatory cytokines such as IL-1β, (TNF)-α and IL-6 and impaired natural killer cell activity (for an overview see [28]). Childhood adversity alters mental functioning on all levels. For instance, we have demonstrated this for school performance and memory abilities [12]. However, knowledge is sparse on how interpersonal functioning (particularly empathy, hostility and aggression) are altered in young adolescents who have experienced sexual abuse and interpersonal violence.

Even during the earliest stage possible – during pregnancy – trauma already has an influence on our lives. We have recently been able to show that intimate partner violence during pregnancy can change the epigenetics in children[29].

In summary, evidence from different research areas has shown that enduring and witnessing traumatic events during childhood poses a risk of serious detrimental effects. A paradigm shift towards an increase in the awareness of the importance of mental health as a priority, seems inevitable: Worldwide data on the ‘global burden of disease’ identify trauma spectrum disorders as a major source of health costs and human suffering [30, 31].

**TREATMENT OF CHILDHOOD PTSD**

Once a child has developed a psychiatric (trauma spectrum) disorder in response to repeated exposure to violent experiences, abuse and neglect (often in combination with other suffering) therapeutic assistance is essential. A multitude of intervention programs have been tried in traumatized children but few have been evaluated. Results indicate that an exposure element (retrieving and working through the memories of the traumatic event with its connected emotional responding) seems to be a necessary core component for successful
treatment. Therapies that exclusively focus on current problems and teaching coping skills do not result in lasting alterations of trauma-related symptoms[32].

In the following, we discuss the challenges and prerequisites of memory work with children. Following this we will briefly outline the specific ways that exposure has been applied in tf-CBT (trauma-focused Cognitive Behavioral Therapy), EMDR (Eye Movement Resensitization and Reprocessing) and then detail KIDNET (Narrative Exposure Therapy for children), a therapy that has been developed by our group, highlighting the concordant elements of the three evidence based approaches.

**MEMORY AND NARRATIVES IN CHILDREN**

Autobiographical memory integrates memories of past experiences into an overarching life narrative. We can only narrate about the past, from the moment in time when we begin to remember personal experiences in a way that makes them accessible to recollection later in life. This depends on the possibilities of encoding, storing, and retrieving information from experience. Multiple interacting systems contribute to our ability to store and recall information as children[33]. Infants are equipped with an implicit (or non-declarative) memory system usually without conscious awareness[34], which is distinguished from an explicit or conscious memory system that develops as a function of neurological, cognitive and linguistic developments. Both memory systems can be considered to operate as a unit developing together.

During childhood we see evidence of amnesia for our earliest experiences, at least when memory is to be accessed verbally. Children, like adults, have difficulty providing verbal narratives of experiences that occurred before the end of the second year of life, but these contents stay with us as elements of emotional networks (like perceptions, sensations, emotions, physiological responding etc.) and this is a crucial part of the implicit autobiographical memory system (see [16]). Stressful and traumatic events occurring prior to the age of 2 or 3 years, will not leave memory traces accessible for later conscious recall. Children who are not able to provide a verbal report at the time of the experience, are unlikely to explicitly recall their experiences years later [35]. However, they may influence our later life, our thinking, decisions and emotions in a way that has previously been considered ‘unconscious’.

Traumatic experiences, especially their core features, appear to be remembered better over longer delays than is typically the case for other experiences [36, 37], and can be recalled even many years later [38]. The durability and accessibility of traumatic events may exceed that of many non-traumatic events. One reason for this might be that traumatic experiences are often distinctive and highly emotional, and therefore more likely to be retained over time than less salient events. Once in memory, stressful and traumatic events tend to persist in children’s minds [33]. It may be important to acknowledge that maltreated children appear to be no different from other children in their susceptibility to suggestion and misleading information when narrating about the past [39].

When we work with a child using in sensu exposure therapy, we do not require non-verbal demonstrations of explicit memory, or behavioral reenactment of trauma. Instead we need episodic memories located in time and space or at least verbal recall of implicit (pre-verbal) contents, such as the ability to report about the quality of emotions, sensations,
physiological responses, bodily reactions and their personal meaning. By 2-3 years of age, children are able to provide coherent, brief, verbal reports of specific and traumatic events (e.g. [40]). Younger children generally respond less informatively in terms of completeness of the narrative than do older children [41] and reports of early traumatic events actually become more detailed as children develop [42].

Of importance for young trauma survivors is that support to reminisce in elaborated and evaluative ways about events helps children to develop more detailed, coherent, and evaluative autobiographical memories. Family support, parent-child conversations and attachment styles affect how children process and remember emotional events [33]. Narratives provide organized frameworks from which children can assess the accuracy of their interpretations, and allow the adult to explain the event and correct misconceptions. Additionally, elaborative conversations can help children acquire the language and narrative skills that will allow them to talk about their experiences. However, young children, with immature language skills and little narrative experience, often do not initiate such conversations [43]. If the parent is also unwilling to initiate a discussion, perhaps due to his own avoidance, inaccuracies or distortions may occur [33] and the child experiences no relief. Insecurely attached children may develop avoidant coping strategies, such as active avoidance of traumatic memories, due to the lack of opportunities to openly discuss the event [44, 45].

Denial, a type of cognitive avoidance, could serve to adversely affect children’s memory for trauma, by limiting rehearsal opportunities and allowing misinformation, which could negatively affect the longevity and accuracy of memory. In these cases, the therapist might be the first adult to support organization of the memory system. When carrying out trauma-focused work, the therapist may therefore want to keep in mind the narrative ability of the child due to his caregiver- and attachment-situation.

Another point to consider throughout treatment is that impairment in mental health itself can affect how traumatic events are encoded and retrieved in maltreated children[46]. Elbert and colleagues have demonstrated the adverse consequences of PTSD on mental health and normal development. Significant impairment of cognitive development, working memory and remembering has been demonstrated through the use of memory tests and examining school grades[12]. The therapist may want to match his way of talking, exploring and bonding with the young client to the emotional, cognitive and developmental level and ability of the child. In this respect, we believe that the most serious problem disrupting the memory process in abused children and hindering later exposure, is the repeated dissociative shutdown defense reaction the organism is forced to adopt (see below: ‘Dissociative responding during exposure’; [47]).

Young children seem to be more prone to dissociate as a coping mechanism and are therefore more vulnerable to the development of dissociative disorders than older children and adults[48-50]. Additionally, highly dissociative children may be at risk of chronic feelings of depersonalization and derealization, resulting in memories that have a dream-like quality and seem unbelievable and not trustworthy to the individual. At the same time, childhood abuse survivors remember their torture all to clearly: Child maltreatment victims including children as young as 3 years of age, who score higher on measures of dissociation, were found to have more (not less) detailed memories of their abuse experiences [51-53]. To fully access these <hot and cold memory> contents, differential management of the dissociative stages is required, when the dissociative child is exposed to his/her traumatic material [47].
With respect to the memory system of young children, we want to consider during treatment that the understanding of trauma emphasizes the importance of subjective recognition and interpretation (the A2 criterion, Posttraumatic Stress Disorder, DSM-IV). Encoding of events in memory is dependent on experience and prior knowledge. How a young child interprets and understands a traumatic event is age related. Even very young children appraise events, and infer consequences based on their knowledge about the world. However, these cognitions and associated fears may be unrealistic, fatal and upsetting. Age and development adjusted cognitive work may help.

Therapeutic interventions differ depending on whether we work with a young child recalling current traumatic events or an older child recalling events from years before. Differences occur according to the developmental stage and the time passed since the event, it’s storage in memory and recall. Therefore it is important to adjust the narrative procedure to the cognitive and language apparatus, the meaning making and the ability to engage in a therapeutic relationship etc.

Memory increases with age. We know that even young children are capable of long-term remembering. They can accumulate memories of their past, including memories of trauma[36]. In order to avoid prolonged suffering and the risk of serious developmental problems, trauma treatment should take place as soon as the child is mature enough to be able to verbally recall these events in narrative form. However this cannot take place before the emergence of language skills, socialization and cognitive development.

**CORE EXPOSURE ELEMENTS IN EFFECTIVE CHILD TRAUMA TREATMENT APPROACHES**

Cognitive behavioral therapy is established as an effective approach for treating trauma.[54]. A recent systematic review of the effects of interventions for trauma symptoms in children and adolescents revealed that individual and group CBT was effective in reducing symptoms [55, 56]. Trauma-focused CBT has proven to be efficacious for children who have experienced sexual trauma, but also for children with other traumas [57, 58]. The exposure-specificity of trauma focused CBT (tf-CBT), is gradual exposure to the child’s traumatic experience and the construction of a trauma narrative [59-61]. The construction of the narrative is based on the rationale of overcoming avoidance of traumatic memories. Following the same principles underlying Narrative Exposure Therapy (NET), in tf-CBT the therapist and the child aim to contextualize the trauma into the larger perspective of the child’s whole life. Children are encouraged to confront increasingly detailed and distressing abuse-related reminders and memories. They create narratives of their traumatic experiences, typically by writing and illustrating a book in tf-CBT. Exposure takes place over several sessions on the level of facts, trauma-related emotions, cognitions and different sensory elements (see KIDNET below). Once the child has written down (or documented in a different form) the narrative of the trauma(s) in tf-CBT the trauma material can be shared with the caregiver in a separate session.

Another approach, Eye Movement Desensitization and Reprocessing (EMDR) has been demonstrated to be effective for adults in some of the meta-analyses [62, 63]. There are child-adjusted manualized protocols for EMDR [64-66]. The works of Greenwald, Lovett and
Tinker were pioneering in introducing the EMDR exposure format to children and valuable aspects of its application in child psychotherapy were demonstrated [67-70]. <Adaptive information processing> was named as the theoretical rationale for exposing the patient to traumatic memories in EMDR [71]. This model assumes that in general, all new information is encoded by a physiological information processing system in an adaptive way. Information is thought to be stored in networks including related thoughts, images, emotions and sensations, and there are links between associated networks. New information and new events will be stored in close proximity to a network of previous events with similar characteristics and might share some elements. In traumatic and distressing events the related information cannot be adaptively processed and stored. Therefore unprocessed memories become the basis for PTSD-symptoms later on. Building new connections within the memory network during exposure results in integrating the event in the network; later the eye movement itself was thought to help processing traumatic material between the two brain hemispheres [71]. During trauma exposure, the worst moment of the traumatic situation is ideally selected as the trauma target. The child is repeatedly asked to imagine the worst moment of the trauma and negative cognitions are replaced with more positive ones, carefully controlling for the distress of the child. By asking for the trauma-related cognition, emotion and body sensation, the stepwise activation of the trauma network is completed and reevaluated until closure is achieved.

NARRATIVE EXPOSURE THERAPY FOR CHILDREN AND ADOLESCENTS (KIDNET)

Narrative Exposure Therapy (NET) was originally designed for child and adult survivors of multiple traumatic events who suffer from severe and chronic trauma symptoms in resource poor (rehabilitation) settings [15, 16]. Since the first manualization of NET in 2005, the treatment of children was included in the approach. For this purpose the intervention was equipped with complementary modules and called KIDNET (see Schauer, M. et al., 2005/2011)[72]. The child-specific tools (i.e. the <lifeline>) have subsequently crossed over to the adult NET intervention. Its efficacy was tested in several randomized controlled trials with children suffering from multiple and complex trauma in Europe, as well as war traumatized children in Asia and Africa (see also table 1). Meanwhile, further developments show it is also suitable for civil complex trauma (e.g. borderline personality disorder) [47, 73]. Substantial evidence summarized in reviews suggest that NET and KIDNET are effective as a sole intervention, but they can also be used as part of a psychological treatment package in which other approaches can be incorporated [32, 74].

THEORETICAL BACKGROUND OF KIDNET: THE NEURAL REPRESENTATIONS OF THE TRAUMATIC EXPERIENCE

In Narrative Exposure Therapy for adults (NET) and children (KIDNET), the therapists is guided by the theoretical knowledge about formation, storage and retrieval of traumatic

* For a comprehensive description see Schauer, Neuner, Elbert 2011.
memories in particular, from the associative connections that have formed in response to repeated experience of fear and traumatic stressors. Characteristic symptoms of most types of trauma survivors – children as well as adults – are intrusions [exceptions include patients with salient dissociative shutdown responding [47]]. Intrusions are a vivid reliving of the traumatic situations that can include sensory information such as images, noises, smells, tastes, and also bodily sensations or aches and pains, or pseudoneurological signs. They are accompanied by intense involuntary emotions and cognitions. The reactivation can be so strong that the person is completely taken back in time and place and experiences a full flashback. Memories of the trauma are no longer contextualized – so that the individual experiences the event ‘as if’ it was happening again in the <here and now> [75]. Even though, traumatized persons frequently suffer from intrusions it is extremely difficult (and sometimes even impossible) to narrate the event in a detailed consistent chronological manner, namely to localize it in <time> and <space>. The narrations of traumatized individuals are usually disorganized, fragmented and incoherent. These pathological representations of traumatic memories is considered to be responsible for the core symptoms [15, 76-78].

To understand the pathological characteristics of traumatic memories, it is helpful to understand how normal past events are stored in memory. If we try to recollect a positive event in our life we activate our autobiographical memory. We have knowledge about certain life time periods, for example the period when we were in school or at university. We know where we lived and what we did during these periods. Of course we also have knowledge about general events like a typical celebration in our family or a Sunday afternoon visit to our grandmother. Finally we have knowledge about specific singular events, like for example our first romantic kiss, our wedding day or our first public presentation.

![Sensory-perceptual network](image)

Figure 1. Sensory-perceptual network, or hot memory or non-declarative memory (grey area) and knowledge about the life time period, cold memory or declarative memory (white boxes). For usual emotional events, both memory systems are closely linked and intercommunicative (adapted from Schauer, Neuner, Elbert, 2005/2011[15, 16]).
The knowledge about specific events is stored in sensory perceptual networks and the reactivation of these networks is usually connected to an understanding of the chronological order of how these events occurred as well as to the knowledge about the lifetime period in which the event has taken place. The sensory perceptual part is frequently called the <hot memory> and the knowledge about the lifetime period and other explicit facts are called <cold memory> [78].

Relevant triggers can easily activate the hot memory or non-declarative memory. It contains sensory as well as emotional and cognitive representations and is connected to the physiological reactions. If elements of this network are triggered by external or internal cues, the whole network structure is activated as the elements are closely linked together. Emotional episodes are coded in memory as networks of mutually activating information units. When processing the network, activity in one unit is transmitted to adjacent units, and depending on the strength of activation, the entire structure may be engaged [79, 80]. Normally this firing of the whole network is followed by an activation of the memories of the context (the information regarding the <when> and <where> details of the event that has taken place). Whenever this connection with the <cold> context information is not adequately established, the activation of the sensory-perceptual components is accompanied by a <here and now> feeling, so that the person actually feels like it is happening again in the present moment.

In contrast to hot memory, cold memory is deliberately retrievable. It contains knowledge about events in the context that they occurred, including the temporal and spatial context and also information relating to the lifetime period. This enables us to report certain events in chronological order.

The functioning of brain structures is important for memory coding. The medial temporal lobe including the hippocampus is strongly affected by traumatic stress via stress hormones. Under very high levels of traumatic stress, the function of the hippocampus and related neural networks becomes impaired. The trauma-fear network activates multiple but incompatible sets of place cells. This adds to the distorted autobiographical memory storage and affects other brain areas [16]. At the same time, the amygdala (the structure of the brain that prepares the body for danger) and interconnected frontal lobe regions respond even more vigorously. The individual experiences fear and a hyperactive, exaggerated response is elicited.

Under tolerable stress levels both memory systems operate together so that thoughts and emotions as well as sensory perceptions acquire a temporal, spatial context and are linked to a lifetime period and a specific event. Unfortunately, under the condition of severe stress these two memory systems and the related brain structures becomes dissonant. If the person experiences a threatening or extremely stressful traumatic event, the body reacts with a cascade of adaptations to prepare for survival. Essential stress messengers are catecholamines and cortisol. The amygdala, which is essential for initiating the biological adaption to stress, is also essential for the regulation of these stress hormones. Chronic excess may result in reduced cognitive capacity, and impairment in explicit and working memory. For instance, it will cause degeneration and atrophy of cell branches and finally neural cell death. Imaging techniques have shown a reduction in volume in essential structures required for memory, like the hippocampus, in response to continued stress during childhood but also in response to terrifying, traumatic situations [81]. This effect is particularly strong if the stress takes place between the age of three and six years or prior to puberty[10].
Under moderate stress, e.g. work stress, the stress mediators strengthen the plasticity of the hippocampus which is responsible for cold memory, including the consolidation of temporal and spatial context. If there is a threat to physical integrity or life, under traumatic stress an immediate surge of epinephrine is followed within one hour by a marked release of cortisol. This increase of cortisol limits the plasticity of the hippocampus and its impact on cortical structures, but facilitates activation of nuclei in the amygdala. As a consequence, following experience of traumatic events, a traumatized individual can barely answer questions like “When did it happen?”, “Where did it happen?”, “What was the exact sequence of events?”

As a result of the lowered thresholds for amygdala activity, the hot / non-declarative aspects of the situation form stronger memory traces and massive interconnectivity between the elements within the sensory-perceptual network are developed. Whilst the consolidation of contextual information of the traumatic event is scarce, elements of the sensory-perceptual network are literally burnt into memory [82]. Under traumatic stress, the connections between elements of the hot and cold memory are almost completely missing. The experience of a single traumatic event is usually still sufficiently connected to autobiographical memory. However, survivors of traumatic stressors who present with psychopathology, have usually experienced multiple traumatic events. They have often lived through the same type of trauma again and again in similar ways, or through multiple types of stressors (for example a natural disaster, family violence and war) that contain elements of repetition. For example ‘disgust’, ‘fear’, ‘pain’, ‘penetration’ would be similar each time the child is abused, but the offender(s) involved and the places this happens may be changing over time.

![Diagram of traumatic stress responses](image)

**Figure 2.** Traumatic stress causes a detailed consolidation of the elements of the hot memory with strong interrelation between these elements, while only very little cold information is stored. In addition, the elements of the hot and the cold memory system are no longer linked together (adapted from Schauer, Neuner, Elbert, 2005/2011[15, 16]).
So if the same experience is integrated into an already existing network of traumatic memories, the connection to the <cold> autobiography is lost. The sensory, cognitive, emotional, and physiological elements interconnect with increasing mutual excitatory power. At the same time, elements of the cold autobiographical memory, the codes for the context, inhibit each other as the brain’s architecture does not allow the activation of representations of two different places or two different periods at the same time. For instance, the memory for the location is coded by place cells in the hippocampus. These are neurons that exhibit a high rate of firing whenever the person is actually at the specific location or imagines himself or herself to be in an environment corresponding to the cells’ <place field>. As only one set of cells can remain active at any given time, the fear/trauma network gets disconnected from time and place, and the fear generalizes, giving rise to a permanent feeling of impending threat [16].

Figure 3. Schematic presentation of a fear/trauma network resulting from multiple traumatic experiences (adapted from Schauer, Neuner, Elbert, 2011[16]).: According to the <Hebbian concept>, an excitatory link will be formed or strengthened when two neural units that connect are simultaneously active during a behaviorally relevant moment, if threats to life and bodily integrity, violence or other traumatic experiences appear. A neural network that represents the essential information of the trauma is strengthened: the thoughts, the affective and physiological responding (HPA modulation with sympathetic arousal or vasovagal shutdown) become connected to various sensory memories to form a trauma network of hot memory[16, 47]. With repeated exposure to traumatic stressors, many corresponding stimulus representations – the tsunami, the war, familial violence – become mutually excitatory with this neural trauma network.
Consequently, efficient exposure treatment of survivors of multiple, complex and continuous trauma, needs to target all major traumatic events and integrate them into the greater autobiographical sequence, consisting of other stressors, positive experiences and life events. Emotional engagement in imagery exposure and disentangling the different associative event strings to properly connect each one to its specific context information in <time> and <space>, is key.

**The KIDNET Approach in Detail**

KIDNET was developed as a culturally sensitive trauma intervention for child survivors of multiple trauma, including complex trauma. It is important that KIDNET is adaptable to field- as well as rehabilitation settings, and disseminable to professionals with tertiary education as well as to helpers without academic training in resource poor countries during war, crisis and continuous trauma. In addition to the primary goal of treating children suffering from traumatic stress, KIDNET also aims to do justice to the survivors of interpersonal violence by documenting the life stories and using these documents for children’s rights work. The focus is on recovering from psychopathology and also on regaining the survivor’s dignity.

KIDNET is a short-term treatment module with around eight to ten sessions, each lasting 90 to 120 minutes. Ideally the sessions take place once a week so that the treatment can be completed in two to three months.

1st and 2nd Session: Diagnostics, Psychoeducation and Lifeline

The first session includes diagnostics and psychoeducation for child and caregiver. The child and his/her parent (or caregiver) are informed about the origin of trauma spectrum disorders, their symptoms and the rationale for treatment. Both the child and parent learn that in a traumatic situation the child experienced an alarm response, which had an influence on the way the traumatic event was stored in the memory and that these memory problems are the main reason why the child is still suffering from intrusions and other PTSD symptoms. It is also explained that it is therefore necessary to look closely at what has happened during the whole life of the child, with a focus on the traumatic experiences, to allow the memory the opportunity to store these traumatic memories properly. The aim is to integrate the events in the correct <time> and <place> on the lifeline and to contextualize it in the autobiography of the child. During the psychoeducation it is necessary that the parent/caregiver is present and also understands that the treatment includes an intensive working through the trauma situation(s). If possible, the caregiver is committed to support the child before and after the treatment sessions. The psychoeducation should also target the possible scenario of avoidance in the parent, if they are also traumatized.

Once the consent of child and parent is obtained following psychoeducation, the treatment can commence and is carried out with the child only. The discussion of the traumatic event with the child would be likely to trigger emotional reactions in the parent and there is insufficient time and capacity in the treatment session for the therapist to manage the emotions of the parent in addition to those of the child. Furthermore, many children do not

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For a comprehensive description see Schauer, Neuner, Elbert, 2011, [16].
feel completely free to talk about all their emotions when the parent is present, as they want to protect their parent. To work through the traumatic experiences of the child and parent together does not seem possible when considering the theoretical model underlying KIDNET, as the fear network is a highly subjective construct. If the child and parent want to share their experiences it is recommended that individual treatments are first provided to both. However, talking about these experiences must be delayed until consolidation and restructuring of the parents and child’s memory has occurred. In cases of child abuse by a caregiver/parent, the perpetrator must not be involved in treatment.

In the second session the lifeline exercise is carried out (please see Schauer, Neuner, Elbert, 2011[16] for details). This also serves as a method for anchoring traumatic events in the autobiography of the child. The lifeline has become a symbol for Narrative Exposure Therapy, because it represents the life-story of a person in a ritualized and symbolic way. Hereby, survivors lay out their path of life along a rope or string that symbolizes the contiguous flow of time. For this module, the child is offered a cord as a symbol for his life and <stones> and <flowers> in different forms, sizes and colors as symbols for good and bad as well as sad events that the child has experienced during his life. The cord is almost completely unrolled, but part of it remains ‘hidden’ as a ball. This part symbolizes the unknown future. The child is asked to place stones and flowers in chronological order for events in his life that were emotionally arousing or of importance. Beyond this, the child is encouraged to recollect his course of life, including happy, positive moments that have happened during his life. We suggest abstaining from introducing further symbols. Flowers and stones carry a clear message and give structure. However, since <fear-stones> are different in their dynamic to <grief-stones>, a stone with a candle maybe an adequate symbol for a loss or the bereavement of an important person.

The patient starts with a first symbol for his/her birth, which is put down at the very beginning of the rope. The symbols are then placed in chronological order. Information about our life as an infant or toddler can be symbolized and placed as “I was told that...” or “I know from early documents...”

The process of laying down stones and flowers is actively guided by the therapist who helps the child to remember and restructure memories and maintains an awareness of the chronological order by asking for the <time> and <place> for every single event. We want to make sure that the themes that were mentioned during the diagnostic session find their symbolic expression at the right <place> of the lifeline too. The aim of the lifeline is to get a detailed overview over the child’s memory of his/her life. The therapist verbalizes and summarizes what he or she understands from the survivor’s life-map. It is important here to encourage the child to give each symbol (flower or stone) a heading or name and to clearly pin it down in time and space. Usually a short sentence or a few words are enough to characterize a lifetime period or a distinct event without going into detail. In addition we want to collect the most important contextual, <cold memory> information for each of these chapters. The therapist ensures that during the lifeline exercise, there is no detailed imaginary exposure to the emotional content of the event, since the fear network should not get activated. Helpful questions are context driven, such as “How old were you at the time of this accident?”, rather than hot memory triggers such as “Did you feel extremely frightened during the accident?”. The basic rule therefore is to stay focused on the <cold>, factual information to avoid overwhelming emotions and prevent further fusion of hot memory contents. After the lifeline has been laid out, the child and the therapist take time to appreciate
the important work achieved. The child might want to talk about this experience of looking at his life.

After the lifeline is completed, the child is asked to make a drawing of the lifeline and its symbols. Alternatively the therapist takes a picture so as not to lose the information provided. The lifeline serves as a road map for the forthcoming sessions and will be the guideline for the child and the therapist. The lifeline also helps the therapist to plan the different treatment sessions and to decide on which events to focus on.

The lifeline is to be laid out in one go within one session (90 min)(please see Schauer, Neuner, Elbert, 2011[16] for details). In the following session the narration must begin. The lifeline exercise is not an activity over several sessions as a type of talking about events, or to be used as a sort of ‘exposure light’, which was not found to be an effective approach for survivors of trauma.

3rd – 8th Session: Narration of the Life Story of the Child

The narration begins no later than during the third session. In the first session after the lifeline, the child and the therapist start to talk about the child’s life in chronological order. Therefore the first phase of life to talk about is the very early childhood of the patient. During this stage of life we do not have our own memories, but are likely to have access to formative tales and the judgments others relayed to us. The therapist can help the child get started by asking the question “When/Where were you born? Has someone told you?” Whether these are true or not, these stories and interpretations have an impact on our self-perception and the way we look at our life. Meaning-making of this part of our biographies is as essential as later stages of our life journey.

Example of the Beginning of a Narration

“My name is Selver Yanalak. I was born in Turkey on the 23rd of July in 2003. My mother and my father lived in a village called Nakipinar. I think they were very young. Before I was born they went to Diyabakir. First they stayed at my auntie’s house. She is the sister of my mother. I was born in the hospital in Diyabakir.

After I was born my parents went back to Nakipinar. My aunt told me later that my mother didn’t want a daughter. She said that in the beginning, she didn’t want to be with me much because in our country, the firstborn should be a boy. My aunt had to carry me a lot. We lived together with my grandparents, the parents of my father. My grandfather was called Mehmet and my grandmother was called Zeynep. My uncle and my auntie also lived there. I sometimes played with my grandparents. I loved my grandfather a lot and I loved to play with him – he was really funny and he gave me a lot of sweets. I remember the red paper they were wrapped in...”

The child and the therapist will talk about all of the important events and moments in the life of the child – positive ones as well as stressful ones – in chronological order. During this process, we continuously work on two levels: the time back then in the past, and the moment right now in our therapy room. For example in the narration above, the statement that the mother would have preferred to have a boy, is accepted and written down. In the same moment however, we would ask the child how she feels about such a statement from the aunt. In this way we want to include the experiences from the past, but also the experience of talking and reflecting about them now.
The focus is on the traumatic events (see below). During this process, the therapist is documenting the life story of the child in written form in the first person and past tense so that the child can receive his autobiography in the written form of a small booklet at the end of therapy. The idea of receiving a document about his own life is a highly motivating factor for the child during the treatment.

Since the focus is on the exposure parts to all of the memories of traumata along the lifeline, treatment sessions will always take approximately 90 to 120 minutes as the detailed exploration of a <stone> might take at least 60 minutes.

Since the work is strictly chronological, at the beginning of each session the therapist and the child can locate on their ‘road map’ the progress they have made so far. Therefore the child and the therapist take a look together on the lifeline and see where they have arrived in the co-construction of the narrative about the life of the child. This is to ensure maximum transparency in the treatment process for the child. Afterwards the therapist reads out the preliminary narration of the life story as recorded in the session(s) before, or at least summarizes the narration. Sometimes, if a <stone> was extremely stressful for the child, the event is worked through in detail a second time. This is to ensure habituation and anchoring of memories. After reading out, summarizing or discussing again the preliminary narration, the work of the life story is continued. By the end of the treatment the child has narrated and the therapist has documented the whole life story.

**Last Session: Lifeline and Narration**

During the last session the child is encouraged to lay down the lifeline again. This is especially important in cases where the original lifeline deviates significantly from the final version of events as they emerge in the course of the narrative therapy. Laying the lifeline again at the very end of treatment as a closing ritual is usually helpful for complex trauma patients (such as those who have suffered childhood sexual abuse). This final activity is preferable to reading the whole narrative again (as we would suggest doing in multiple trauma survivors who have been exposed to many different event types (please see Schauer, Neuner, Elbert, 2011[16] for details). This time the child is also asked to select three flowers, which s/he really likes. With the help of the therapist, a wish or hope for the future is dedicated to each flower and laid down on the unrolled part of the cord that symbolizes the future. These hopes and wishes for the future will also be added to the written narration.

In a closing ritual, the Gestalt of the life is honored together and the narration document is signed by the child, the therapist and other persons (for example an interpreter or co-therapist who has attended the eyewitness testimony). At the end, the narration is handed over to the child. The child, together with the therapist, considers for which further purpose he wants to use the narration e.g. take the document home, leave it with the therapist or use it for children’s rights work or for legal procedures.

**How to Work with <Stones> during the Narration of the Life Story:**

**The Exposure Component of KIDNET**

Even though the whole life story of the child is recorded during KIDNET, the focus is on the detailed exploration of the traumatic events (<stones>).

Owing to the lifeline session, the therapist already knows most of the types of traumatic events that the child has experienced and when they occurred. During the therapy, the child and therapist work according to the lifeline in chronological order through all of the good and
bad events. In case of nescience because the memory content had not been accessible or was suppressed so far, the therapist may suspect the proximity of an event through observing the behavior of the child. Whenever the life story is coming close to a <stone> in the biography, the child becomes observably agitated and fearful. The child might want to avoid talking or thinking further about the event. For the child, these moments are very sensitive and difficult to bear. The therapist wants to ensure a directive, supportive and empathic guidance. Another avoidance strategy used by children who are trying to be compliant but are fearful about discussing events is to increase the speed of speech or to rush through the situation. The task of the therapist here is to express appreciation that it is very difficult and to give a convincing reason for why the exposure procedure has to be very detailed and in slow motion from now on. Intending to get a clear picture of the situation before the event and localizing it in <time> and <place> is a good starting point to anchor the event in the past. The therapist then uses clear and guiding questions to explore the event and connect hot and cold memory in every moment. The therapist supports the child in talking about the trauma in chronological order and at the same time contrasts the feelings, bodily reactions, sensory information and thoughts of the time when the trauma happened with those of the present <here and now>. It is important to also explore the meaning of everything that happened during this traumatic situation. At the same time it is crucial to offer an empathic guidance to the child by verbalizing all emotions, thoughts and also observable behavior during the exploration. The major task is to connect continuously and throughout the narration the <hot> memory contents to the <cold> contextual facts. In this way implicit memory contents are made explicit. Full emotional engagement in the past course of action while contrasting these experiences with the present feelings when talking about the event, helps the child to stay well connected to the therapist, prevents flashbacks and avoidance and facilitates alleviation. The child feels secure support and learns that it is possible to think and talk about past horrific experiences without being overwhelmed and helpless again.

**Box 1. Connecting hot and cold memory contents and contrasting the past experience with the present**

<table>
<thead>
<tr>
<th>Cold Memory</th>
<th>Hot Memory</th>
<th>Contrasting Then and Now</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beginning:</strong> What were the exact circumstances before the traumatic event happened?</td>
<td><strong>Sensory information:</strong> Seeing? Hearing? Feeling? Smelling? Tasting?</td>
<td>e.g. What did you smell then? What do you smell right now, when we talk about it?</td>
</tr>
<tr>
<td><strong>Time:</strong> When did the incident take place?</td>
<td><strong>Emotions:</strong> What did you feel? Helplessness? Fear? Anger? Desperation? Disgust?</td>
<td>e.g. Did you feel helpless then? How do you feel right now?</td>
</tr>
<tr>
<td><strong>Location:</strong> Where did the incident take place</td>
<td><strong>Cognitions:</strong> What did you think? What did this mean to you?</td>
<td>e.g. What did you think in this moment? What do you think right now?</td>
</tr>
<tr>
<td><strong>Environment:</strong> Who / What was there?</td>
<td><strong>Physiological Reaction:</strong> How did your body feel? Heartbeat? Sweating? Trembling? Difficulties to breath?</td>
<td>e.g. Did you tremble at that moment? How are your legs now?</td>
</tr>
<tr>
<td><strong>Event:</strong> What happened step by step and minute by minute?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Example of a Written Narration

My Mother, my father, Göksu and I slept all together in one room. Göksu and I shared one bed. My mother and my father slept right next to us in another bed. Suddenly someone was knocking at the door. I immediately thought it might be the police. I was thinking about my father coming home with wounds very often and telling us that he was beaten up by policemen. I was full of fear when I heard knocking at the door and my stomach hurt immediately. My heart was on fire and was beating very fast. I sat up in bed with Göksu. My father left the room but did not open the front door immediately. My mother stayed with us and tried to calm us down. She said something like: “Do not worry. Nothing will happen to you.” Then my mother went outside the room. Then Göksu and I also left the bedroom and joined our parents outside in the hall. It was dark night. We were shivering.

My father and his brother Mehmet were standing right next to the door. My grandmother and my mother were standing a little bit further away and Göksu and I were standing behind them. I could see everything very well now. The light was switched on. My father opened the front door. When he opened the door, the soldiers came in. In this moment I felt very helpless. I was full of fear and hate for these men. The men wore green uniforms and had a strange smell. I cried immediately and took hold of my little sister Göksu. Both of us cried very loud. It was the first time the soldiers had come to our house. I had only seen them on the street before. The soldiers shouted and when they heard us crying they ordered “shut up”! Especially one of them looked scary. He had dark eyes, was very tall and big. I could see them handcuffing my father. They took hold of my father and forced him outside. They also took my uncle Mehmet outside. My father was standing so that he could see us. I could see that he was very sad – I could see the sadness in his eyes. When I saw them handcuffing my father I shouted loudly that they should release my father. I thought that they would beat up my father and realized they would take him. At this moment I was worrying about the whole family. I shouted: “Release him!” Then one of the soldiers came to me. He wore a cap. He was still very young. When he came towards me I had a strange feeling. I was afraid and worried about what he would do to me. He grabbed me and threw me violently on the floor. My sister Göksu was also thrown on the floor. The soldier shouted: “Shut up you bloody bastards!” I was afraid that he would beat me up just like my father. I remembered the scars I had seen on my fathers skin so many times when he came home from work. I realized in this moment, that I had lost my voice. My body grew stiff of fear. I was petrified.

I was still lying on my belly on the floor an couldn’t move when I saw them taking away my father and my uncle. My father turned around to us and I could see that he was desperate. I could see it in his face. I was very worried about my father because I was afraid that they would kill him or do other bad things to him. I felt so helpless. My mother told us not to cry. But there were still policemen in our house...

During the session it is very important that the therapist keeps in mind the course of the <fear curve>(please see Schauer, Neuner, Elbert, 2011[16] for details). Before the first exposure session to the traumatic event, the child is often convinced that the fear will increase infinitely and will become uncontrollable. Indeed, during the confrontation with the trauma material, fear is rising significantly and also physiological and emotional reactions are felt as they were during the actual event: thoughts, emotions, behavioral dispositions and even sensory perceptions are present from the past event. Avoidance seems to be the only solution for relief. After the first exposure session, the child will have learned that the immense fear and other sensations reach a plateau like crossing a mountain peak, after which the horror subsides, anxiety decreases, and the incredible happens: when staying long enough in the <hot spot>, it is suddenly possible to be emotional engaged and in contact with the trauma material, to talk about details and to imagine the scenes without panicking any more. It is key for the survivor to have this experience. It is not avoidance that brings an (illusionary) end to
the fear, instead physiological and emotional responses have to decrease while talking about the worst moments: for a successful treatment it is essential that the fear increases and then decreases again whilst the recollection of the traumatic situation is still vivid and intensive. Therefore it is helpful for the therapist to visualize a <fear-curve> while performing the exposure and to continuously check back with the client. The meticulous reconstructing of all of the cold facts and also all elements of the hot memory helps to ensure that the exposure to the hot spot is sufficiently long that relief can occur.

With the fear curve in mind it is obvious that the session cannot be ended before the child experiences a certain amount of emotional and physiological relief. Again, this habituation must occur whilst the child is still in contact with the trauma material, and not only due to leaving the situation or speeding up the narration or using relaxation techniques. After the successful exploration of the traumatic scene, in the next session the fear will still increase when rereading the narrative, but to a much lesser extent compared with the first exposure.

Sometimes exploring a traumatic situation is difficult for a child. Putting everything into words can seem impossible. Therefore KIDNET offers different creative tools to facilitate engaging in the traumatic scene. One of these tools is the use of drawings. The child is offered the opportunity to draw a picture of the traumatic scene. The drawing facilitates a change in perspective (actually looking on the scene from a different angle of the room) while talking about what has happened. The therapist accompanies very carefully what the child is drawing and names everything, making sure that the content is included into the narrative. This change of perspective through playful activity can also be achieved by using small chess figures or acting out the traumatic scene as if on a stage. Again this role-play is accompanied by a continuous conversation and reconstruction of the autobiographic memory. Another creative tool that KIDNET offers is the use of body positioning. This powerful tool should only be used if the child has severe difficulties accessing the fear network because he is under-engaged. Again, this tool is only meant to facilitate the narration and therefore is accompanied by a continuous conversation between child and therapist. During the <body position> the child is asked to resume the body position he held during the traumatic event e.g. crawling under the table. Emotions, thoughts and bodily reactions as well as sensory perceptions can be re-activated while taking the exact body position during the traumatic event, and therefore recollection is facilitated. On the other hand, body positioning can be used in a different way for children who are over-engaged and too panicky: Using a different body position during therapy and focusing on the contrast between <then> and <now> can calm a child down sufficiently to enable them to tolerate the imaginative exposure.

It is important to ensure the chronological order of the traumatic event when using creative elements like drawing, role-play or body position since all of these tools are only meant to support proper exposure therapy, of focusing on the perceptions which tell the trauma story, on mental reliving of the events to reach integration. None of these tools should be used as an isolated exercise, but only in the process of the autobiographic reconstruction.

**DISSOCIATIVE RESPONDING DURING EXPOSURE**

The unintegrated (parts of) childhood events, which were in the past interpreted by psychologists as <repressed> and <split off>[84, 85], can be understood as an evolutionary evolved biological response to ensure survival i.e. in the face of rising aggression, the
situation of threat and disgust over body contact with the offender, of feared tissue damage and/or penetration [47].

Since children are physically weak and inexperienced, their defense possibilities are scarce and they are prone to dissociate in the face of a threat. They show stiffening of muscles, tonic immobility and unresponsiveness in the face of imminent threat [47]. As we have described elsewhere, tonic immobility is almost always displayed when the person is overwhelmed by threat and not able or allowed to act aggressively against the threat. Thus immobility functions to suppress anger in the victim and acts bidirectionally to inhibit aggression in a number of ways [47].

Maltreated children, with deprivation and neglect experience, might stop using defense and vocalization (i.e. crying) to get a caretaker to know that they are under threat, because the parent often causes the trauma. They show submission in situations when other strategies like escaping or fighting back have failed in order to stop aggression. For example, a child shows a fright reaction as the adult displays rising aggression. This may look like defiant behavior or refusal, since children may act as if they haven’t ‘heard’. This can provoke more aggression and therefore more threat, and make the child more anxious. Young children utilize a combination of adaptive responses, if the threat continues. Their shutdown surrender response includes immobility, ‘compliance’, complete dissociation and, in the extreme, fainting [47, 86-88]. Children’s frequency of syncope is associated with parental psychological functioning [88, 89]. It has been demonstrated that shutdown episodes of fainting were more frequent in children living in families with stepfathers than those living with biological fathers, suggesting an important role of parents’ psychological stress and aggression on children’s syncope. Furthermore tonic immobility (holding still) in children reduces the risk of tissue damage, for example during penetration. Childhood sexual abuse involving attempted or completed penile-vaginal penetration is more likely to be associated with increased experiencing of immobility (rape induced paralysis) [47]. And finally the motionlessness in fright-reactions (feigning death) serves to eliminate cues for aggressive or predatory behavior: stiffening of the voluntary muscles can occur during direct physical contact with the carnivore or the human perpetrator.

Once in therapy, the posttraumatic fear network is activated through exposure techniques, i.e. when the survivor reports parts of his or her experiences. To unravel dissociated contents, which can eventually help dissociation in every day life to remit, it is vital to ‘heat up’ the memory traces by activating the associate fear network of the event and to engage the neuronal substrate in the autobiographic chronological ‘vicinity’. This will also activate the related support physiology of behavioral responses that have been engaged during the traumatic experience [90-92]. Therefore, any trauma-focussed approach requires the management of dissociative stages. Since exposure to trauma material reactivates the response pattern of the past event (re-exposure to evocative stimuli), children may seem to be numb, robotic, nonreactive with increased vagal tone during the treatment session. Children who show dissociative reactions might stop talking and moving during the session. They can display profound withdrawal reactions. This surrender pattern of shutdown, is highly likely in complex trauma survivors. These are children with severe suffering of symptoms that debilitate their development. Appropriate trauma-focussed therapy is of utmost importance here to overcome trauma spectrum disorders, but at the same time facilitation of exposure therapy is more challenging in these cases than in uproar-PTSD (as opposed to shutdown-PTSD) with predominantly hyperarousal and intrusions[47]. For treatment success it is
important to overcome the dissociative reaction during the exposure to the traumatic material, i.e. to allow habituation while working through the hot spot. Discussing the lifetime-period, asking details of context information, the when and where’s of <place > and <time> and in this way slowly exposing the child to trauma material (see above The KIDNET approach in detail), while compensating for the shutdown responses [47] makes lost memories accessible. It is crucial to integrate dissociated childhood events into the life narrative and to counteract fright, flag and faint reactions during the exposure. Dissociation may otherwise prevent the full rehearsal of such memories, while at the same time, these memories that are shut off lead a destructive existence and canker the psyche.

There are three main areas of behavioral changes that characterize a shutdown reaction during the event peritraumatically and can also be observed later, when recalling the traumatic experiences[47]. The therapist needs to pay attention to the following conditions (from Schauer & Elbert, 2010, p 120):

1. Functional sensory deafferentation: Incoming stimuli seem not to reach beyond the gates in the thalamus, stimuli are perceived as weak, distant, and unreal. During treatment, the child may become unresponsive, with unfocused gaze;
2. Reversible palsy (stiffening because of heightened muscle tonus) leading to visible decrease of bodily movements and immobility, posturing, and finally waxy flexibility also during treatment;
3. Inhibition or disconnection of areas responsible for language processing and production of speech (unclear/ confused speech, fragmentation of sentences, inability to speak, almost no or belated response to acoustic stimuli).

For child-survivors with shutdown PTSD we therefore suggest a dosed confrontation in only tolerable portions: continuous shifting of attention between trauma-related material and the present <here and now> context by recalling reality. Furthermore measures to counteract sensory dissociation, to activate motion and to raise the blood pressure levels may be helpful [47]. Parents and teachers have to be educated that any threats of punishment will amplify the dissociative response in the child. Providing safety signals is key for terminating a surrender- or shutdown- reaction.

**BASIC RULES AND THERAPEUTIC AGENTS OF KIDNET**

Many treatment approaches for traumatized children require absolute safety and stability before they would start the treatment. KIDNET was specifically developed for children living as asylum seekers in Europe and for children living in post-conflict areas. Therefore complete safety is rarely possible. However, even if the situation outside the treatment room is not completely safe, the situation during the time of the treatment and during the time of the in sensu exposure should be safe. It is most important here to create an atmosphere of control and transparency. Therefore the child should always have predictability and know what the next steps in treatment are. It is also important to ensure that the treatment sessions will take place regularly, that the same therapist, co-therapist and translator will always be available for him and of course that there are no disturbances during the treatment session.
KIDNET requires an empathic, accepting and validating attitude of the therapist. During the exposure strong emotions can be evoked including fear and helplessness and also hatred and aggression. It is a core element of KIDNET that all emotions that are present during the process are to be accepted, and that the therapist remains in an understanding, unconditionally empathic but also congruent stance.

Naturally the feelings of the therapist will transmit to the child. This accepting attitude is also important regarding the behavior of the child during the traumatic event. It is crucial not to judge the behavior of the child negatively. In fact the meticulous reconstruction of the traumatic scene many times contributes to resolutions of guilt feelings as the child realizes that there were no alternative behaviors in the specific moment or that there was not enough information in that moment to have indicated a different course of action.

As the exploration of traumatic experiences invokes a lot of fear, the child should feel well protected and guided by the therapist during this process. The therapist therefore has to be directive and empathic at the same time, and show this by verbalizing feelings, bodily reactions, thoughts and giving unconditional attention to whatever the child is presenting during the treatment process. The therapist also gives a lot of praise to the child for all efforts made, and for describing all emotions. Emotions are not ‘bad’, but are a valuable and important part of life and therefore need not be pushed away (basic rules also see box 2).

Box 2. Basic rules in KIDNET (please see Schauer, Neuner, Elbert, 2011[16] for details)

<table>
<thead>
<tr>
<th>1. Safety</th>
<th>2. Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Predictability</td>
<td>4. Physical Integrity</td>
</tr>
<tr>
<td>5. Acceptance</td>
<td>5. Empathy</td>
</tr>
<tr>
<td>7. Congruency</td>
<td>8. Confidentiality</td>
</tr>
</tbody>
</table>

KIDNET aims to actively and chronologically reconstruct the autobiographic explicit and episodic memory. Due to the prolonged exposure to the hotspot and the activation of the fear network this treatment approach changes the emotional network. When completed, the elements of the hot memory are connected to the elements of the cold memory and the excitability of the associated network is markedly reduced. Physiological and emotional reactions as consequences of triggers can be understood by the child and they can be contextualized in <time> and <place>. The meticulous exploration of the traumatic scene also allows the child to better understand his behavior in the traumatic situation of the past. In addition, after the detailed exploration, many children understand the consequences the trauma has had on their life and the way they interact with peers and adults in relationship, e.g. not having close relationships because of the fear of being abused again or getting easily angry in close relationships. To gain an awareness of these consequences allows new perspectives to be taken, and can be a first and important step to change the current behavior.

Beside these agents, the fact that KIDNET has an explicit focus on children’s rights is a major therapeutic agent. Becoming aware that what has happened to them is a violation of children’s rights and receiving acknowledgment of this fact from teachers, parents, social workers and sometimes even from judges during legal procedures has a significant impact on regaining survivor’s dignity and therefore has a positive effect on the mental health and the future development for the child.
### Table 1. Studies on the Effectiveness of KIDNET in different countries and cultures

<table>
<thead>
<tr>
<th>Country</th>
<th>Trauma Type</th>
<th>N</th>
<th>Age</th>
<th>Interventions</th>
<th>Results in Summary</th>
<th>Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uganda – refugee children from Somalia</td>
<td>organized violence and war</td>
<td>6</td>
<td>12-17</td>
<td>4-6 KIDNET sessions</td>
<td>Significant symptom reduction. Effects remained stable at 9-months follow-up</td>
<td>[93]</td>
</tr>
<tr>
<td>Rwanda</td>
<td>organized violence (genocide)</td>
<td>26</td>
<td>14-28</td>
<td>KIDNET vs group-IPT 4 sessions</td>
<td>KIDNET superior to group-IPT at 6-months follow-up.</td>
<td>[94]</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>war and natural disaster (tsunami)</td>
<td>31</td>
<td>8-14</td>
<td>KIDNET vs MED-RELAX 6 sessions</td>
<td>Significant symptom reduction in both groups. No significant group differences. Effects remained stable at 6-months follow-up</td>
<td>[95]</td>
</tr>
<tr>
<td>Germany – refugee children organized violence and other types of trauma</td>
<td>26</td>
<td>7-16</td>
<td>KIDNET vs WL 8 sessions</td>
<td>Significant symptom reduction only in the KIDNET-group. Effects remained stable at 6- and 12-months follow-up</td>
<td>[96]</td>
<td></td>
</tr>
<tr>
<td>Sri Lanka (ongoing) war and family violence</td>
<td>47</td>
<td>11-15</td>
<td>KIDNET vs MED-RELAX 6 sessions</td>
<td>Significant symptom reduction in both groups. No significant group differences. Effects remained stable at 5- and 13-months follow-up</td>
<td>[97]</td>
<td></td>
</tr>
<tr>
<td>Northern Uganda organized violence</td>
<td>85</td>
<td>12-25</td>
<td>KIDNET vs AC vs WL</td>
<td>Significant symptom reduction in all three groups. KIDNET superior to AC and WL. Effects remained stable at 3-, 6- and 12-months follow-up</td>
<td>[98]</td>
<td></td>
</tr>
<tr>
<td>Northern Uganda organized violence</td>
<td>93</td>
<td>14-24</td>
<td>KIDNET-TE vs CRT vs ProbSolv</td>
<td>Significant symptom reduction in all three groups. Effects remained stable at 5- and 9-months follow-up</td>
<td>[99]</td>
<td></td>
</tr>
</tbody>
</table>

KIDNET = Narrative Exposure Therapy for Children and Adolescents; Group-IPT = Interpersonal Psychotherapy in groups; MED-RELAX = Meditation Relaxation Program; WL = Waiting List; AC = Academic Catch-up Program with elements of supportive counseling; KIDNET-TE = Narrative Exposure Therapy for Children and Adolescents plus Truth Education about the War; CRT = Conflict Resolution Training; ProbSolv = Problem Solving Sessions on Demand.
Facing Childhood Trauma

Box 3. Therapeutic agents of KIDNET
(from Schauer, M. et al., 2011, pp 35)[16]

What are the therapeutic elements of NET that have proven effective in trauma treatment?

1. Active chronological reconstruction of the autobiographical/episodic memory.
2. Prolonged exposure to the “hot spots” and full activation of the fear memory to modify the emotional network (i.e., learning to separate the traumatic memory from the conditioned emotional response and understanding triggers as cues which are just temporarily associated) through detailed narration and imagination of the traumatic event.
3. Meaningful linkage and integration of physiological, sensory, cognitive, and emotional responses to one’s time, space, and life context (i.e., comprehension of the original context of acquisition and the reemergence of the conditioned responses in later life).
4. Cognitive reevaluation of behavior and patterns (i.e., cognitive distortions, automatic thoughts, beliefs, and responses) as well as reinterpretation of the meaning content through reprocessing of negative, fearful, and traumatic events – completion and closure.
5. Revisiting of positive life experiences for (mental) support and to adjust basic assumptions.
6. Regaining of one’s dignity through satisfaction of the need for acknowledgment through the explicit human rights orientation of <testifying>.

In KIDNET the focus is on acknowledging the whole autobiography of the child and responding to the wish of the child for documentation and rehabilitation. Therefore, in addition to the process of habituation and the restructuring of memory, regaining justice and dignity are also major therapeutic agents of KIDNET. Since the whole autobiography is reviewed, including both stones and flowers, there is increased recollection of positive memories: valuable resources the child carries and builds on. In addition, the understanding of behavioral patterns is enhanced so that further personal development can take place.

TREATMENT OF CHILDHOOD PTSD – CHALLENGES FOR THE FUTURE

Exposure treatments confronting associative fear networks and constructing a coherent trauma narrative such as KIDNET have proven to be effective for the treatment of trauma related disorders in children and young people. Some of the studies demonstrating the efficacy of KIDNET were conducted with lay counselors educated to offer treatments in resource-poor settings where university-educated, well-trained psychotherapists are unavailable [95, 98, 100-102]. Such a model might also be valuable in industrialized countries where costs of the health-system are rising and only a small proportion of traumatized children in need of professional treatment are receiving it.

Even in societies living in peace, the number of children exposed to childhood adversity (including abuse by family members or peers) is high, and detrimental consequences maybe severe and long lasting. Sexual abuse is especially widespread (e.g., [5]) contributing to significant numbers of patients with mental disorders (OR for any mental disorder = 2.5; [103]). The mental health service provision sector has been unable to cope: “... the dominant form of clinical treatment– individual psychotherapy– is too “elite” to reach a majority of the
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afflicted… One-to-one therapy or even small group sessions involve high-cost models of care that require lengthy, close supervision by professionals.

As a result, only an estimated 20 to 30 percent of [those] who need clinical treatment receive it" [104]. We have proposed and implemented (so far only in war-torn areas) a cascade model that can serve the majority of abused survivors, ranging from preventive intervention for those at risk, to individualized treatment of those with incapacitating mental illness[16].

While there is a range of treatments available, they usually require too many resources in terms of one-to-one treatment by highly educated professionals to be offered to a significant fraction of survivors of abuse, even in developed countries. Consequently, a range of measures – from low threshold counseling to highly professional psychiatric and psychotherapeutic support – is needed to prevent and treat mental and associated physical illness resulting from childhood abuse and other childhood trauma like natural catastrophes and organized violence.

CASCADE-MODELS INCLUDING BEFRIENDERS AND TRAINED LAY-COUNSELORS

A possible solution might be to counteract childhood adversity on a cascade of different levels. We have previously implemented such cascade model in Sri Lanka’s North-Eastern provinces [97, 105], where children were affected by civil war and sometimes by natural disaster (the 2004 Tsunami) in addition to the family violence which had increased in response to these stressors[13, 14, 97, 106]. During the war, one in four children presented with PTSD[12] and prevalence increased further in tsunami affected areas.[107]. Local teacher counselors from different schools were trained by a group of local experts from Jaffna University (Sri Lanka) and experts from the University of Konstanz (Germany). After being educated in trauma treatment (KIDNET and meditation techniques), these counselors (N=150)trained more than 1000 befrienders (mostly other teachers) in the ability to recognize children affected by traumatic stress and to direct the more severe cases to the counseling services. Two randomized controlled trials suggest that teacher counselors with a training in KIDNET are able to successfully treat PTSD in children [95, 97].

Moreover models with local lay counselors were also implemented and evaluated with randomized controlled treatment trials in Uganda with adult and child refugees from Rwanda and Somalia[101, 108] as well as with formerly abducted child soldiers and other vulnerable children in the North of Uganda [98, 99].

In yet another step, a cascade model was tested in Rwanda where clinical experts trained a first generation of local counselors and the effectiveness of their treatment was evaluated in a randomized controlled trial. Afterwards these local counselors (first generation) trained a “second generation” of counselors and again the effectiveness of the treatments offered by them was assessed. Both generation of counselors were equally effective in helping survivors of the genocide who were suffering from PTSD[100].

Based on the results from studies in different post-conflict countries we conclude that the implementation of cascade models and the supply of trauma treatment by trained lay
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counselors is possible and offers a means by which the high number of trauma survivors who
suffer from mental health problems can receive treatment.

EMPLOYING NEW MEDIA: INTERNET PLAT FORMS,
SMART PHONE APPS, CHAT ROOMS

During the last decades the internet through its WebPages, chat rooms and platforms such
as facebook and twitter, and more recently also smart phone apps, have become an increasingly
important low-threshold information source on physical and mental health issues[109].

Quite a number of studies have indicated the usefulness of internet-based therapy
addressing different mental health problems like Social Anxiety Disorder [110], severe health
anxiety[111], irritable bowel syndrome[112], Tinnitus [113], Panic Disorder [114] and
Bereavement or Complicated Grief [115, 116]. A meta-analysis and an RCT demonstrated
highly promising results for anxiety [117, 118]. Internet-based therapies / methods for the
treatment of depression have been established as well [119, 120].

Of course these studies with different mental health problems differ in the amount of
individual (e-mail, phone or face-to-face) contact between the therapist and the client and
many more variables. However, most importantly they all show encouraging results that
suggest it might be possible to make therapeutic use out of the Internet.

There have also been studies conducted that have used internet-based treatment
approaches aimed at easing the symptoms related to the experience of traumatic events in
adults that have produced encouraging results (e.g.[121-126]). Most of these studies also tried
to transfer exposure elements to Internet-based modules. Of course the treatment protocols
used in these studies differed with regard to the number of sessions, the severity of symptoms
patients were presenting with at the beginning of the intervention and the frequency of
interactions and cooperation between patient and therapist (stand-alone programs vs therapist-
assisted Internet-based programs). In addition we have to be aware that sample sizes were
rather small so generalization might be difficult. However, whilst taking all these limitations
into account, these studies provide a preliminary evidence base upon which further research
can be built, which open up new possibilities of providing treatment for affected young
people.

Currently there are few studies that have tested internet-based approaches for children
and adolescents, and these have focused on those suffering from childhood anxiety or specific
phobias (Spider Phobia) [127-129]. We are not aware of any studies focusing on children
who suffer from PTSD or who have survived trauma and are at risk of developing stress-related
illness. Even though children and adolescents are using the Internet and other new
technologies ever more frequently, it seems particularly challenging for them to find sound
information on health related topics [130-132].

Therefore both new-media based counseling and befriender-networks should be designed
in the future to prevent the development of mental illness in survivors[133]: Internet-mediated
counseling offers low-threshold first-aid to victims. Potential obstacles, which might hinder
victims to seek help (such as fear of stigmatization, therapeutic undersupply or high costs) are
avoided.
As described above, there is evidence for cascade models as well as for internet-based treatments. A combination of both might be a feasible way to counteract the high number of children suffering from mental health problems as a consequence of different types of trauma. The following cascade of layers of intervention is recommended:

1. **Messaging in schools and youth centers with the goal of psycho-education and early intervention**
   Teachers as well as social workers in youth centers are trained in the concept of trauma, epidemiological facts and basic intervention skills. They are attentive to signs of stress and trauma-related symptoms in children and also able to diagnose trauma-related problems. As trusted individuals, they are in a good position to provide information to the young people regarding reliable internet sources where they can get further (anonymous) support.

2. **Internet-based standardized diagnostic tools for children in need with regard to the experience of trauma[1, 2], resulting mental health problems and advice for further support:**
   On a reliable webpage, children can fill in diagnostic tools that are subsequently immediately analyzed. Based on the results, feedback is linked to recommendations depending on the severity of trauma experiences and mental health problems. Children with low symptom load will be referred to the internet-based treatment, children with a higher symptom load could be referred to individual face-to-face treatment by trained teacher counselors or befrienders and children with severe mental health problems and additional problems like ongoing violence, comorbid severe dissociative reactions or suicidality or other problems, will be directly referred to clinical or legal experts.

3. **A) Internet-based exposure treatment to prevent chronification for children with low symptom load:**
   Children with low symptom load according to the initial internet-based screening, will be referred to an internet-based self-help program including psychoeducation, information on epidemiological data and an internet-adapted version of KIDNET. Developing an internet-based version of KIDNET seems possible as the logic – namely telling the life story from birth until today – could be transferred into an internet-based intervention. Structured questions with regard to the hot memory (emotions, thoughts, physiological reactions and sensory details) as well as to the cold memory (autobiographic facts and the W-questions, when, where, who, what?) can be transferred to materials that are presented online. The child can write down the narration of his life step by step and following each internet session a teacher counselor or befriender will read the narration and give feedback. In cases where the narration is repeatedly not detailed enough – which could be a sign of avoidance – they will refer the child to some individual face-to-face sessions with a teacher counselor or befriender (see 3. B). In addition, regular screenings at the beginning of each internet session can be applied to check on the symptom load, suicidality or
ongoing trauma, and in cases of worsening, a referral to a teacher counselor could also be initiated.

B) Individual face-to-face treatment by trained teacher counselors and befrienders for children who suffer from severe symptoms:
Teachers and social workers, as well as other child experts, can be trained to treat children with KIDNET who suffer from severe symptoms of PTSD. If during the treatment additional problems like the described above arise, the children can still be referred to a clinical or legal expert.

C) Outpatient and inpatient treatment as well as legal assistance for children who suffer from severe mental health problems and other problems
The most severe cases with high comoribidity, self-harm behavior and/or ongoing violence should be referred to clinical as well as legal experts immediately following the initial screening or whenever these kind of problems are detected during internet-based treatment or treatment conducted by a trained lay counselor or befriender.

A combination of internet-based screening and treatment within a stepped care model needs to be adapted to the specific circumstances in communities and it awaits scientific evaluation. Built on the current literature and field experience, and taking clinical demands, the knowledge about exposure approaches and internet-based treatments into account, a multi-layered, cascade structured care system can make a difference in managing and treating traumatic stress in children. With all the excellent new technological possibilities in mind however, we should not forget that children need safe and real bonding caretakers who allow attachment, foster development and support them in overcoming traumatic stress.

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