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ICT-based Psycho-Social Trauma Relief in Refugee Camps in Ethiopia



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Picture: 2017, Hitsats Refugee Camp, Tigray region (Ethiopia). Photo by Mirjam van Reisen (copyrights)

We have made every effort to truthfully report the findings of the research. If there is any error or comment on the content of this report, we are grateful if you bring this immediately to our attention.

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0. Introduction

Given the experiences of a wide array of stressful experiences ranging from political oppression, to social and religious persecution, imprisonments, torture and dangerous flights, the prevalence of trauma in refugee communities is neither new nor unimaginable. Experiences of this magnitude are known to result in persistent psychological symptoms that simultaneously damage the victim's self-esteem as well as their trust in fellow human beings, leading to many experiencing changes to their identity (Barudy, 1997). Studies in refugee populations indicate levels of depression and PTSD range between 40 - 70% (Baingana, 2003) whilst this rate could have been compounded by displacement, it also indicates the possibility that a significant proportion of communities affected by conflict and political violence would be debilitated by psychiatric illnesses or severe psychological reactions to trauma (Silove *et al.*, 2000).

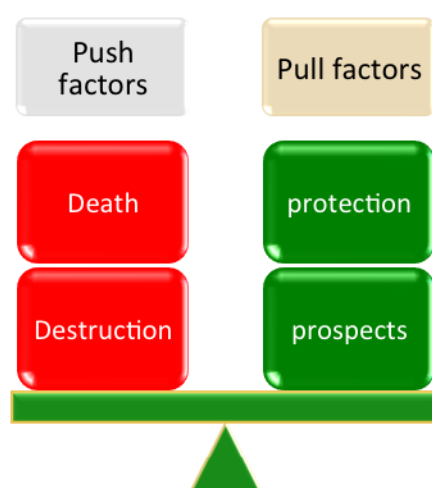
The impact on individual lives can also translate into a situation where whole communities could succumb to maladaptation detrimental to wellbeing in the long term. For instance in Cambodia, where there was a long history of violence, highlighted by the civil war in the 1960s, culminating with the "Khmer Rouge" rule destroyed the social fabric of the society, studies have found that refugees had high levels of psychiatric symptomatology after 10 years (Boehnlen *et al.*, 2004). A household survey of 993 adults from the largest Cambodian displaced-persons camp on the Thailand- Cambodia border, found that more than 80% felt depressed and had a number of somatic complaints despite good access to medical services (Mollica *et al.*, 1993). In a Mayan village everyone was observed to be experiencing a tremendous sense of guilt, fear, depression, loss, abandonment, despair, humiliation, anger and solitude as well as a devastating shattering of faith in God. This resulted in people retreating to passivity, conformity, and mistrust, incubating a cycle of vulnerability that continued to threaten recovery (Manz, 2002).

Despite the reality of multi-layered trauma, migration is seldom discussed in light of the impact of a traumatic event on migrants and their communities forming a great gap in our understanding and conceptualisation on issues relating to refugee protection and support. This omission trickles from media portrayal and popular discourse thorough to national and

global policies. The tendency often is to play down the implication of war and political violence and overemphasize the ‘economic incentives’ that are pulling refugees away from their poorer countries. This notion is based on one of the oldest models of migration - the Push and Pull model (Ravenstein, 1885; 1889). This overemphasis is a serious impediment to the development of policies for the care and protection of destitute migrants and hinders the fostering of policies and practices that enable the provision of the protection and prospects that refugees take so much risk to attain.

The push and pull model of migration considers all migration to be caused by economy. Theorists believe that they can predict the level of migration from one geographical place to the other based on the distance, population size and economic opportunities between the area of migration source and destination, here migration decisions are determined by ‘plus’ and ‘minus’ analysis (Lee, 1966; Passaris, 1989). Indeed the model has been used extensively to outline the outflow of Eritrean refugees with many descriptive analyses of the various political and socio-economic ‘push factors, that may be causing as many as 37,000 Eritreans to cross the Mediterranean to Europe in the first 10 months of 2014 alone (UNHCR). However in order for the plus and minus side of the equation to work as described (see fig 1), there needs to be a balance between the cost and risk of migration to create a rational decision to move (migrate) (Foresight, 2011; Henry *et al.*, 2004).

Figure 1: Push and Pull Theory of Migration



But as described above the risk factors entailed in the migration routes that many Eritreans refugees are choosing doesn't avail itself to such a balanced equation such as the one offered by the model. Rather we have a large list of factors all of which can contribute to migration but nothing to explain how these factors could interact with each other and/or combine together to cause the seemingly unabatable movement of the population (Skeldon, 1990).

In contrast to a perfectly balanced situation the migration out of Eritrea and then further away from Eritrea is actually a very skewed balance (see fig 2) with numerous risks that make the decision to move further, along the Sahara and the Mediterranean, to Europe an unsound decision for those whose quest is better protection and prospects.

Figure 2 Risks and benefits of Migration



The glaring omission in the push and pull balance is the impact of the experiences on the push side and particularly on the ability to analyse risks and opportunities and make 'rational' decisions.

For instance in the case of Eritrea, many credible reports into human rights in Eritrea (Amnesty, HRW), including the UN human rights commission report (UN Human Rights Council Commission of Inquiry on Eritrea) establish the prevalence of an atmosphere of extreme political repression including torture and inhumane treatment perpetrated against ordinary citizens. Torture, political violence and armed conflicts, whether targeted at an individual or towards the population at large pose an immense threat to the individual and the population on various levels (Modvig & Jaranson, 2004). Indeed there is ample evidence

suggesting, that aside from resulting in physical injuries or death, political violence including torture constitutes a traumatic threat to the integrity of the self (Chapman and Garvin 1999). Most people exposed to trauma will experience stress responses such as avoidance, sleep disturbances, hyper-arousal and hyper-vigilance, adaptive reactions that prepare the survivor to deal with on-going risks (Chrousos & Gold, 1992; Tsigos & Chrousos, 2002). Repeated or constant activation of the stress response on the body and brain known as allostatic load (McEwen, 2003; 2004) that corresponds to post traumatic stress creates a state of fear, hopelessness or horror in response to the threat of injury or death (Yehuda, 2002).

0.1. The relevance of healing trauma

This research will challenge the popular 'push and pull' theory of migration based on the impact of the traumatic experiences of people in refugee communities. It will first highlight the inadequacy of the push-and-pull theory in explaining migration such as those under discussion here and offer an alternative theory that captures the complex dynamics between trauma, perceptions of protection and prospects to explain the perspectives of refugee and their communities. This complex context thus becomes the context for the research that explores the possibilities of offering trauma support in order to reduce levels of posttraumatic stress disorder (PTSD) and enhance a more positive outlook on the livelihood prospects of refugees before they embark on the extremely risky migration that often costs them the very lives they are trying to save.

The individual distress and enduring pain and suffering, including post-traumatic stress disorder (PTS) and comorbid disorders, such as depression, caused by mass traumatic events like war, torture and human rights violations, are well evidenced (e.g. Maresella *et al.*, 1996; Turner, Bowie, Shapo, & Yule, 2003). However much of this discussion focuses on individual distress, ignoring the collective nature of the aforementioned calamities. This individualized focus on trauma limits our ability to conceptualize the problems and address them appropriately (Collier *et al.*, 2003; Wessells & Monteiro, 2001).

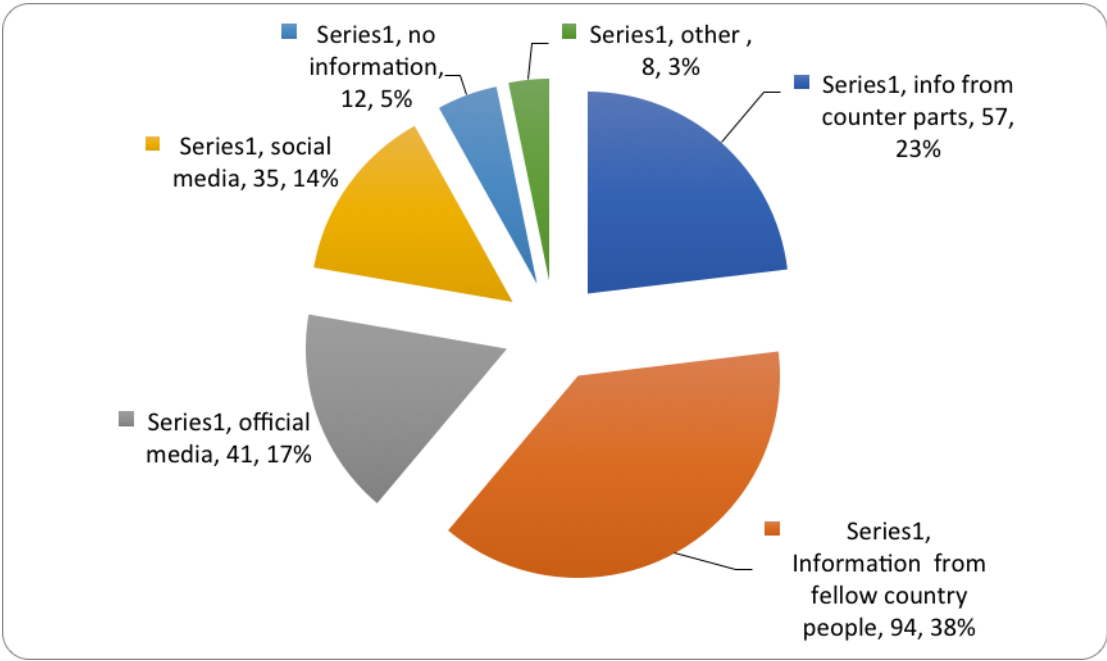
While, undoubtedly, individual victims of atrocities such as torture might experience PTSD and would clearly benefit from individual intervention and support, this type of intervention does not address the structural context that enabled such atrocities to occur in the first

place, nor does it address resultant problems, such as mistrust and the low social cohesion that often stems from the social, political and economic contexts that are incorporated into the collective consciousness, making the traumatic events become ingrained and inherent to the collective and, if left unattended, leading to them happening cyclically (Johnson, 2006). In addition, without a broad and collective approach to trauma and healing, practitioners often fail to respond to the reality on the ground, when the most overwhelming concern for survivors is not past memories, as such, but the stress of daily living in situations where their social support networks have collapsed.

0.2. The relevance of ICT: On refugees, social media and information exchange

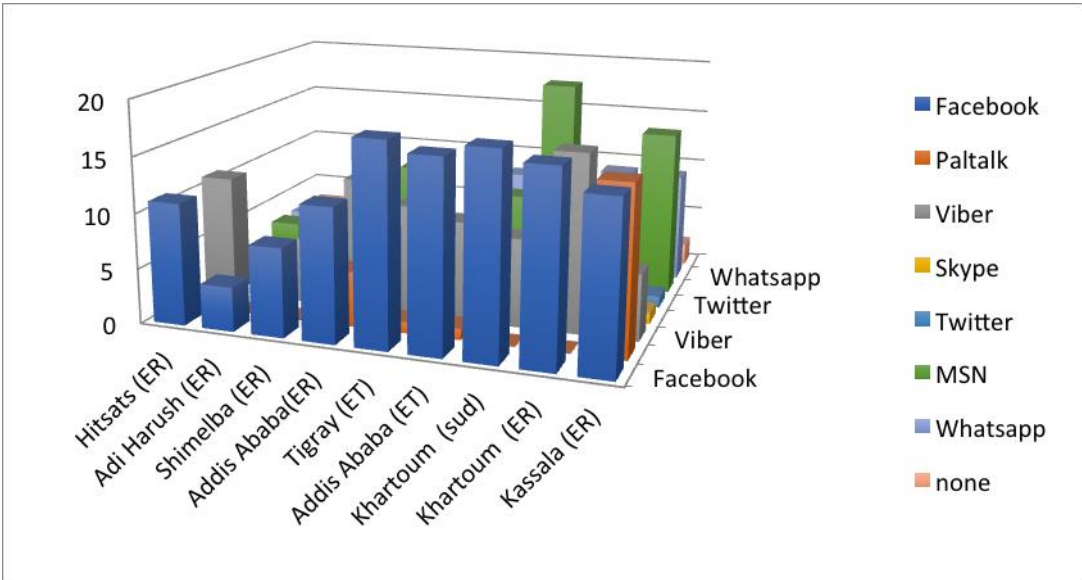
During flight of refugees, factual information about routes, destinations and facilitations is crucial and so refugees are very much invested in staying connected to each other despite technological challenges. Maintaining links with people with information while in the refugee camps and across the borders is crucial and can only be achieved through social media on a smart phone. A research into information and information technology (Kidane, 2016) conducted as part of an initiative looking at information exchange across refugee communities, found that most people considered their fellow refugees as the best source of reliable information regarding most things. This was in contrast to official information and members of the host community (see fig 3).

Figure 3 Refugees and sources of reliable information



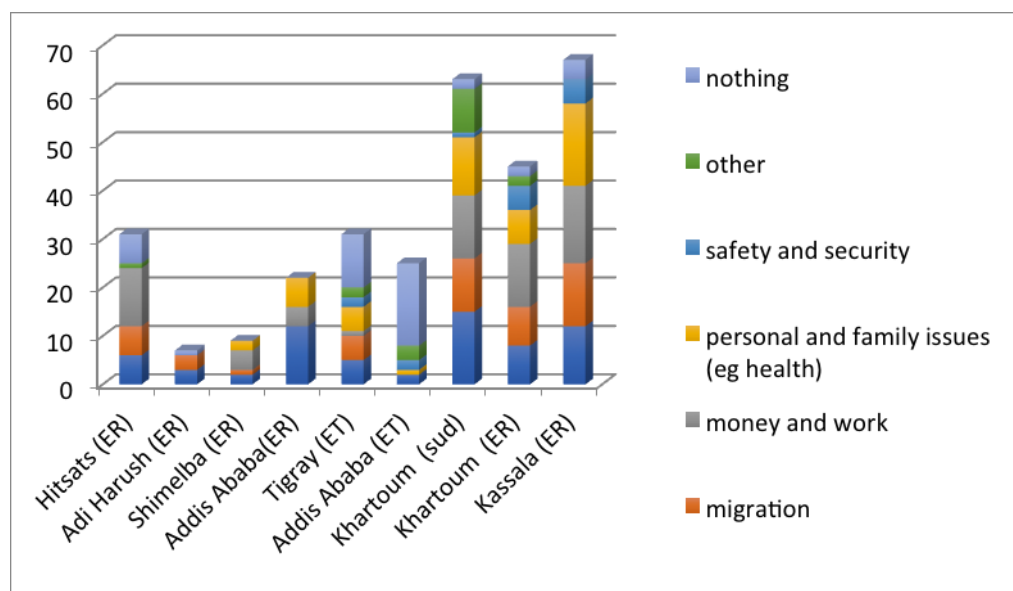
The study also identified that much of that interaction takes place on social media (see fig 4) where a lot of information is shared on a range of issues.

Figure 4 Refugees and social media usage



Regular topics of discussion ranged from money and work to family and health issues. Migration was also discussed, but safety and security seem to not be discussed as much as the aforementioned issues (see fig 5).

Figure 5 Topics of information exchange



Taken together the above account clearly shows that the most trusted source of information among Eritrean refugees is fellow Eritrean refugees; and refugees exchange and share information using their smart phones despite problems with connectivity

This was key to our consideration of ICT as a facilitator of trauma support. The fact that refugees were already adapting and using mobile technology for exchanging information and investing both trust and resources in using and owning the technology was an advantage and we were thus keen to see if the trauma intervention could be delivered utilising the same technology already in the hands of Eritrean refugees.

0.3. ICT Based psychotherapy

E-therapy, psychotechnologies, psychotherapy 2.0, teletherapy, mediated technology, i-therapy, online therapy and many other expressions have been used to relate the opportunity to work therapeutically in the digital world. It offers new ways of working with

the potential to reach many new clients, addressing many concerns over availability and cost of therapy (Witz, 2014).

Indeed ICT has also been used to support psychological interventions and there are examples of successful implementations such as Reger M A, Gahm G A. (2009), who concluded that internet or computer based cognitive behavioural therapy was superior to waiting list and placebo and equal to therapist-delivered treatment of anxiety. However the strength of the findings was limited by the methodological weaknesses of these particular studies.

Similarly (Ebert *et al.*, 2015) found evidence for the efficacy of Computer Assisted Cognitive Behavioural Therapy (cCBT) in the treatment of anxiety and depressive symptoms in youth. Hence, such interventions may be a promising treatment alternative when face-to-face treatment is not feasible.

There are other examples of the positive role of technology in psychotherapy including the use of virtual reality to treat posttraumatic stress disorder (Kaplan, 2005) as well as the use of Websites with online screening tools for depression and anxiety, indicating the potentially ground-breaking implications in the technology as a tool for healing trauma and possibly collective trauma.

For the Ethiopia study, we intended to provide the trauma support program by means of an app on the smartphone. Smartphones are widely used by refugees and often the single most important communication tool in the world of cross border movement of undocumented migrants.

0.4. Research Questions

This study testing about the delivery of trauma support on Information and Communication Technology ICT is the third part of three integrated studies that built on one another to give a comprehensive overview of the relevance of healing trauma and posttraumatic stress in the migration story.

1. The first study focused on identifying the levels of trauma and a viable method of measuring it. It was carried out across Eritrean refugee communities and Eritreans inside the country affected by the migration crisis afflicting Eritreans.
2. The second study involved the development of a trauma-healing program suited for low resource communities - the Self-Help Low Cost Post Traumatic Stress Program (SHLPTS).
3. This research into testing the delivery Self-Help Low Cost Post Traumatic Stress (SHCLCPTS) on ICT will look at the workable elements of the trauma-healing program. Furthermore, it explores the possibilities of delivering the program via ICT reflecting the high mobility of the population in question. This was carried out in refugee camps in Ethiopia.

The main research questions of this research are:

- Can the SHLCPTS intervention be applied to refugee communities?
- What are the workable elements of the SHLCPTS program which reduce the level of trauma, and increase resilience?
- What are the barriers to make the SHLCPTS program accessible by ICT?

0.5. Definition of terms

0.5.1. Trauma

Trauma is the impact of difficult experiences that affect a person in a way that results in the reconfiguration of the nervous system. When people are traumatized they become stuck, stop growing and developing, and become unable to integrate their traumatic experiences into their ongoing life. As a result they continue to organize their lives as though the trauma is still going on. Much of their energy is focused on maintaining control over their reactions and suppressing the inner chaos and attempting to maintain control over unbearable physiological reactions. This curtails victim's spontaneous involvement in their own lives (Van Der Kolk, 2014).

The human brain is organized into three sections connected to the body in such a way that enables automatic triggering of a physical escape plan in an emergency. This system is operated from the oldest part of the brain (the animal brain). However, the process that triggers this reaction and enables the body to run, hide or freeze shuts down our conscious mind (or higher brain). Often the brain is only able to regain internal equilibrium and gradually begin to operate as usual, if the emergency mode adopted succeeds in averting danger. In situations where the response triggered does not result in successful escape or aversion, if for example the person is prevented from taking effective action, the brain will continue to fire stress reactions (and the chemicals associated), sending signals to the body to escape a threat that may no longer exist.

As the human brain's main function is ensuring survival, survival is always given precedence. The sensory input that enters the brain is routed via the thalamus (in the reptilian brain) and then to the amygdala (in the limbic brain) (Cozolino, 2002; van der Kolk, 2014). The neural pathway from the thalamus to the amygdala is extremely fast. The amygdala filters information coming in, if there is any threat or perceived threat, the hypothalamus is immediately stimulated to respond by triggering the release hormones (cortisol and adrenaline), which prepare the body to defend itself (Cozolino, 2002), and by alerting the system to become highly aroused and ready (Siegel, 2001). Information is also relayed to the hippocampal and cortical circuits for further evaluation (LeDoux, 1996). The findings of the hippocampus and cortex are then relayed back to the amygdala; this process is much slower and produces a more considered response, often encouraging the system to calm down.

In danger situations, higher brain functions are overwhelmed (Siegel, 2003) and the brain is focused on immediate survival (Cozolino, 2002). Oxygen is diverted away from the brain to the body and hormones are released activating the body for the 'fight-flight-freeze response' (Van der Kolk, 2014). When a person is able to successfully avert a threat, employing the strategy described above, they are less likely to be traumatized by the experience (Herman, 1992). However, this structure of the brain also results in lack of integration and may result in the dissociation that we see in victims of trauma (Cozolino, 2002); if the active responses are unsuccessful in averting danger, then the passive responses, such as dissociation, ensue. "In trauma, dissociation seems to be the favored means of enabling a person to endure experiences that can normally be beyond endurance" (Levine, 1997). If the traumatic event

is repeated or becomes on going, then the activation is prolonged resulting in potential structural disintegration of complex trauma, where the trauma victim continues to act and react, often re-victimizing themselves by being engaged in self-injuring behaviors, such as self-harming. In some instances victims resort to externalizing the trauma by victimizing others (van der Kolk & McFarlane, 1996).

It is believed this vicious cycle is formed by the creation of neural pathways or the wiring and firing of neurons in such a way that the person continues to re-experience the traumatic event due to their inability to modulate their aroused state (Siegel, 1999). This impairment to brain functioning also affects the vital role of the brain in mediating memory, causing traumatic experiences to be stored predominantly as less adaptable, context free emotional memory (Cozolino, 2002).

Understanding this impact of trauma on processes in the brain is essential when developing programs for supporting victims of traumatic events. Without intervention, a trauma victim can, potentially, continue to live their lives as if they are still in danger, weeks, months, years even decades after the traumatic experience. This is particularly the case for victims of events that were of 'human design' (APA, 2000); it is believed that the element of betrayal entailed in these events makes traumatization more likely (van der Kolk *et al.*, 2007) and recovery complicated (Salter, 1995). Trauma treatment is essentially helping victims overcome the imprints of the traumatic experiences, which keep being re-activating resulting in the fight-flight-freeze responses to the slightest trigger. Given that disintegration of brain functioning and dissociation are problematic in the aftermath of war trauma, treatment based on creating and embedding associations and restoring integration is highly desirable.

0.5.2. Collective trauma

The acknowledgement of the simultaneously private and social nature of post-war trauma, in contexts such as the civil war in Uganda and political conflict in Eritrea, allows us to go beyond symptoms such as PTSD to address collective trauma focusing on communal memories and group narratives that can be passed from one generation to the next. Here group trauma is interwoven into collective identity, to become the new context within which healing (including healing at the personal level) ought to take place.

Collective trauma is the impact of an experience, which becomes a keystone in a group's narrative, a set of beliefs and identity, both for the current generation and across generations. Collective trauma involves a socially constructed process with an impact on the identity of the group and its individual members. The impact on the narrative and on the identity of the group can be present even when individual members do not have (or no longer have) signs of physical or psychological damage. Unlike individual trauma, which can be experienced by a small percentage of people, with most recovering within a given period of time, collective trauma does not necessarily refer to symptoms of traumatic stress, but is an outcome that includes the response to the traumatic event, as well as the way it is constructed into the beliefs, decisions, behaviors and narratives of the collective (Shamai, 2015). It is defined as the effect felt by many in the aftermath of a tragedy (traumatic event). It is a blow to the basic tissue of social life and damages the bonds attaching people together, impairing the prevailing sense of community (Erikson, 1994).

Nowadays, ICT, and the smartphone in particular, is the single most important tool in the hands of migrants and refugees to stay connected to their relatives and community. The super connected network was actually exploited to the detriment of refugees when the power of ICTs to remotely control and influence the emotions, attitudes and behaviours of people was abused by human trafficking hostage takers who coerced family members, relatives and friends to pay unimaginably high amount of ransom by forcing victims to communicate while they are being tortured. Such use of technology by traffickers to maximise their chance of garnering the ransom demand coupled by the effort of distressed families to mobilise the ransom demanded via the same technology effectively turned the traumatic experience into a mass trauma involving a network of people linked directly and indirectly to the primary victim (van Reisen *et al.*, 2016). This research was therefore an effort to test if we could reverse that trend and utilise the same technology for healing.

Communities affected by trauma will often react violently towards others. Unresolved trauma is among the most important root causes for modern-day conflicts that take place. The perpetration and escalation of violence can be partly attributed to this very phenomenon (Levine, 1997). Indeed, research has shown that the attitudes to reconciliation and peace building were negatively impacted on by the high prevalence of unresolved trauma in Ugandan (and Rwandan) communities (Bayer, Klasen, & Adam, 2007; Pham *et al.*,

2004). Collective trauma also leads to new traumatic events, through the intergenerational transmission of trauma and coping style (Danieli, 1998). Additionally, collective trauma impairs the ability to react to patterns of threats and opportunity, causing people to become trapped in cycles of vulnerability, leading to systems of abuse.

The additional advantage of including the healing of collective trauma as a framework, in post-conflict communities, such as Northern Uganda, is that it is more readily accommodative of the total devastation and societal collapse experienced by members of the community, regardless of their individual trauma levels. Such impacts are more than just the aggregation of the individual PTSD, but include the suffering associated with the structural violence and ongoing issues, such as: exclusion, deprivation and lack of access to basic services.

0.5.3. Livelihood

A livelihood is sustainable when it can cope with and recover from stress and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base. (Chambers & Conway, 1992). This definition acknowledges the complexity of the livelihood concept and implies that securing livelihoods may entail e.g. access to water, land, health care, education, or even services protecting legal rights. (De Silva, 2013)

In order to increase efforts to reduce poverty and conduct in-depth analysis of livelihood, the DFID has built upon the working definition and introduced the Sustainable Livelihood Framework (SLF), which has become one of the most widely applied frameworks within development programs. The SLF introduces main factors affecting livelihoods and close linkages between them. As the livelihood approach promotes people-centered picture, it seeks to understand the people's strengths (assets) that through effective utilization can lead to positive livelihood outcomes. Therefore, the SLF also draws attention to the particular assets upon which livelihoods are built, and core influences and processes that shape the use of these assets (DFID, 1999). Stemming from the Chambers and Conway's working definition, assets are recognized as resources, stores, claims and access which person possess and can use towards a livelihood (Chambers & Conway, 1992). The SLF

distinguishes both tangible as well as intangible assets and categorizes them into five distinctive groups – human, social, physical, natural and social capital (DFID, 1999).

In the research on delivering trauma support on ICT, livelihood is operationalized with Social and Economic Resilience Scale (SER) (van Reisen *et al.*, 2018), and Internet Social Capital Scale (ISCS).

0.5.4. Trauma and livelihoods

More often than not, the devastation of war and political violence continue to be told mostly through the number of casualties, yet as devastating as loss of life is, it is only the “tip of the iceberg” when it comes to detailing with the consequences. Enduring poverty, malnutrition, socio-economic decline, loss of livelihoods and other devastative social consequences are often not well documented and this limits our understanding of conflicts which then limits the development of coherent and effective strategies for dealing with the problems associated (Murthy and Lakshminaryana, 2006).

Socio-economic dysfunctions caused and maintained by the trauma of political conflicts is a very important feature of post conflict considerations. An example of a dysfunctional socio-economic behaviour that is detrimental to recovery is the situation in Rwanda cited by Muscat (2004) where even ten years post the genocide farmers were neglecting maintenance of the terracing that is essential for cultivation in the country’s hilly environment or replanting coffee trees. Both these behaviours were contrary to traditional pre-conflict practices and are believed to be effects of depression over future uncertainties. Similarly schools who were educating teenagers, who went through the genocide in their formative years were reporting behavioural dysfunctions reflecting the lingering impacts on socio-economic prospect many years post conflict.

Economic loss, in many conflict contexts, might prove too difficult to accurately estimate, as loss of labour force in rural self-employed contexts is not easily measured. Moreover international humanitarian assistance that is often a feature of such contexts can create a situation where mental ill health attracts more support, (in an effort to provide support to the most vulnerable those recovering fast or more resilient feel they have to overplay vulnerabilities to receive more support) and hence delaying recovery and creating

dependency while undermining confidence and self-reliance (Muscat 2004). The interaction between mental health and socio-economic wellbeing in post conflict contexts is not simple. On the one hand mental health problems hamper productivity and on the other hand poor economic conditions and bad prospects hampers psychological recovery.

However it is not just our understanding of the devastation and loss that needs to develop, but also our understanding of what constitutes resilience at individual and collective levels. Research provides evidence about the resilience in the face of the worst trauma in political violence but we need to understand these extraordinary situations more deeply (Murthy and Lashminaryana 2006). For instance Manz (2002) observed some Guatemalan communities with remarkable resilience and ability to revive their socio-economic viability, with an extraordinary tendency to gradually heal from the wounds of their past. However, sometimes post conflict adaptations, could also represent a significant structural change in the community and the relationship of its members. Ebihara and Ledgerwood (1994), present perspectives from the village of Svay in Cambodia where the apparent resilience of the villagers was in fact more selfish and self-interested behaviour making the villagers they observed very different, in many ways, when compared to their pre-conflict structures.

0.5.5. Trauma, Information processing and decision-making

Generally speaking, most studies have identified symptoms of posttraumatic stress disorder (PTSD) as risk factors for increased risk-taking behaviour (Ben-Zur and Zeinder, 2009; Rheingold, Aciemo and Resnick, 2004; Tullm, Wiss and Mc Dermount, 2016). In contrast to this Augusburger and Elbert (2017), in a pioneering research to assess risk behavior measured by a computer-based task in a research on displaced individuals with extremely high levels of traumatic experiences, found that high risk-taking behavior was predicted by little or no exposure to organised violence, such as war and torture. Here it was concluded that the association between risk- taking behavior and traumatic stress might depend on the particular risk. However the researchers also conclude that, since there is no research regarding culturally different concepts of risk behavior, education and societal values might vary and have an impact on engagement in risk behavior despite exposure to types of traumatic events. A 2017 study by Humburg University involving risk taking, trust and traumatization among Syrian refugees in Jordan found that the degree of traumatization has

some effects on behavior with regards to risk-taking games and it is thought that the behavior is driven by having experienced the loss of close relatives in Syria and by having spent some time in refugee camps in Jordan. However the research also found that as compared to their Jordanian peers Syrian refugee students were not different in their risk taking behavior and the risks tested for weren't specific to leaving or staying in the camp.

Whilst it seems that there is little by way of research to conclusively establish a firm link between traumatic stress and the type of risks we see Eritrean and other refugees taking in their quest to reach Europe, we are beginning to identify a possibilities link between risky decisions and trauma in refugees.

Researchers have also found that traumatic experience has an effect on the victim's cognitive processes and functioning including cognitive appraisals, cognitive schemas, symptom expression, and resolution as well as behavioural action, adaptive strategies adopted in responses to danger, may have negative effects on decision making ability (Lerner and Kennedy 2000).

Inevitably decision-making is a complex process and requires the ability to recognize and evaluate the probability and consequences of each alternative available to the decider. A large number of studies have indeed shown that affective feelings can exert substantial influence on judgment (Schwartz and Clore 2007, Cohen, Pham and Andrae 2008, Isen 2001, Pham 2004), in particular it has been shown that the influence of feelings typically increases in situations where ability to process information is reduced by various factors including cognitive load (Shiv and Fedorikhin 1999). It seems that a decrease in processing ability (such as is associated with PTSD) results in feelings becoming substituted for substantive information which would require more cognitive resources to process (Avent et al 2012).

This is an important consideration as it indicates the capacity to make assessments of prospects and safety as well as the ability to process information regarding the capacity to influence outcomes for safety and prospects. There are a lot of efforts to raise the awareness of refugees regarding the dangers of onward migration as well as the opportunities for training and other livelihood support initiatives in the camp, however without an understanding of the impact of trauma on the ability of refugees to process this information it is almost impossible for these efforts to achieve the desired goals.

0.5.6. SHLCPTS Program

The Self-Help Low Cost Post Traumatic Stress (SHLCPTS) program is inspired by the Eye Movement Desensitization Reordering (EMDR) which is a therapy approach that has been highlighted for effectively integrating of traumatic memories in PTSD sufferers. EMDR works by getting victims of traumatic stress to focus intensely on the emotions, sensations and meaning of their traumatic experiences from a safe setting, while engaging them in a bilateral stimulation. The approach was first developed by Francine Shapiro in 1988 and has since been found to be an effective treatment for PTSD across many fields (Chemtob *et al.*, 2000), including in working with refugees (Mooren *et al.*, 2014). EMDR is approved as top-level evidence-based therapy by the World Health Organisation (WHO, 2013).

EMDR's effectiveness in healing trauma across many contexts and cultures makes it an ideal choice of an approach to address trauma among LRA victims in Northern Uganda. Indeed this is not the first time that therapists have seen the potential of EMDR as an approach for trauma treatment in the Ugandan mental health system (Masters *et al.*, 2017). In 2008, there was an initiative with the objective of developing a core group of Ugandan therapists skilled to practice EMDR, as well as to teach the techniques to others.

Encouraged by the success of EMDR in treating PTS across many cultures and contexts, as well as the fact that other therapists in Uganda had already explored the potential, the objective of this current initiative became to develop sustainable community-based support using EMDR techniques.

Due to the impossibility of providing trained clinicians (even at basic levels) to provide intervention and support at the rate and in the locations, it is required; it was decided to model the intervention on the self-help guide developed by Francine Shapiro. The main objective of Shapiro's self-help guide is enabling people to understand why they are the way they are and then learn what they can do about pain and negative reactions. Techniques are designed to enable people to attain wellbeing by taking control over choices made on a daily basis. In accordance, the model developed for work in Northern Uganda had to have psycho-education as well as techniques for addressing traumatic memories and dealing with distress. However, because this form of trauma healing is new to the potential recipients and due to the fact that people will still require a level of support to go through the

program, it was necessary to recruit support workers to coach people in the various techniques and encourage them to persist when difficulties arose. The role of support workers here will not be to provide opportunities to talk through the trauma but to demonstrate techniques and provide support if, for instance participants suffered demotivation following the activation of traumatic memories, hence, the specialization and training required is minimal. In addition to being cost effective and sustainable, this approach also leaves the agency in the community enabling people to train and support each other using the techniques they have mastered for their own use.

PTS shatters its victims' sense of trust of others and particularly in relation to the events that made them frightened in the extreme or ashamed. It is, therefore, also very important to create a context in which those undergoing the intervention are not stigmatized, but celebrated for their courage to face their experiences and overcome them. As mentioned above, ICTs can support interventions as such. The opportunity that ICTs provided in Northern Uganda was to use community radio personalities to deliver the education and information element of the intervention and also provide support and encouragement via messages, on podcasts and radio broadcasts. These messages reinforced and promoted the need to address and overcome trauma and the collective and individual benefits thereof, encouraging healing both at the individual and collective levels, enabling whole communities to support the healing of the most vulnerable while being aware of the community wide impacts and generating therapeutic conversations at a wider scale.

1. The first study: measuring trauma and collective trauma

The first study took place in the summer of 2015. It consisted of a survey into the prevalence of Post Traumatic Stress Disorder (PTSD) and asked people to reflect on the impact of human trafficking in the Sinai. The survey was carried out using a Tigrigna translation of the Impact of Event Scale-Revised (IES-R). For this purpose, people translated the IES-R to Tigrigna and then a back translation to English was done to compare with the original. The translation was adequate although some of the terms were difficult to translate and hence the English words were still used to describe these concepts, as they were more familiar to respondents.

1.1. Research tool (IES-R)

Trauma and collective trauma are operationalized by means of the Impact of Events Scale. The Impact of Events Scale (IES-R) has been the most widely used self-report measures of PTSD. The Scale was developed in 1979 before the DSM-III, as a short self-report measure for assessing degree of symptomatic response to a specific traumatic experience, taking place in the previous seven days (Horowitz, Wilner, & Alvarez, 1979). Its development draws from the understanding of responses to traumatic stress responses to the realms of intrusion and avoidance as the primary domain of measurement.

In the initial report (Horworth *et al.*, 1979), data supported the existence of homogeneous clusters of intrusion and avoidance as measured by Cronbach alpha (0.79 for intrusion and 0.82 for avoidance). The correlation between subscales was small, allowing for independence of the subscales (18% of the variance). And reliability was satisfactory too (coefficients of 0.87 for intrusion and 0.79 for avoidance).

Zilberg, Weiss and Horowitz (1982) conducted a comprehensive replication and cross-validation of psychometric characteristics of the scale and its conceptual model. The result revealed that all items were endorsed frequently (44% to 89% of the pooled sample), suggesting that content of experience following traumatic events as represented in the IES item pool was similar across different types of events and different populations (e.g., patients and non-patient population).

Sundin and Horowitz (2002) presented a summary of 18 studies on the correlations between a variety of other measures of symptoms and intrusion and avoidance. The correlations with general symptoms were larger than the average relationship of the two subscales.

However the IES was still an incomplete assessment of PTSD, without tracking the responses to the domain of hyper arousal, and so beginning with data from a longitudinal study of responses of emergency service personnel to traumatic events including a major earthquake, researchers developed a new revised version of the Scale (IES-R) by adding a set of additional 7 items to tap hyper arousal (Weiss, Marmar, Metzler, & Ronfeldt, 1995). These additional items that were interspaced with the existing items and the splitting of one double barreled question brought the IES-R parallel with DSM-IV criteria (Weiss & Marmar, 1997). Crucially the revised version was developed with a view to maintaining compatibility

with the original, the instruction on the one-week timeframe was maintained, as was the original scoring scheme. The internal consistency of the three subscales, the pattern of item-total correlations test-retest stability and communality of the interim correlations were all satisfactory (Weiss & Marmar, 1997). Additionally, in response to the experience of frequent answering of questions with the response 'sometimes' and 'often' respondents were asked to report on degree of distress rather than frequency of symptoms, this modified the format of response.

In this study, we used the revised Impact of Events Scale (IER-R), which consists of three subscales: intrusion (8 items), avoidance (8 items) and hyper arousal (6 items). The scale values of the items ranges from 0 (not at all) to 4 (extremely) (0= not at all, 1= a little bit, 2= moderately, 3=quite a bit, 4- extremely). The sum of all item is an indication of the level of trauma (scale ranges from 0 to 88) (see fig 6). The maximum mean score on each of the three subscales is '4', therefore the maximum total mean IES-R score is 12. Lower scores are better. A total IES-R score of 33 or over from a theoretical maximum of 88 signifies the likely presence of PTSD. Various researchers have suggested the following cut-off points.

Figure 6 IES Diagnostic indications

Score	Diagnostic indications
24 or more	PTSD is a clinical concern. Those with scores this high who do not have full PTSD will have partial PTSD or at least some symptoms.
33 or more	This represents a good cut-off point for a probable diagnosis of PTSD (Creamer, Bell & Falilla, 2002).
37 or more	This is high enough to suppress your immune system's functioning (even 10 years after an impact event). On the original IES, a comparable score would be approximately 39 (Kawamura, Yoshiharu, & Nozomu, 2001)
44–75	Severe impact: capable of altering ability to function

Due to its effectiveness and simplicity the IES-R has become the tool of choice for many researchers worldwide. It has been translated to many languages including, Chinese (Wu and Chan 2003), French (Brunet, St. Hilaire, Jehel, & King, 2003), German (Maercker & Schuetzwohl, 1998), Japanese (Asukai *et al.*, 2002), Spanish (Baguena *et al.*, 2001) and Italian (Giannantonio, 2003). There is a Dutch version too (Weiss, 2004). A Bosnian version has been used in a study, comparing refugee and non-refugee populations (Hunt & Gakenyi, 2005). Veronese, Pepe (2013) used an adapted shorter version of IES, in Arabic, normally used with children to accurately measure vicarious trauma on professional social workers and emergency workers operating in war contexts.

In addition to effectiveness in identifying levels of trauma IES-R has also been used to measure effectiveness of interventions. For example Zang *et al.* (2013) used the Chinese version of IES- R (along with several other measures) to assess the efficacy of Narrative Exposure Therapy (NET) as a short-term treatment for PTSD for Chinese earthquake survivors. Similarly, Kim *et al.* (2005) Used IES-R and other scales to investigate the effectiveness of mirtazapine during the 24-week continuation treatment in patients with PTSD in Korea.

However having drawn attention to the complexities of comprehensively assessing trauma in different cultures and contexts (e.g. war and disruption) Veronese and Pepe contend that while the response to trauma may be considered universal, there is lack of univocal evidence regarding how best to assess and classify this response, especially in non-Western contexts (Giacaman *et al.*, 2007). This is due to the fact that, there is considerable evidence indicating that cultural differences govern the emotional and behavioral response to distress in the aftermath of traumatic experiences (Rahman, Iqbal, Bunn, Lovel, & Harrington, 2004).

Additionally, war and political violence affect well-being, not only at an individual level but also at the collective and community level (Giacaman *et al.*, 2007). For instance, in the case of the Palestinian population, humiliation, lack of dignity, and the inability to operate freely and safely often constitute forms of war trauma, hence, there is a need to include these dimensions in an exhaustive assessment of trauma (Giacaman *et al.*, 2007; Veronese, 2012).

Despite the challenges mentioned above and others associated with accuracy of language usage and the limited and specific time frame specified in the tool, IES-R offers the advantage of an effective, short and easily understood measure of distress, ranging from normal stress response to PTSD as experienced in the week preceding the test. Specifically, in this research the scale will not be used to provide diagnosis but to track change over time and trace the levels of symptoms of PTSD and to give a snapshot of symptomatic status at the specific times of testing.

1.2. Selection of the respondents and procedure

The study was carried out among Eritrean refugees in Kampala (Uganda) (9), Asmara (Eritrea) (21), Tigray (Ethiopia) (21), and in Tel Aviv (49). Using a snowball sampling techniques (Biernacki and Waldorf 1981) a small group of participants in each country known to the researcher, were asked to identify potential other participants to take part in the survey. 65 of those interviewed had close friends and family members who had spent time in the Sinai as victims of human trafficking. The rest had followed events closely through social and traditional media. While 35 were victims of Sinai trafficking, who are now refugees in Tel Aviv (14) and in refugee camps in Tigray Ethiopia (21).

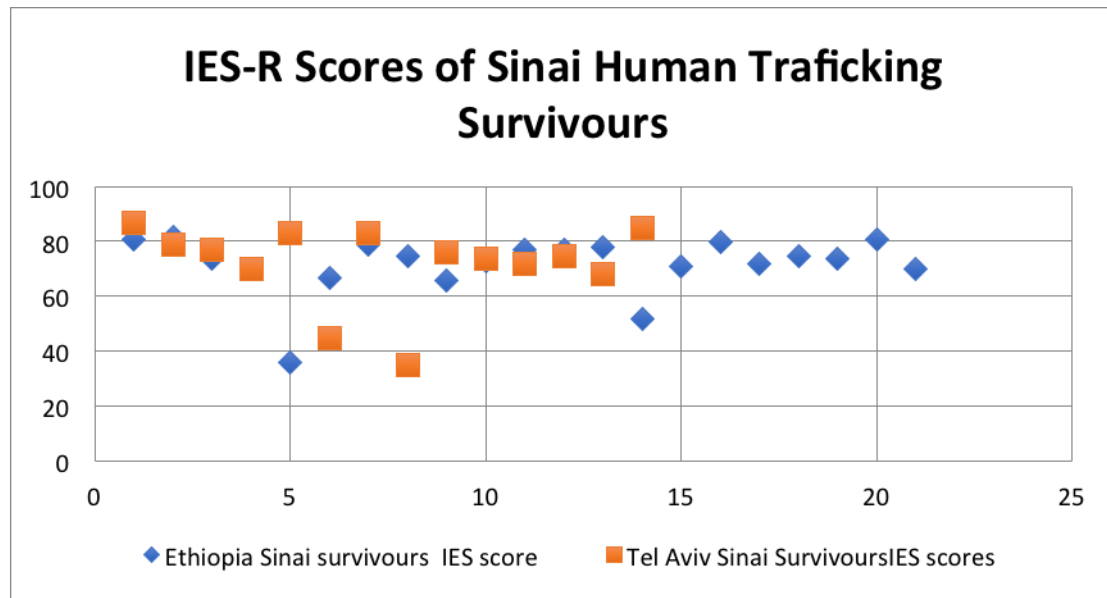
Except in Asmara, where the questionnaire had to be sent in together with the briefing to research assistants and questions were further clarified during telephone conversations, the researcher was present during all completion of questionnaire and at hand to explain details to participants. There were three centres in Tel Aviv, two camps in Ethiopia and one meeting point in Kampala and the Asmara questionnaires were filled by local research assistants who collected them on one to one home visits.

1.3. Results

All participants who were identified as survivors of human trafficking in Sinai scored above the point considered as a 'good cut-off point' for probable PTSD (see fig 7). In fact, all but two (one in each group) scored well above the score considered to be high enough to impact on functioning even 10 years after an impact event. Many scores were at a severity level that is considered to have enough impact to alter functioning permanently. In addition

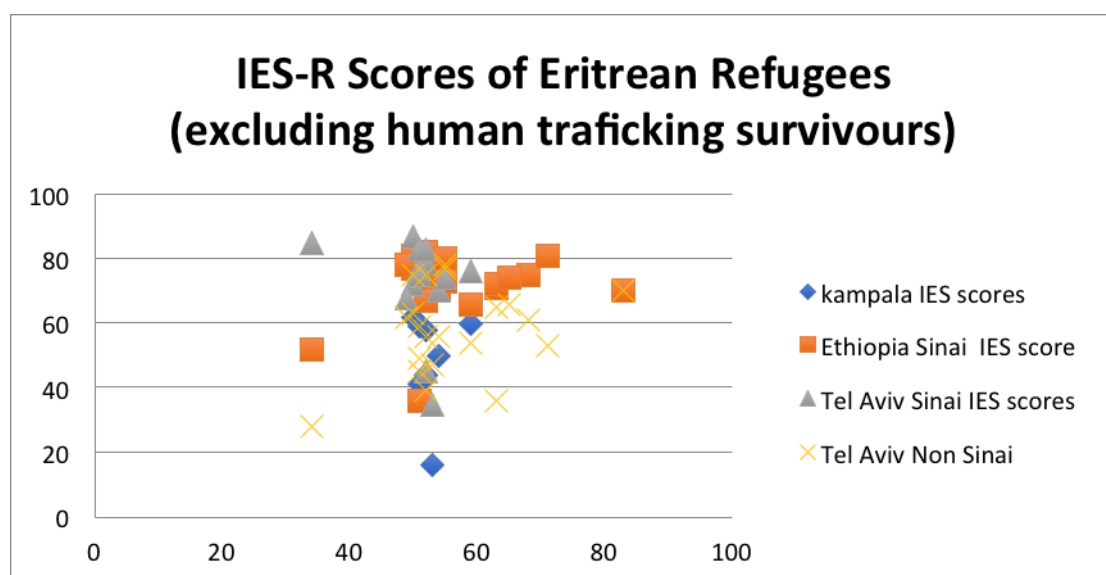
female survivors of Sinai trafficking, it appears that women have a higher average score than men. Among the participants of this study, the average score for women is around 5 points higher than the average score for men. All women scored above the threshold for a Severe Impact Event (defined as capable of permanently altering one's ability to function).

Figure 7 Trauma levels in Eritrean survivors of human trafficking in Sinai



In the group not directly involved in human trafficking (as an abductee), only 1 participant in Kampala scored below the 'cut-off' point for PTSD (see fig 8). Although the scores for this group were generally lower than the scores obtained, using the same scale, from Sinai victims of human trafficking in Tel Aviv and refugee camps in Ethiopia, they still constitute levels of trauma consistent with PTSD, with some indicating severe impact with long-term impairment of functioning (Reed, 2007). These scores signify the fact that the traumatic impact of Sinai human trafficking is far wider spread than the primary victims who underwent the physical and psychological torment at the hands of traffickers and via the phone. Results are also indicative of the prevalence of widespread and acute PTSD among members of Eritrean refugee communities.

Figure 8 trauma levels in Eritrean refugees



From the above it can be concluded that distressing experiences of Eritreans inside the country and on route to safety have become a cause of extreme trauma and PTSD at the individual level. In addition the collective nature of the experiences and the widespread prevalence of PTSD as measured by IES-R is indicative of collective trauma – an experience that could become a keystone in the narrative of Eritreans, affecting their set of beliefs and identity, for both current and future generations. Unlike individual trauma, which can be experienced by a small percentage of people with most recovering within a given period of time, collective trauma does not necessarily refer to symptoms of traumatic stress, but is an outcome that includes the response to the traumatic event, as well as the way it is constructed into the beliefs, decisions, behaviours and, ultimately, the narratives of the collective (Shami, 2015).

2. The second study: the feasibility of the SHLCPTS program

The Self-Help Low Cost Post Traumatic Stress (SHLCPTS) program was developed as part of a project that focused on the Cost-Benefit of Including Trauma- Support in Social Protection Programs in Northern Uganda (van Reisen *et al.*, 2018).

The main objective of the second study was to understand the beneficial effects of trauma counselling on the effectiveness of social protection in building social economic resilience.

The program was developed when research had shown that trauma provided a higher result on Social Economic Resilience than social protection programs, while the combination of social protection programs and trauma showed the highest impact on Social Economic Resilience (first wave, van Reisen *et al.*, 2018). In order to facilitate further understanding of the Cost-Benefits of introducing treatment of trauma into the social protection interventions, a tool was developed that adhered to contextual realities in Northern Uganda. These were the following:

- Environment of low financial resources: the intervention needed to be low cost;
- Environment of low resources of mental health workers and health workers: the support needed for the safe use of the intervention needed to make minimal use of the few available mental health facilities;
- Limited diagnostic facilities: the program needed to provide support without interfering with non-diagnosed mental health problems;
- Low trust in outside interventions: the program needed to have a strong feel of ownership by the communities and support of local leadership and needed strong contextualization (local radio communicators and local leaders supported the program) (Van Reisen, *et al.*, 2018).

In the next section, the background to the program and how it was developed is illustrated.

2.1. Contextual considerations in trauma healing

When considering trauma healing in the contexts such as the one under consideration here, the veracity of universalized psychological interventions often developed in Western contexts and focusing solely on individual trauma, should be carefully considered. Interventions should be assessed with an understanding of collective cultures and the impacts of collective trauma. These aspects shape the context of the traumatic experiences in Northern Uganda, as well as the impacts that healing should address.

Simply focusing on individual trauma decontextualizes the collective suffering in post-conflict communities. The context for such collective suffering, after all, is the social and historical fabric, and leaving this out of the healing process, leads to further atrocities such

as human rights violations (Lykes, 2001; Van Reisen & Munyaradzi, 2017), as well as hampering the recovery of those who are already suffering from PTSD and other mental health problems. On the other hand, the wider focus, locating trauma in the community as well as in any individuals who are suffering symptoms of traumatic stress will give opportunities for practitioners to focus on the community-wide potential to effect healing (Bonano, 2004; Kidane, 2015).

This leads to the conceptualization of trauma healing as supporting the many individuals with symptoms of traumatic stress, while at the same time addressing collective trauma, enabling both the traumatized community and traumatized individuals within it the opportunity to heal and move on to post-traumatic growth. If collective trauma represents the disruption of relationships at many levels of the human system, recovery should also involve collective processes of adaptation and the mobilization of capacities across all these levels (Saul 2014). Therefore, healing trauma simultaneously at the individual and collective levels is crucial for post-conflict recovery. Neglecting trauma healing has detrimental impacts not only on the wellbeing of individuals, it also hampers post-conflict reconstruction and peace building. Moreover, the impacts of collective trauma will affect subsequent generations as traumatic memories and reactions are passed on through collective narratives, norms and societal structures, extending the cycles of violence and vulnerability.

Having justified the need for multilevel healing in post-conflict communities, the challenge of providing such support becomes evident. This is particularly the case given the devastation caused to the human and material resources available to the community and the prioritization of other needs over the needs for psychological healing, be it individual or collective. Gelbach and Davis (2007) state that, although the treatment of psychological distress in individuals and families is generally believed to expedite community recovery, the provision of effective and affordable psychotherapy is not yet a priority in post-disaster support. Although there are many other reasons for this, including the timing of interventions, as well as the type and effectiveness of some of the available techniques, a recurring concern, particularly in non- western cultures, is whether psychotherapy in itself is culturally biased and stigmatizing, pathologising normal responses to danger and labelling trauma survivors as mentally ill (Miller & Rasco, 2004).

A program that overcomes some of the difficulties to develop a post-disaster treatment method is the EMDR Humanitarian Assistance Programs (HAP). It focuses on supporting the brain's natural capacity to reprocess disturbing information to an adaptive resolution (HAP volunteers, 2005). In addition, HAP found that training local clinicians helps to circumvent the problems caused by delayed international responses to traumatic events and builds sustainable resources in communities plagued by natural disasters or the effects of violent conflict. The positive outcomes of HAP EMDR interventions have been published in several peer-reviewed articles (e.g., Jarero *et al.*, 1999; Aduiz *et al.*, 2009; Fernandez, Gallinari, & Lorenzetti, 2004; Jarero *et al.*, 2006; 2010; Zaghrout-Hodali *et al.*, 2008).

However, in the context of poor post-disaster contexts, such as Uganda, even this successful and relatively cost-effective technique is not easy to implement due to the unavailability of clinicians. This is particularly the case given the extent of the traumatization and the deprivation of the region affected. If EMDR-based techniques are to be effectively implemented to address individual and collective trauma in rural Northern Uganda there is a need to find a realistic and sustainable medium to facilitate accessibility. In our opinion, ICT can provide a feasible medium, since one of the features of communities in current day Africa is the fast expansion of ICTs, which is both a challenge and an opportunity (Van Reisen & Gerrima, 2016). For our purposes, it is important to discuss the opportunities for utilizing technology to facilitate the cost effective and sustainable provision of trauma intervention in resource-deprived communities such as the ones in consideration here.

2.2. The SHLCPTS program

The program was designed to take into account the neurobiology of trauma, as well as the impact of collective trauma on healing and post-traumatic growth. Exercises are intended to heal the connections that are often disrupted by complex trauma such as those prevalent in post conflict communities (Cozolino, 2006; Ogden, 2006; Siegel, 2001). The design itself follows the phased approach endorsed by a number of key international bodies and clinicians treating either complex PTSD or PTSD (Cloitre *et al.*, 2012).

The SHLCPTS program is fully described in Van Reisen *et al.* (2018), but below is a brief outline of its main principles and objectives:

- It is developed for use in low resourced communities hence techniques are intended to be mainly self-help;
- Any improvements as a result of the program have to be maintained and therefore there is great need for victims understanding their symptoms and their causes in as much detail as possible under the circumstances;
- A central theme of the program is community wide healing and hence trust and trust building is a crucial element as is whole community involvement;
- Sustainability and upscalability through careful utilization of available technology

The SHLCPTS program developed for North Uganda and adapted for this research had three components:

1. Sessions of educational information to raise participants awareness of their symptoms and their causes
2. Sessions of coaching on techniques to gain control over distressing PTSD symptoms
3. A session that encourages participants to share their experiences with members of their community

A defining component of mass trauma, such as the trauma that took place in the years of the civil war in Uganda, is the betrayal of social trust, which leaves victims devalued and humiliated, undermining their sense of communal trust and decency (Saul, 2014). Restoring social trust is, therefore, a foremost task of any program. In fact, without restoring trust, a program will not have a chance of making any meaningful impact on recovery, as recipients will not access or engage with it. In North Uganda, we choose for support by means of radio since it can facilitate collective narration, which can shape the meaning ascribed to traumatic events, as well as providing resources and solutions to difficult challenges (Saul and Landau, 2004). So, various activities were undertaken to involve media personalities (mainly radio) to support the delivery of the program.

2.3. Experimental design and assignment of the respondents

The feasibility study of the SHLCPTS program was part of a larger study about the effectiveness of social protection and counselling in North Uganda (see Van Reisen *et al.*, 2018 for a full description of experiment and selection of the respondents). For this larger study, respondents were purposive assignment to the groups who received social protection (cash or in-kind, provided by the Government of Uganda) or counselling (provided by NGO's or District). For the feasibility study of the SHLCPTS program, the respondents (N=356) were purposively assigned to the SHLCPTS program, developed by the researchers in collaboration with local authorities. This resulted in the following groups:

- SHLCPTS and cash/in-kind
- SHLCPTS and counselling
- SHLCPTS and both cash/in-kind and counselling
- SHLCPTS and no cash/in-kind nor counselling
- Only cash (cash/in-kind)
- Only counselling
- Both cash/in-kind and counselling
- No support (control group)

2.4. Research tool (Social and Economic Resilience)

The main objective of the second study was to understand the beneficial effects of trauma counselling on the effectiveness of social protection in building social economic resilience. The development of the SER is described in van Reisen *et al.* (2018). It comprises the following six constructs:

1. Perceived capabilities
2. Income
3. Social inclusion

4. System: Feeling of security
5. Empowerment: A change in agency and behavior
6. Experiencing less worry

The reliability of this tool is reported in van Reisen *et al.* (2018).

2.5. Results

There was both a quantitative and qualitative analysis carried out; the qualitative analysis enhanced the understanding of the quantitative data.

2.5.1. Qualitative results of the SHLCPTS program

A full report on the qualitative data is given in van Reisen *et al.* (2018). Here, a summary is given.

The main objective of the program was to enable participants to learn strategies to help them overcome the traumatic stress affecting their day- to-day functioning. During interviews carried out six months after the program, participants reported a wide range of positive impact on the lives of the participants, their families and community at large. Increased self-esteem, decreased domestic violence, better addressing of interpersonal conflicts were examples of the types of change related by participants.

Referring to specific exercises the women expressed that knowledge in application of the touch stone memories and safe calm place presented them with skills that they could use for themselves as well as would share with the rest of the community with those people whom they would identify with trauma symptoms. They also said they were using the trauma healing techniques at home for themselves, used it to help other friends and members of their communities. Several women reported healthy weight gain; this is a crucial indicator particularly for those who are HIV positive as it indicates their physical health is in better shape following the mental health support they received.

Success in overcoming day to day challenges seems to have had a lot of positive effect on physical and psychological wellbeing, their relationship within their respective families as

well as their functioning and role within the wider community. It has enabled them to look forward rather than always look back in fear of the rebels coming back.

The fact that the women had continued to use the techniques long after the official conclusion of the project and the fact that they were teaching the techniques to members of their family and community is a testament to the effectiveness of the techniques in addressing symptoms of trauma. Many who were not part of the research participating group, including male members of the family, started expressing wished to be involved in the project.

2.5.2. Quantitative results

A full report of the quantitative result is given in Van Reisen *et al.* (2018). This section only outlines the main findings regarding the effectiveness of program. The Uganda study indicated that (see also Van Reisen *et al.*, 2018):

- Receiving cash/in-kind has no immediate or lagged effect on Social, Capability, and Income scale of the SER.
- Receiving cash/in-kind has an immediate positive effect on Women's Empowerment and System scale of the SER.
- Receiving cash/in-kind has an immediate negative effect on Worry scale of the SER (it increases worry).
- Receiving counseling has no immediate or lagged effect on Social, Capability, and Worry of the SER.
- Receiving counseling has an immediate and lagged positive effect on the Income and Women Empowerment scale of the SER.
- Receiving counseling has an immediate negative effect on System scale of the SER.

The effect of SHLCPTS are still preliminary, due to the short time period between finishing the program and the collection of this set of data. In addition, it should also be taken into consideration that the SHLCPTS program was not assigned randomly to individuals. Rather, it was a targeted at communities that were expected to benefit most of the program.

Consequently, at the start of the program, those respondents who did receive the SHLCPTS program are more likely to have lower scores on Social and Economic Resilience compared to those who did not receive it.

The results of the analyses indicate that, those receiving SHLCPTS program:

- Scored lower on the Social and Income scale of the SER.
- Did not differ on Capability, Empowerment, System, and Worry scale of the SER (although this might be expected based on the fact that those who received SHLCPTS program were most in need for trauma support).

These quantitative results are in contrast to the positive results of the qualitative research. However, if the quantitative results are viewed from the perspective that those respondents who did receive the SHLCPTS program probably scored lower on Social and Economic Resilience compared to those who did not receive it, the results can be regarded as positive. The backlog in SER is reduced due to the SHLCPTS program. This interpretation is in line with the qualitative results of the SHLCPTS program. From that perspective the SHLCPTS program is probably effective in increasing Social and Economic Resilience.

3. The third study: The effectiveness of delivering SHLCPTS on ICT

This study was carried out in refugee camps in Ethiopia. It goes into the delivery of Self-Help Low Cost Post Traumatic Stress (SHLCPTS) program on ICT. It explores the possibilities of delivering the program via ICT as an app on the mobile phone, reflecting the high mobility of the population in question. Furthermore, it will focus on the workable elements of the trauma-healing program (psycho-education, and exercisers).

3.1. Eritrean Refugees in Tigray

Eritrean refugees have been coming to Tigray since about 2000 fleeing a wide range of persecution in their country and increasingly fleeing the open-ended national service. In Ethiopia they mainly live in four refugee camps in Tigray (although there is a rising number of people who use the off-camp policy and live elsewhere in the country provided they have the means to support themselves doing so). Shimelba, the oldest camp, opened in 2004 and

Hitsats, the newest camp, opened in 2013. These are the camps that this study has been conducted in.

UNHCR's Country Refugee Response plan for 2018 reveals that, since 2014 Ethiopia received an average monthly arrival of 2,300 refugees per month. In 2017 the country hosted Eritrean refugees 164,668 refugees (UNHCR 2018), according to the plan the main challenge in providing assistance to these refugees is the high number of people who leave the camps to pursue onward movement. In 2016 up to 80% of newly arrived refugees, including up to 300 unaccompanied children a per month, left the camp within the first 12 months of arrival.

This extraordinary rate of mobility was also reported by earlier reports; in 2014 it was found that of 382 Eritreans surveyed 84% identified 'moving to another country' as their plan for the future (Samuel Hall Consulting , 2014). Similarly an Amnesty International survey conducted 2015 found that two thirds of the Eritrean refugees in Ethiopia was pursuing secondary movement (Amnesty International 2016). Many of these people would be travelling via irregular means with a substantive majority crossing the Sahara and the Mediterranean to reach Europe (UNHCR 2017).

The high rate of mobility is thus the main difference between the Northern Ugandan population in previous trials of the SHLCPT and this current study. This mobility does inevitably impact on the meaning of livelihoods and livelihood support. While in Uganda livelihood can be measured in terms of actual income in the context of a highly mobile community it is prospects of building\rebuilding livelihoods that becomes a core consideration of resilience.

3.2. The development and implementation of 24COMS App

24COMS is an app offering a communication platform that enables secure and efficient communications around mobile devices, with 100% data ownership and care for privacy. Services offered through the app can be deployed with ease and flexibility for Chat, Post, News Feed, Newsletters, Brochures, Location Based Services, Track and Trace etc. All these solutions and applications are managed by an administrator from a web-based control centre.

A special page on the app was developed with a view of delivering the SHLCPTS for use with mobile communities. It has the facilities for completing a short version of the IES-R questionnaire that was developed for measuring the level of trauma and also provides access to the seven videos that were developed to give six sessions of support. 2 of the videos provided education on the impact of trauma and four giving instructions and demonstrations on techniques to enable victims of trauma to take control over distressing emotions in their day to day life. Videos were uploaded onto Vimeo, a video sharing site, and were individually password locked for controlled access. Videos were password locked that were released to each user. The first two upon completion of the IES questionnaire and once the administrator has checked suitability. Subsequent videos were to be released a few days following the completion of the previous video. In addition users were also able to comment on each video as well as send messages to administrators of the app.

All content, including videos, the instruction for completing the IES and the IES itself were in Tigrigna to enable users to get information in their first language, on a group page called 'Support and Encouragement'.

The initial plan was as follows: following selection for participating in the research, participants are given whole group briefings and then allocated to their respective group (2 video v 7 videos). They are then all interviewed on a short version of the SER and Internet Social Capital Scale (ISCS) adapted for the research. After this everyone downloaded 24COMS and was admitted to the Support and Encouragement page where they completed the IES-Short and were then prompted to access the first two videos.

After accessing the first two videos participants in the 2-video group were notified that they will then be invited to the second wave interviews and community event to commend them for the progress they have made in dealing with their trauma after six weeks.

The group with 7 videos were prompted to send a message and ask for subsequent videos. After the last video they too were given information of the second wave data collection and community event (see flow chart on annex i for details and annex ii for translations of instructions of exercises video).

However as mentioned by Schoenmaeckers (2018), due to connectivity problems it was impossible to use the app in the way it was envisaged despite all participants being

registered. In the event videos were uploaded to one phone and research assistants then shared it via blue tooth on an app called SHAREit.

SHAREit is a free application for transferring files between phones by creating hotspot connections between two mobile phones that have the application. Once connection was created research assistants were able to select the relevant video and complete transmission. This technology was already in wide use in the camps where photos, videos, contacts and anything else on SD cards was transferred. This was a good alternative to 24COMS in terms of delivering SHLCPTS on ICT; however it was necessary to give the role of ensuring the time lapse between sessions to the research assistants on the ground, as opposed to the 24COMS administrator doing it remotely.

3.3. Research design

The research was carried as a natural experiment design. We assigned participants at random to the different groups of the experiment. However, in this case it would have been both unethical and impractical to have a control group (Bonell *et al.*, 2010). Unethical because it would have denied trauma support to groups of highly vulnerable refugees assigned to the control group even after they have come in contact with and opened up to people who could potentially give them support. In a context where there is no other comparable support that they could access instead, this is highly unsympathetic and potentially unethical. In addition, it would have been impractical given that the intervention relied on an app available on a mobile phone; it would be impossible to stop people from sharing their newfound knowledge and skills. Therefore, it was felt easier to convince participants that they will be given the remaining videos at the conclusion of the intervention together with the reimbursement for accessing the remaining videos.

Due to the fact that some participants received livelihood support from NGOs in the camps, Those who did and did not receive livelihood support were randomly assigned to take part in one of two intervention groups – either a short 2 session (video intervention with only psycho-education) or a longer 7-video based intervention (with both psycho-education and demonstrations of exercises). Figure 9 outlines the distribution of participants across the groups.

Figure 9 Research participants

2 video intervention Without livelihood support (n= 36)	7 video interventions and without livelihood support (n = 35)
2 video intervention with livelihood support (n = 14)	7 video interventions with livelihood support (n = 18)

The experiment is based on a pre-test, post-test design. Before getting access to the app with the videos, participants were interviewed by the researcher. This interview encompassed an indication of trauma, social and economic resilience and social capital. Given our understanding of the continuous information exchanges across refugee communities scattered across the world and often on the move and the impacts of collective trauma, it was crucial to capture the quality of social capital that will also reflect on the quality of information exchanges across communities.

After respondents went through all the videos that go with the particular intervention, they were invited for a second interview about the same topics as in the first interview.

3.4. Selection of the respondents

Participants were selected through purposive sampling approaches. Members of the research teams had substantive understanding of their context and their judgements can thus be relied on, for obtaining an information-rich and representative sample to comprehensively answer the research questions (Cresswell & Plano Clark, 2011). In addition to this, as this is a research exploring some of the most difficult experiences that participants have had to endure, there needed to be a level of assessment into their willingness to participate as well as their ability to reflect and communicate that reflection, while

remaining as near to the theoretical norm of their respective community, as possible (Alen, 1971).

Local research assistants were recruited and briefed on the qualifications (see fig 10) and then asked to draw a list of potential participants. The list was then finalised during team-wide discussions.

Figure 10 Sampling criteria

Criteria
People whose experiences are typical of fellow members of the community
People who live in the geographical locations included in the research
People who have a phone that has the capacity to view the videos
People who are available for the duration of the research
People who are able to delve and reflect on their traumatic experiences and cope

All interactions were in the participant's mother tongue and participants were reimbursed any data usage costs.

3.5. Research tools

In this research three constructs were measured by means of an interview:

- Level of trauma, measured by means of a short version of the IES-R
- Social and Economic Resilience, measured by means of a short and slightly adjusted version of the SER-tool used in the Uganda research.

- Social Capital measured by means of the Internet Social Capital Scale (ISCS).

We will discuss each tool successively.

3.5.1. The short version of the Impact of Events Scale – Revised (IES-short)

Upon realising the problems with the length of the IES-R in both the first and second study, we decided to develop a shorter version that will be more user-friendly in an ICT context. To guaranty the validity of this short version, the three constructs of the IES-R (intrusion, avoidance and hyperarousal) should all be included in the short version (as suggested by Thoresen *et al.*, 2010). In order to decide what items of the IES-R are most indicative for each subscale, we looked at the inter-correlations of the items as reported in the first wave of the Uganda study (van Reisen *et al.*, 2018) as well as the face validity of the items to be selected (are these items relevant for refugees in a camp?).

By selecting (at least) two items of a subscale with the highest corrected item total correlations, as reported in the Uganda study (see also Annex iii), we came up with 7 items for the short version of the IES-R (see also fig 11).

Figure 11 Items of IES-Short

		Corrected item total correlation in the Uganda study
intrusion	Other things kept making me think about it.	0,87
	I had waves of strong feelings about it.	0,87
avoidance	I stayed away from reminders of it.	0,77
	Tried not to talk about it.	0,75
hyperarousal	I had trouble falling asleep.	0,89
	I had trouble concentrating	0,88
	Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart	0,88

The scale values of the items ranges from 1 (not at all) to 5 (extremely) (1= not at all, 2= a little bit, 3= moderately, 4=quite a bit, 5 = extremely). Due to the high correlations between the subscales (about 0,8 or above in the Uganda study (van Reisen *et al.*, 2018)) we decided to take the average of the three scales as an index for trauma.

3.5.2. The short version of the Socio-Economic Resilience tool (SER scale)

The SER Scale was based on the SER tool used in the Uganda research (van Reisen *et al.* 2018) and designed to measure the perception of each participant's socio-economic standing. Due to the ICT context as well as the fact that participants were individuals living in a refugee camp, we needed a shorter and slightly adjusted version of the SER-tool used in the Uganda research (study two). To guaranty the validity of this short version, the six constructs of the SER-tool (Income, Empowerment, Structural/system, Worry, Capability, and Social) should all be included in the short version. In order to decide what items (or theme) of the SER-tool are most indicative for each subscale, we looked at the inter-correlations of the items as reported in the first wave of the Uganda study (van Reisen *et al.*, 2018). However, some 'best' items used in the Uganda study were not relevant for refugees in a camp (those of income for example). Therefore, some items were adjusted based on an intimate knowledge of the context, an understanding of the cultural, and lingual nuances.

In general, we selected three items of each subscale with the highest corrected item-total correlation (as reported in the first wave of the Uganda research, see also Annex iv) and adjusted the wording to make them more relevant for the current context. However, the in the Uganda study, the System subscale comprised only two item, so we added one item. Furthermore, we regarded the Worry scale as very important as indicator of resilience. In consequence we selected five items. Moreover, the income items as used in the Uganda study rely heavily on income and economic opportunities. These themes are not relevant in the refugee camp (see also Melicherova 2018, this report). In consequence we formulated four new items that are indicative for the improvement of income or economic resources. The Items used in the short version of the SER are shown in figure 12.

Figure 12 SER-Short Items

		Corrected item total correlation in the Uganda study
Improvement of actual income/ Economic resources	<p>I am able to meet my financial needs.</p> <p>I am able to save money</p> <p>I will have good means of earning money in the next 6 months?</p> <p>I am able to survive in hardship times</p>	<p>new</p> <p>0,551</p> <p>new</p> <p>0,542</p>
Empowerment	<p>I am able to get more time for productive activities</p> <p>I am able make my own decisions</p> <p>I feel improvement in my self-worth</p>	<p>0,709</p> <p>0,636</p> <p>0,689</p>
Worry	<p>I am worried that conflict/war may erupt again</p> <p>I am worried that I will fail to provide for myself and/or my family</p> <p>I am worried that support organisations will not treat me fairly</p> <p>I am worried my physical or emotional health will deteriorate</p> <p>I am worried that I may not have enough money to meet my needs</p> <p>I am worried about my safety in the camp</p>	<p>0,431</p> <p>0,545</p> <p>New</p> <p>New</p> <p>0,583</p> <p>new</p>

Figure 12 SER-Short Items (continued)

Capability	I feel I can get information about anything I want	0,714
	I have acquired new skills to improve my life	0,750
	I feel change in the amount of knowledge I hold	0,769

The scale values of the items ranges from 1 (not at all) to 5 (extremely) (1 = strongly disagree, 2= disagree, 3=neutral, 4= agree, 5= strongly agree). Most statements are stated positively (high score indicate a positive mindset), however, for the subscale worry a high score indicates more worry (a negative mindset).

3.5.3. Internet Social Capital Scale (ISCS)

It is important to measure social capital, as studies have been consistent in their findings that, chronic civil war can lead to a depletion of social capital (Kawachi & Subramanian, 2006; Wind & Komproe, 2012). In fact modern intra-state conflicts deliberately destroy social capital assets in order to control communities. Given the communalities shared by social capital and collective trauma, loss of social capital has been usefully utilised for measuring collective trauma too (Somasundaram, 2014). Social capital includes community networks, relationships, civic engagement within norms of reciprocity and trust in others that facilitate cooperation and coordination for mutual benefit (Cullen & Whiteford, 2001).

In this study social capital was measured by means of the Internet Social Capital Scales, or ISCS (Williams, 2006). The scale was developed to measure social interaction in the Era of online social networking. The ISCS was particularly constructed in recognition of the fact that increasing level of social interaction now occurs online and it happens in parallel and in conjunction with offline interaction. The concept of “social capital” (Coleman, 1988) is used to establish a framework and then question items are developed within this framework to account for both online and offline social interactions. The ISCS consists of two underling dimensions: bridging vs. bonding and online vs. offline. This necessitates two parallel scales, one for online use and one for offline use. Both scales consist of the following eleven items:

1. There are several people online/offline I trust to help solve my personal problems.
2. There is someone online/offline I can turn to for advice about making very important decisions.
3. There is no one online/offline that I feel comfortable talking to about intimate personal problems. (reversed)
4. When I feel lonely, there are several people online/offline I can talk to.
5. If I needed an emergency loan, I know someone online/offline I can turn to.
6. The people I interact with online/offline would recommend me to people in their network.
7. The people I interact with online/offline would be good job references for me.
8. The people I interact with online/offline would share their last dollar/food/clothing with me.
9. I do not know people online/offline well enough to help me get ahead. (reversed)
10. The people I interact with online/offline would help me fight an injustice.
11. I have a good network of friends and family

The scale values of the items ranges from 1 (strongly disagree) to 5 (strongly agree) (1= strongly disagree, 2= disagree, 3= neutral, 4=agree, 5 = strongly agree). In general high scores indicate high social capital, however two items are formulated negatively (items 3 and 9). These two items are recoded for the analysis.

3.6. Ethical considerations

As mentioned above there was a serious consideration made that affected the very design of the study as it was felt to be unethical (on top of being impractical) to leave respondents who came into contact with the research team and would have been interviewed and tested across all tools answering questions on traumatic experiences, without any support. Consequently due consideration was given to this in the context of the Eritrean refugee camps, in Ethiopia where services are extremely restricted. As a result the research design was altered in accordance to the description in previous sections.

In addition to this, there was concern over potential re-traumatization of participants who were asked to reflect on traumatic experiences. Below is a description of the steps taken to avoid re-traumatisation:

1. The design of the intervention focused on equipping participants, with self-help techniques to deal with reactions of traumatic stress rather than identify and address specific traumatic experiences. This was done to avoid harm to participants and particularly to avoid re-traumatisation in as much as possible under the circumstances.
2. Videos were sequenced in a way that ensured participants were fully briefed and coached on building their resources (resourcing) for stabilizing themselves in the event of distress when dealing with traumatic experiences. Two exercises in the first video following the information/education sessions are designated for this purpose (the safe calm place and breathing exercises). No participant was given access to subsequent videos that dealt with specific traumatic experiences without first accessing this session that equipped participants.
3. In addition there were meetings with RSF in the camps to explain the potential need for referrals for participants that were identified at the screening session (first wave data collection) as needing more support than was available in the videos. RSF agreed to receive referrals from the researcher at that point and from research assistants once videos were distributed. In the event four people were referred to RSF (three in Hitsats and one in Shimelba) and were being supported by members of the RSF team at the conclusion of the research. Researchers had a meeting with RSF staff prior to collection of second wave data collection to get update and ensure it was safe to collect second wave data.
4. Research assistants who were briefed to ask people how they found the videos before giving them access to the next session and as mentioned above they were aware of the possibility to refer onto RSF.
5. Participants also had the option of sending a message on the app or as a comment on the video to ask for assistance (in the event most of the requests for assistance were actually for technical assistance on downloading and accessing videos)

The other ethical consideration concerned data management; all data was gathered, processed and stored in accordance to Tilburg University's data management protocol. Data is analysed and filed in a password locked system to protect the identity of participants.

Having considered the application for ethical approval, the Research Ethics Committee of Tilburg School of Humanity gave the required ethical clearance on 18th of may 2017.

3.7. Results

In the quantitative part of the results we will focus on the effectiveness of the SHLCPTS program as a mobile APP in decreasing trauma, increasing Social and Economic Resilience and increasing Social Capital. The hypotheses to be tested can be summarized as follows:

1. In the pre-test we expect a negative correlation between post traumatic stress (IES-short) and the components of:
 - a. Social and Economic Resilience (except worry)
 - b. Internet Social Capital Scale (both online and offline)
2. Both elements of the SHLCPTS program (psycho-education and demonstration of exercises) will
 - a. Decrease post traumatic stress
 - b. Increase the components of the Social and Economic Resilience (except worry since high values on that scale indicate more worry)
 - c. Increase the components of the Internet Social Capital Scale (both online and offline)
3. Livelihood support will
 - a. Decrease post traumatic stress
 - b. Increase Social and Economic Resilience (except worry since high values on that scale indicate more worry)
 - c. Increase the components of the Internet Social Capital Scale (both online and offline)

However, before exploring these hypotheses, we will go into the reliability of the scales used in this study.

3.7.1. Scale construction

In the research four constructs were used which were measured during the pre- and post test:

- Impact of Event Scale (short version)
- Social and Economic Resilience scale (short version)
- Internet Social Capital Scale (both online and offline)

1.6.1.1 Impact of Events Scale (short)

In this research a short version of the Impact of Event Scale was used (see also section 5.4.1.). In order to explore the statistical properties of this short version of the IES we will conduct an item-analysis which consists of the statistics of the items (mean and standard deviation, there was no item non-response), and the internal consistency of the scale (Cronbach's alpha).

Figure 13 Mean standard deviation of IES- Short items

	mean		Standard deviation	
	pretest	posttest	pretest	posttest
Other things kept making me think about it.	3,583	3,085	1,4985	1,4418
I had waves of strong feelings about it.	3,359	2,936	1,5266	1,4051
I stayed away from reminders of it.	3,825	2,574	1,3535	1,4027
Tried not to talk about it.	3,417	2,649	1,5116	1,4421
I had trouble falling asleep.	2,777	2,521	1,4137	1,4348
I had trouble concentrating	3,068	2,404	1,5033	1,4242
Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart	3,000	2,628	1,5780	1,5861

Figure 13 indicates that, in the pretest, the level of post-traumatic stress is rather high, since all items have an average score above 2,5 which is regarded as the cutoff point for high trauma (1,5 if the scale goes from 0-4 see Creamer, Bell & Failla, 2003; p. 1494).

Furthermore, the respondents score lowest on hyperarousal with a value of about 3. In the posttest, the level of post-traumatic stress seems lower. Now values on both avoidance and hyperarousal are about 2,5 and only the items of intrusion score about 3.

Moreover, in the pre-and posttest the standard deviation of all the items is above 1, and almost 1,5 which is substantial for a 5-point scale. It indicates that, in the pre- and posttest, the level of post-traumatic stress reported varies quite a lot across the respondents.

Regarding the internal consistency of the scale we will go into the corrected item-total correlations and the Cronbach's alpha (see fig 14).

Figure 14 Internal consistency of IES-Short

Cronbach's alpha: first wave= 0,887; second wave=0,873	Corrected Item-total correlation	
	Pretest	posttest
Other things kept making me think about it.	,669	,693
I had waves of strong feelings about it.	,786	,701
I stayed away from reminders of it.	,742	,534
Tried not to talk about it.	,652	,758
I had trouble falling asleep.	,572	,654
I had trouble concentrating	,661	,646
Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart	,679	,580

Figure 14 indicates that, in the pre- and posttest, each item of the IES-short correlates quite well with the scale (all item-total correlations are above 0,35.) and give a good internal consistency (pretest: Cronbach's alpha = 0,887; posttest: Cronbach's alpha = 0,873).

Consequently, the mean of items answered is regarded as an index of the post-traumatic stress. Figure 15 outlines the key statistics of the scores on IES-short for the pre- and posttest.

Figure 15 Key Statistics of IES -Short

	mean	Standard deviation	skewness	kurtosis	# of items in the scale
pretest	3,29	1,15	-0,48	-0,67	7
posttest	2,68	1,09	0,18	-1,04	7

1.6.1.2 Social and Economic Resilience Scale (SER- short)

In order to explore the statistical properties of this short version of the SER we will conduct an item-analysis which consists of the statistics of the items (mean and standard deviation, there was no item non-response), and the internal consistency of the scale (Cronbach's alpha).

Figure 16 Mean and standard deviation of SER- Short Items

	mean		Standard deviation	
pretest: n=103; posttest: n=95)	pretest	posttest	pretest	posttest
Improvement of actual income/ Economic resources				
I am able to meet my financial needs	2,447	2,457	1,2889	1,3089
I am able to save money	1,437	1,368	1,0726	0,8998
I will have good means of earning money in the next 6 months?	2,272	2,663	1,2695	1,5953
I am able to survive in hardship times	3,388	3,883	1,0312	1,1250

Figure 16 Mean and standard deviation of SER- Short Items (continued)

	mean		Standard deviation	
pretest: n=103; posttest: n=95)	pretest	posttest	pretest	posttest
Empowerment				
I am able to get more time for productive activities	2,835	3,389	1,3798	1,5457
I am able make my own decisions	3,427	3,758	1,0252	1,2003
I feel improvement in my self-worth	2,893	3,484	1,3129	1,3198
Structural/System				
I feel I am able to exercise my rights	3,437	3,832	1,1772	1,2936
I am able to easily access support services I need easily	2,961	3,389	1,1875	1,3706
I understand organisations offering support services in the refugee camp work	3,068	3,705	1,2777	1,3596
Worry				
I am worried that conflict/war may erupt again	1,835	1,611	1,0010	1,1041
I am worried that I will fail to provide for myself and/or my family	4,417	4,189	0,9854	1,2573
I am worried that support organisations will not treat me fairly	2,757	2,516	1,2404	1,3358
I am worried my physical or emotional health will deteriorate	3,282	3,253	1,3962	1,4438
I am worried that I may not have enough money to meet my needs	3,650	3,253	1,2184	1,5843
I am worried about my safety in the camp	2,126	1,937	1,2421	1,2532

Figure 16 Mean and standard deviation of SER- Short Items (continued)

	mean		Standard deviation	
pretest: n=103; posttest: n=95)	pretest	posttest	pretest	posttest
Capability				
I feel I can get information about anything I want	3,379	3,789	1,1725	1,2874
I have acquired new skills to improve my life	2,563	3,284	1,4119	1,5344
I feel change in the amount of knowledge I hold	2,854	3,453	1,3314	1,4715
Social				
I feel my relationship with the rest of the community has improved	3,738	4,095	1,0661	1,1492
I feel my contact with the leadership in the camp has improved	3,505	3,663	0,8731	1,0975
I feel I trust my community	3,233	3,411	1,1393	1,3248

Figure 16 indicates that, in the pre- and posttest, respondents are negative about their income perspectives; in general one has enough money to survive, but is not able to meet financial needs. In the posttest, the income perspectives have only changes (positively) regarding the future, but the current financial position is evaluated the same (first two items).

Regarding empowerment, respondents are about neutral (3) but slightly negative in the pretest. But their empowerment has increased by the posttest. In the posttest all items score above the value 3 (neutral). The same counts for capability. In the pretest the scores are about neutral but slightly negative, and in the posttest all items score above 3. A similar trend emerges for structural/system. In the pretest all items score about neutral (3) and in the posttest all items score above 3 and two items even above 3,5. Also for the social

subscale the same trend can be observed: in the pretest all items score slightly above neutral (3), and in the posttest all items score about 3,5 and one item even 4.

Regarding worry a diffuse picture emerges. In the pre-and posttest, the items that are about personal worry are lower (above neutral) and those about social or situational worry are higher (beneath neutral). Furthermore, the amount of worry reported in the posttest is smaller compared to the pretest.

In the pre- and posttest, the standard deviation of most items are about 1, which is substantial for a 5-point scale. It indicates that the level of social and economic resilience reported varies quite a lot between respondents. This is especially true for empowerment and capability. The last interesting statistic is the percentage of missing values; none of the respondents missed an item.

Regarding the internal consistency of the scale we will go into the corrected item-total correlations and the Cronbach's alpha (see Figure 17).

Figure 17 Internal consistency of SER-Short

	Corrected item-total correlation	
	Pretest	posttest
Improvement of actual income/ Economic resources, Cronbach's alpha: first wave 0,68; second wave: 0,625		
I am able to meet my financial needs	,610	,548
I am able to save money	,475	,332
I will have good means of earning money in the next 6 months?	,535	,528
I am able to survive in hardship times	,249	,260
Empowerment, Cronbach's alpha: first wave 0,505; second wave 0,742		
I am able to get more time for productive activities	,312	,583
I am able make my own decisions	,276	,488
I feel improvement in my self-worth	,391	,656

Figure 17 Internal consistency of SER-Short (continued)

	Corrected item-total correlation	
	Pretest	posttest
Structural/System, Cronbach's alpha: first wave 0,553, Second wave 0,667		
I feel I am able to exercise my rights	,391	,427
I am able to easily access support services I need easily	,466	,545
I understand organisations offering support services in the refugee camp work	,330	,468
Worry, Cronbach's alpha: first wave 0,584, second wave 0,632		
I am worried that conflict/war may erupt again	,210	,001
I am worried that I will fail to provide for myself and/or my family	,230	,386
I am worried that support organisations will not treat me fairly	,174	,505
I am worried my physical or emotional health will deteriorate	,488	,477
I am worried that I may not have enough money to meet my needs	,446	,583
I am worried about my safety in the camp	,379	,222
Capability, Cronbach's alpha: first wave 0,617, second wave 0,794		
I feel I can get information about anything I want	,193	,447
I have acquired new skills to improve my life	,577	,753
I feel change in the amount of knowledge I hold	,552	,743
Social, Cronbach's alpha: first wave 0,638, second wave 0,593		
I feel my relationship with the rest of the community has improved	,601	,514
I feel my contact with the leadership in the camp has improved	,488	,433
I feel I trust my community	,301	,284

Regarding the improvement of income scale, figure 17 indicates that this scale has questionable Cronbach's alpha in the pre- and posttest (between 0,6 and 0,7). Furthermore, the item-total correlations indicate that the item "I am able to survive in hardship times" correlates rather low with the rest of the scale. This counts for the pre- and posttest. When removing this item, the Cronbach's alpha for the pretest will increase to 0,73 what is regarded as acceptable (between 0,7 and 0,8) and in the posttest the Cronbach's alpha will increase to 0,647 which is still questionable. Due to these findings, this item is removed from the scale.

Regarding the empowerment scale, figure 17 reveals that the Cronbach's alpha is rather poor (between 0,5 and 0,6) for the pretest, but acceptable for the posttest (between 0,7 and 0,8). In the pretest, all three items have a rather weak correlation with the rest of the scale (all item-total correlations are below 0,4). However, in the posttest all items have an acceptable item-total correlation ($> 0,35$). In consequence all three items are kept in the scale.

The structure/system scale has a poor internal consistency (Cronbach's alpha is 0,553) in the pretest, and a questionable internal consistency in the posttest (Cronbach's alpha = 0.667). In the pretest, the item 'understand organizations offering support services in the refugee camps work' has a low item-total correlation ($< 0,35$). However, removing this item will not improve the Cronbach's alpha. In consequence all three items are kept in the scale.

The worry scale has also a rather poor internal consistency (Cronbach's alpha is 0,584) in the pretest and a questionable internal consistency in the posttest (Cronbach's alpha is 0,632). In the pretest, there are three items with a rather low item-total correlation: 'I am worried that conflict/war may erupt again', 'I am worried that I will fail to provide for myself and/or my family', and 'I am worried that support organizations will not treat me fairly'. In the posttest two items have a rather low item-total correlation: 'I am worried that conflict/war may erupt again', and 'I am worried about my safety in the camp'. Due to these findings two items ('I am worried that conflict/war may erupt again', and 'I am worried about my safety in the camp') are removed from the scale. This resulted in a Cronbach's alpha of 0,50 in the pretest, which is rather poor and a Cronbach's alpha of 0,73 in the posttest, which is regarded as acceptable.

The internal consistency of the capability scale is questionable (Cronbach's alpha = 0,617) in the pretest and acceptable in the posttest (Cronbach's alpha = 0,794). In the pretest, the item 'I feel I can get information about anything I want' has a low item-total correlation (< 0,35) and removing this item will increase the internal consistency to 0,790 which is acceptable. Due to the fact that in the posttest this item has an acceptable item-total correlation (> 0,35), all three items were kept in the scale.

The last subscale, Social, has a Cronbach's alpha of 0,638 in the pretest which is questionable and an alpha of 0,593 in the posttest what is regarded as poor. In the pre- and posttest, the item 'I feel I trust my community' has a low item-total correlation (< 0,35) and removing this item will increase the internal consistency to the acceptable level of 0,762 in the pretest and to the questionable level of 0,687 in the posttest. Due to these findings this item was removed from the scale. A summary of the key statistics SER-short is given in figure 18.

Figure 18 Summary of SER-Short Statistics

		# items included	mean	Standard deviation	skewness	kurtosis
Improvement of actual income/ Economic resources	Pretest	4	2,05	0,98	0,858	-0,123
	posttest	4	2,16	0,99	0,620	-0,48
Empowerment	Pretest	3	3,05	0,88	=0,267	-0,640
	posttest	3	3,54	1,11	-0,373	-0,905
Structural/System	Pretest	3	3,15	0,88	-0,370	-0,403
	posttest	3	3,64	1,04	-0,502	-0,445
Worry	Pretest	4	3,53	0,77	-0,344	-0,132
	posttest	4	3,30	1,05	-0,074	-0,905
Capacity	Pretest	3	2,93	0,98	-0,215	-0,691
	posttest	3	3,51	1,21	-0,287	-1,061
social	Pretest	2	3,62	0,87	-0,670	0,655
	posttest	2	3,88	0,98	-0,708	-0,076

1.6.1.3 Internet Social Capital Scale

In this research we used the ISCS to measure social capital online and offline. We will first discuss the statistical properties of the Social Capital Online and then those of Social Capital Offline.

a) Social capital Online

Figure 19 shows the mean and standard deviation of Social Capital online.

Figure 19 Mean standard deviation ISCS (Online)

	mean		Standard deviation	
	pretest	posttest	pretest	posttest
There are several people online/offline I trust to help solve my personal problems.	3,155	3,436	1,5451	1,5832
There is someone online/offline I can turn to for advice about making very important decisions.	2,981	3,234	1,4818	1,6489
There is no one online/offline that I feel comfortable talking to about intimate personal problems. (recoded)	2,214	2,766	1,4393	1,6683
When I feel lonely, there are several people online/offline I can talk to.	2,854	3,277	1,5618	1,6225
If I needed an emergency loan, I know someone online/offline I can turn to.	2,214	2,415	1,4393	1,5548
The people I interact with online/offline would recommend me to people in their network.	3,155	3,543	1,3192	1,5216

Figure 19 Mean standard deviation ISCS (Online) (continued)

	mean		Standard deviation	
	pretest	posttest		pretest
The people I interact with online/offline would be good job references for me.	2,903	3,415	1,5244	1,5409
The people I interact with online/offline would share their last dollar/food/clothing with me.	2,019	2,500	1,4001	1,6313
I do not know people online/offline well enough to help me get ahead. (recoded)	2,204	3,085	1,1321	1,6439
The people I interact with online/offline would help me fight an injustice.	2,718	2,968	1,4580	1,5893
I have a good network of friends and family	2,796	3,160	1,5362	1,5678

Figure 19 indicates that, in the pretest, the level of Online Social Capital is about neutral and slightly negative (most items score about 3 or just below). In the posttest all items score higher and the overall level of online social capital is about neutral (only three items score between 2,5 and 3). Moreover, in the pretest, the standard deviation for all of the items is above 1, and approach the value 1,5, while in the posttest the standard deviation of all items is above 1,5. This is substantial for a 5-point scale and it indicates that the level of online Social Capital reported varies quite a lot across respondents. The last interesting statistic is the percentage of missing values; none of the respondents missed an item.

Regarding the internal consistency of the scale we will go into the corrected item-total correlations and the Cronbach's alpha (see figure 20).

Figure 20 Internal consistency of ISCS (Online)

	Corrected Item-total correlation	
	Pretest	posttest
Cronbach's alpha: first wave 0,899, second wave 0,960		
There are several people online/offline I trust to help solve my personal problems.	,741	,869
There is someone online/offline I can turn to for advice about making very important decisions.	,739	,847
There is no one online/offline that I feel comfortable talking to about intimate personal problems. (recoded)	,479	,777
When I feel lonely, there are several people online/offline I can talk to.	,526	,774
If I needed an emergency loan, I know someone online/offline I can turn to.	,615	,690
The people I interact with online/offline would recommend me to people in their network.	,742	,859
The people I interact with online/offline would be good job references for me.	,725	,853
The people I interact with online/offline would share their last dollar/food/clothing with me.	,566	,741
I do not know people online/offline well enough to help me get ahead. (reversed)	,406	,787
The people I interact with online/offline would help me fight an injustice.	,639	,795
I have a good network of friends and family	,766	,916

Figure 20 indicates that, in the pre- and posttest, each item of the online Social Capital scale correlates quite well with the scale (all item-total correlations are above 0,35). However, one should notice that in the pretest, the reversed items have the lowest item-total correlation. This trend does not appear in the posttest. In the pre- and posttest, all items contribute to a good internal consistency (first wave: Cronbach's alpha = 0,899; Second wave: Cronbach's

alpha = 0,960). Consequently, the mean of the items answered is regarded as an index Online Social Capital. In figure 23 the key statistics of the ISCS (Online) are presented.

b) Social capital Offline

Figure 21 shows the mean and standard deviation of Offline Social Capital.

Figure 21 Mean standard deviation of ISCS (Offline)

	mean		Standard deviation	
	pretest	posttest	pretest	posttest
There are several people online/offline I trust to help solve my personal problems.	3,049	3,585	1,3531	1,4548
There is someone online/offline I can turn to for advice about making very important decisions.	2,903	3,585	1,4178	1,4548
There is no one online/offline that I feel comfortable talking to about intimate personal problems. (recoded)	2,427	3,011	1,4525	1,5828
When I feel lonely, there are several people online/offline I can talk to.	3,505	3,809	1,2436	1,3382
If I needed an emergency loan, I know someone online/offline I can turn to.	1,981	2,521	1,3059	1,6312
The people I interact with online/offline would recommend me to people in their network.	3,621	4,085	,9406	1,1608
The people I interact with online/offline would be good job references for me.	3,019	4,000	1,2908	1,2181

Figure 21 Mean standard deviation of ISCS (Offline) (continued)

	Standard deviation		mean	
	pretest	posttest		pretest
The people I interact with online/offline would share their last dollar/food/clothing with me.	1,602	2,043	1,0510	1,4212
I do not know people online/offline well enough to help me get ahead. (recoded)	2,456	3,106	1,2189	1,6426
The people I interact with online/offline would help me fight an injustice.	2,854	3,128	1,2634	1,5397
I have a good network of friends and family	2,854	3,585	1,3461	1,4173

Figure 21 indicates that for the pretest, about half of the Offline Social Capital items score between 2,5 and 3. This suggests a neutral and slightly negative Offline social capital although the picture is less clear compared to the online social capital. In the posttest, all items of the offline social capital score higher and now most items are above 3 which indicates a neutral and slightly positive off line social capital. Moreover, in the pretest, the standard deviation of all items are above 1 and about half of them are about 1,5. It indicates that the level of offline Social Capital reported varies quite a lot over the respondents. The last interesting statistic is the percentage of missing values; none of the respondents missed an item.

Regarding the internal consistency of the scale we will go into the corrected item-total correlations and the Cronbach's alpha (see figure 22).

Figure 22 Item-Total correlation of ISCS (Offline)

	Corrected Item-total correlation	
	Pretest	posttest
Cronbach's alpha: first wave 0,792, second wave 0,922		
There are several people online/offline I trust to help solve my personal problems.	,564	,704
There is someone online/offline I can turn to for advice about making very important decisions.	,657	,731
There is no one online/offline that I feel comfortable talking to about intimate personal problems. (recoded)	,450	619
When I feel lonely, there are several people online/offline I can talk to.	,406	,698
If I needed an emergency loan, I know someone online/offline I can turn to.	,415	,613
The people I interact with online/offline would recommend me to people in their network.	,485	,751
The people I interact with online/offline would be good job references for me.	,392	,738
The people I interact with online/offline would share their last dollar/food/clothing with me.	,286	,540
I do not know people online/offline well enough to help me get ahead. (reversed)	,188	,744
The people I interact with online/offline would help me fight an injustice.	,480	,676
I have a good network of friends and family	,610	,835

Figure 22 indicates that, in the pretest, most of the item of the offline Social Capital scale correlates quite well with the scale (all item-total correlations are above 0,35). However, two items correlate insufficiently: 'The people I interact with online/offline would share their last dollar/food/clothing with me', and 'I do not know people online/offline well enough to help me get ahead. (reversed)' (both have a corrected item-total correlation beneath 0,35). Still the internal consistency of the total scale is acceptable (0,792). In the posttest, all items have an acceptable item-total correlation (above 0,35) and the Cronbach's alpha indicates

that internal consistency of the scale is excellent (above 0,9). Is consequence, all items are included in the scale. Figure 23 presents the key statistics of the ISCS (offline).

Figure 23 Key statistics of ISCS

	Wave	# of items	mean	Standard deviation	skewness	kurtosis
Social capital online	Pretest	11	2,64	1,01	-0,115	- 0,990
	posttest	11	3,07	1,35	-0,271	- 1,261
Social capital offline	Pretest	11	2,75	0,72	-0,302	- 0,357
	posttest	11	3,30	1,09	-0,303	- 0,923

3.7.2. Correlation between PTSD, SER and ISCS in the pretest

Figure 24 indicates that posttraumatic stress correlates negatively with all components of Social and Economic Resilience expect worry (as expected) in the pretest. Furthermore, it indicates that post- traumatic stress correlates negatively with Social Capital Offline, but not with Social Capital Online.

Figure 24 Correlation between PTSD, SER and ISCS

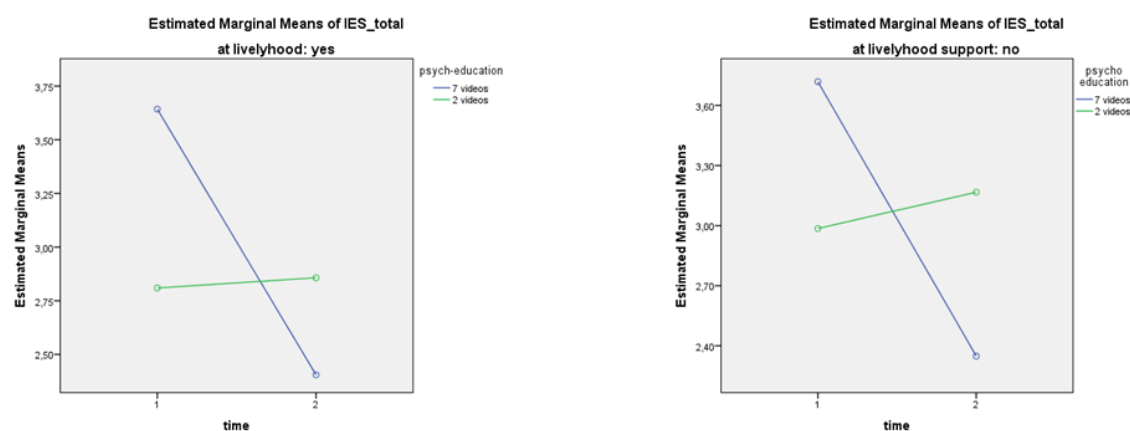
		Correlation	Significance
SER	Income	-,280**	< 0,01
	Empowerment	-,343**	< 0,01
	Worry	,487**	< 0,01
	System	-,192	0,052
	Capability	-,269**	< 0,01
	Social	-,252*	0,010
ISCS	Off line	-,187	0,058
	Online	-,068	0,495

The research questions two and three are examined in one analyses in order to explore the possibility that SHLCPTS will enhance (or decrease) the effect of livelihood support (and visa versa). These research questions are explored by means of a repeated measurement manova in which the difference between the first and second measurement of IES, SER or social capital (within factor) is related to SHLCPTS and livelihood support (between factors) (2x2x2 repeated-measures-MANOVA).

3.7.3. Can the SHLCPTS program reduce post-traumatic stress?

A 2 (SHLCPTS: 7 videos, 2 videos) x 2 (livelihood support: yes, no) x 2 (time: first, second measurement) repeated-measures MANOVA was done with SHLCPTS and livelihood support as between subject factors and time as within-subject factor. The dependent variable was post-traumatic stress measured by means of the IES-short. The interactions time*SHLCPTS, time*livelihood support and time*SHLCPTS* livelihood support are of interest in order to explore the effect of the treatment. The results indicate that post traumatic stress changes between the first and second measurement ($F(1,90) = 64,594$, $p < 0,01$). Furthermore, the interaction time*SHLCPTS is significant ($F(1,90) = 91,80$, $p < 0,01$). The interactions time*livelihood support and time*SHLCPTS* livelihood are not significant (respectively $F(1,90) = 0,00$, $p = 0,995$; $F(1,90) = 0,801$, $p = 0,373$). Inspection of the estimated means indicated that those who received 7 videos of SHLCPTS reported less post traumatic stress during the second measurement (see also figure 25).

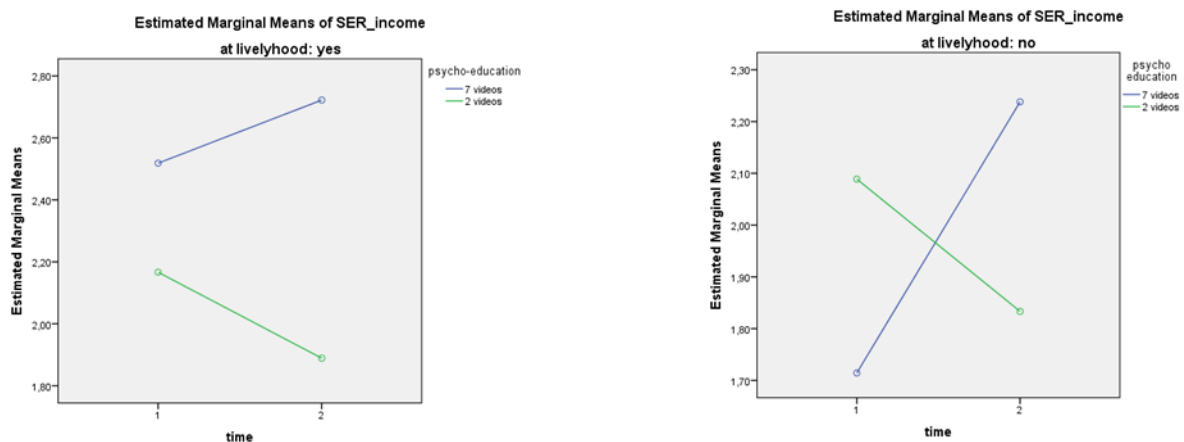
Figure 25 SHLCPTS program and trauma levels



3.7.4. Can SHLCPTS increase income of the SER-scale?

The same 2x2x2 repeated-measures MANOVA was done with income of the SER as dependent variable. The results indicate that income does not change between the first and second measurement ($F(1,91) = 0,358$, $p < 0,551$). Furthermore, the results indicate that the interaction time*SHLCPTS is significant ($F(1,91) = 15,084$, $p < 0,01$), but the interaction between time*livelihood no ($F(1,91) = 0,012$, $p > 0,10$),. The results for the interactions time*livelihood support and time*SHLCPTS* livelihood are not significant (respectively: $F(1,91) = 1,112$, $p = 0,294$; $F(1,91) = 0,842$, $p = 0,361$). Inspection of the estimated means indicated that those who received 7 videos of SHLCPTS reported higher income scores and those who received 2 videos reported lower income scores during the second measurement (see also figure 26).

Figure 26 SHLCPTS program and Income

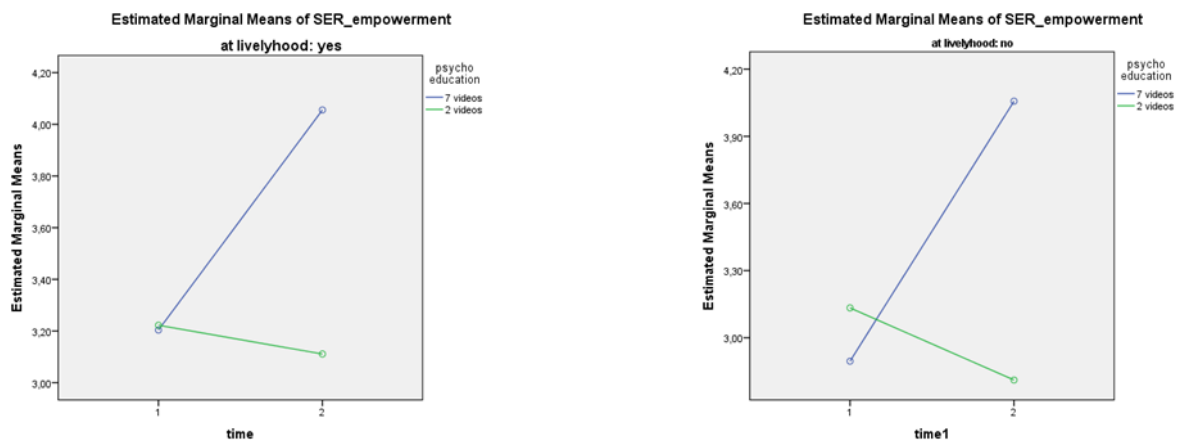


It is an interesting finding that the SHLCPTS program results in improvements on the perception of income levels, even more so that the presence of livelihood support had no effect. Given the preoccupation of refugees is finding protection (refuge) and prospects (a means of making livelihood), it is important to note that trauma support is more likely to improve perceptions of prospects than livelihood support.

3.7.5. Can SHLCPTS increase empowerment of the SER-scale?

The same 2x2x2 repeated-measures MANOVA was done with empowerment of the SER as dependent variable. The results indicate that the main effect of time is significant ($F(1,91) = 17,662$, $p < 0,01$). This indicates that overall the scores on empowerment have changed during the period of the research. Furthermore, the interaction time*SHLCPTS is significant ($F(1,91) = 42,344$, $p < 0,01$). The results for the interactions time*livelihood support and time*SHLCPTS* livelihood are respectively: ($F(1,91) = 0,069$, $p = 0,793$; ($F(1,91) = 1,921$, $p = 0,169$). Inspection of the estimated means indicated that those who received 7 videos of SHLCPTS reported higher empowerment scores and those who received 2 videos reported lower income scores during the second measurement (see also figure 27).

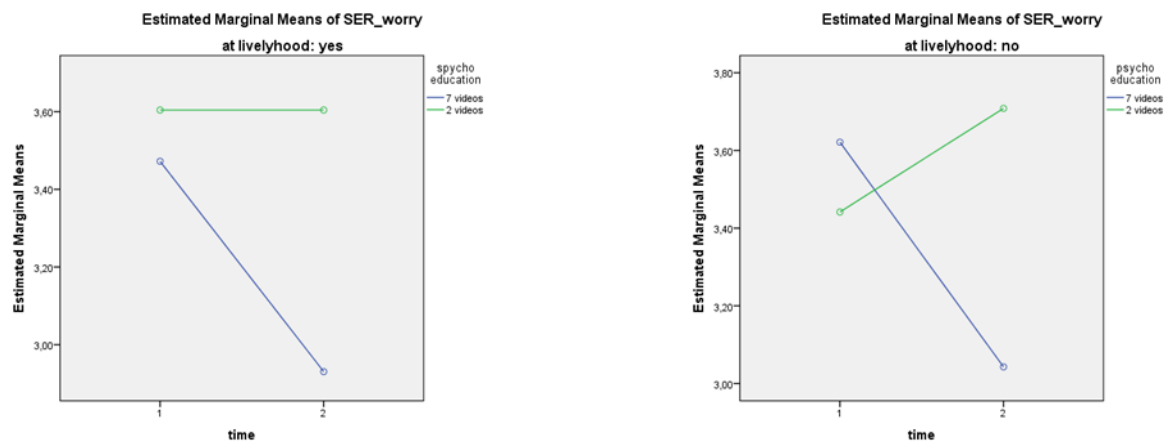
Figure 27 SHLCPTS program and Empowerment



3.7.6. Can SHLCPTS decrease worry of the SER-scale?

The same 2x2x2 repeated-measures MANOVA was done with worry of the SER as dependent variable. The results indicate that the main effect of time is significant ($F(1,91) = 5,090$, $p = 0,026$). This indicates that overall the scores on worry have changed during the period of the research. Furthermore, the interaction time*SHLCPTS is significant ($F(1,91) = 13,438$, $p < 0,01$). The results for the interactions time*livelihood support and time*SHLCPTS* livelihood are respectively: $F(1,91) = 0,368$, $p = 0,545$; $F(1,91) = 0,644$, $p = 0,424$. Inspection of the estimated means indicated that those who received 7 videos of SHLCPTS reported less worry (see also figure 28).

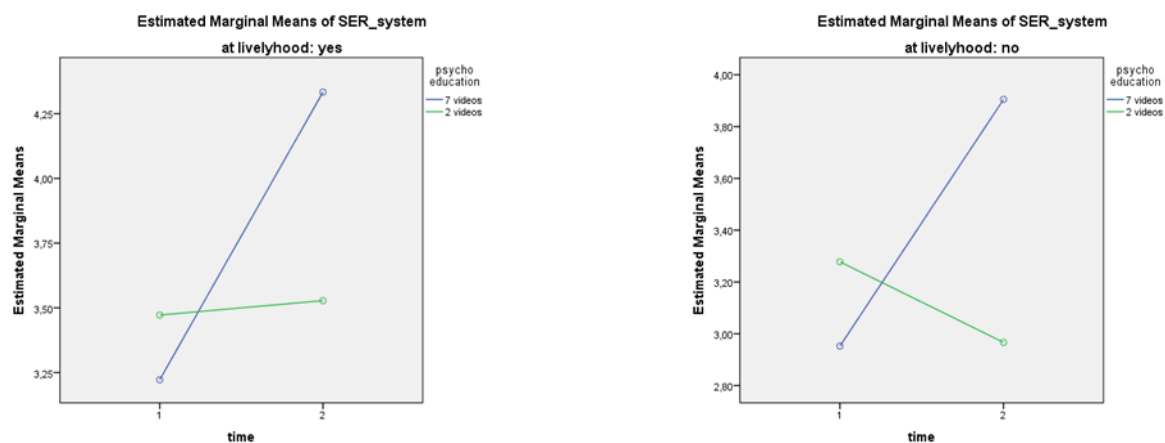
Figure 28 SHLCPTS program and worry



3.7.1. Can SHLCPTS increase system of the SER-scale?

The same 2x2x2 repeated-measures MANOVA was done with system of the SER as dependent variable. The results indicate that the main effect of time is significant ($F(1,91) = 23,480$, $p < 0,01$). This indicates that overall the scores on system have changed during the period of the research. Furthermore, the interaction time*SHLCPTS is significant ($F(1,91) = 38,632$, $p < 0,01$). The results for the interactions time*livelihood support and time*SHLCPTS* livelihood are respectively: $F(1,91) = 1,983$, $p = 0,162$; $F(1,91) = 0,311$, $p = 0,579$. Inspection of the estimated means indicated that those who received 7 videos of SHLCPTS reported higher system scores (see also figure 29).

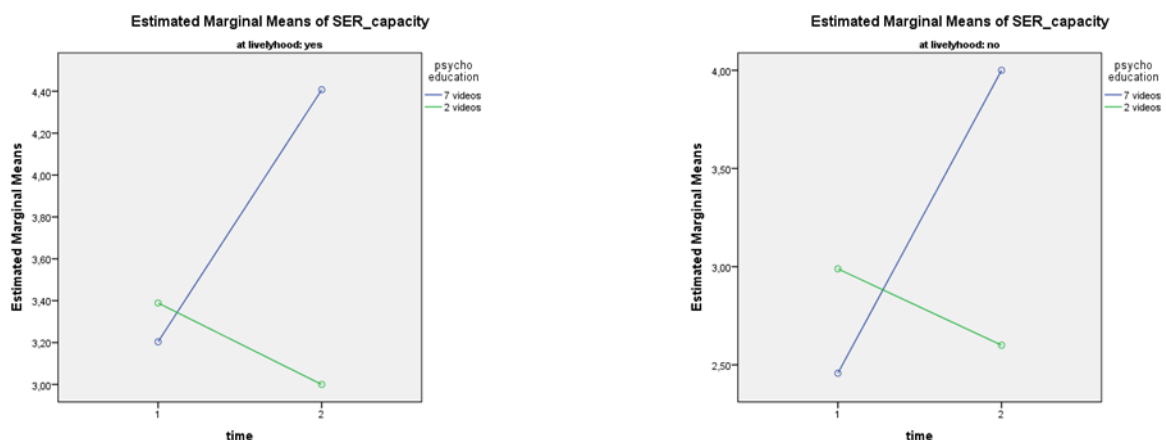
Figure 29 SHLCPTS program and system



3.7.2. Can SHLCPTS increase capability of the SER-scale?

The same 2x2x2 repeated-measures MANOVA was done with capability of the SER as dependent variable. The results indicate that the main effect of time is significant ($F(1,91) = 21,708$, $p < 0,01$). This indicates that overall the scores on capability have changed during the period of the research. Furthermore, the interaction time*SHLCPTS is significant ($F(1,91) = 69,565$, $p < 0,01$) but the interaction time*livelihood is not ($F(1,91)=0,644$, $p > 0,10$). The results for the interactions time*livelihood support and time*SHLCPTS* livelihood are respectively: $F(1,91) = 0,644$, $p = 0,424$; $F(1,91) = 0,644$, $p = 0,424$. Inspection of the estimated means indicated that those who received 7 videos of SHLCPTS reported higher capability scores (see also figure 30).

Figure 30 SHLCPTS program and Capability



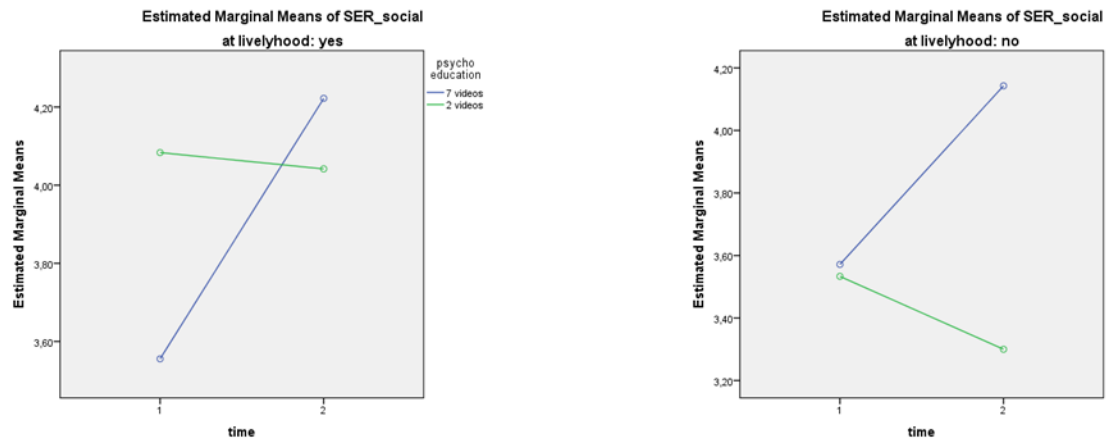
These results relate to a rise in the perception of agency, it seems that the SHLCPTS-program results in an increase in the perceptions of capability or the ability to improve prospects and particularly economic prospects.

3.7.3. Can SHLCPTS increase social of the SER-scale ?

The same 2x2x2 repeated-measures MANOVA was done with social of the SER as the dependent variable. The results indicate that the main effect of time is significant ($F(1,91) = 9,105$, $p < 0,01$). This indicates that overall the scores on social have changed during the period of the research. Furthermore, the interaction time*SHLCPTS is significant ($F(1,91) = 22,474$, $p < 0,01$). The results for the interactions time*livelihood support and

time*SHLCPTS* livelihood are respectively: $F(1,91) = 0,808$, $p = 0,371$; $F(1,91) = 0,091$, $p = 0,763$. Inspection of the estimated means indicated that those who received 7 videos of SHLCPTS reported higher social scores (see also figure 31).

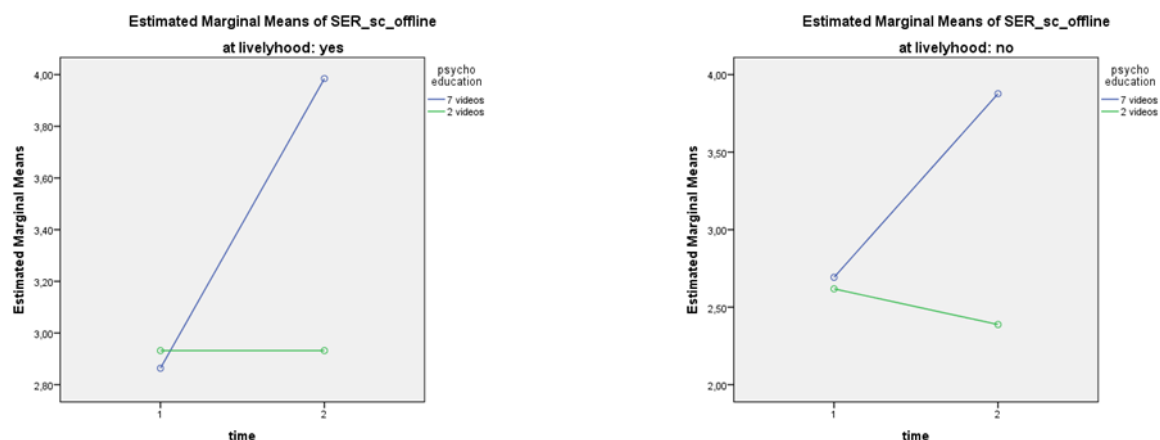
Figure 31 SHLCPTS program and Social Capital



3.7.4. Can SHLCPTS improve Social Capital Offline?

The same 2x2x2 repeated-measures MANOVA was done with Social Capital Offline as the dependent variable. The results indicate that the main effect of time is significant ($F(1,90) = 55,409$, $p < 0,01$). This indicates that overall Social Capital Offline has changed during the period of the research. Furthermore, the interaction time*SHLCPTS is significant ($F(1,90) = 82,733$, $p < 0,01$). The results for the interactions time*livelihood support and time*SHLCPTS* livelihood are respectively: $F(1,90) = 0,359$, $p = 0,551$; $F(1,91) = 1,109$, $p = 0,295$. Inspection of the estimated means indicated that those who received 7 videos of SHLCPTS reported higher Social Capital Offline (see also figure 32).

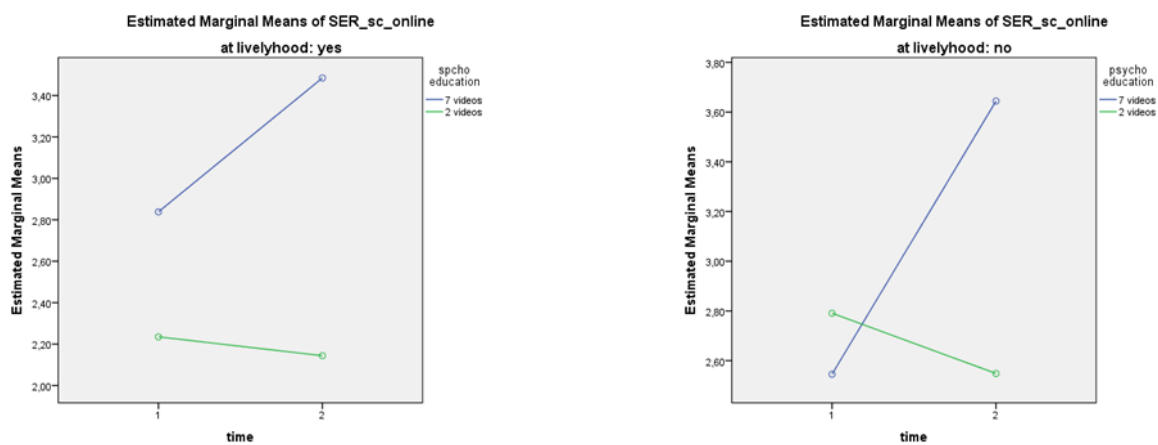
Figure 32 SHLCPTS program and Social capital offline



3.7.5. Can SHLCPTS increase Social Capital online?

The same 2x2x2 repeated-measures MANOVA was done with Social Capital Online as the dependent variable. The results indicate that the main effect of time is significant ($F(1,90) = 14,859$, $p < 0,01$). This indicates that overall Social Capital Online has changed during the period of the research. Furthermore, the interaction time*SHLCPTS is significant ($F(1,90) = 32,203$, $p < 0,01$). The results for the interactions time*livelihood support and time*SHLCPTS* livelihood are not significant (respectively: $F(1,90) = 0,675$, $p = 0,413$; $F(1,90) = 2,719$, $p = 0,103$). Inspection of the estimated means indicated that those who received 7 videos of SHLCPTS reported higher social scores (see also figure 33).

Figure 33 SHILPTS program and Social Capital Online



As mentioned above the ISCS was specifically used as an indicator of Collective trauma and so an improvement in social capital following the intervention is an indication of the positive impact of the intervention on reductions in the level of collective trauma. This could be the combined effect of perceptions of economic resilience, hence a reduction for the need for over relying on others for assistance and support leading to an improved and mutually beneficial rewarding relationships, in addition the reduction in levels of PTSD symptoms could also mean people being more sociable and less preoccupied with their symptomatic behaviour. This change is prevalent in both the online and offline social capital, indicating improvement in relationships both within the camp and on Internet based social interactions.

4. Discussions

The results of this study could be divided into four components:

1. Impact of traumatic life events on current levels of PTSD and Collective trauma,
2. Impact of PTSD levels on perception of socio-economic prospects
3. The prospects of delivering trauma intervention via ICT (impact as measured on PTSD, SER, ISCS)
4. Impact of livelihood support delivered in the camps by NGOs on levels of PTSD, perceptions of SER and collective trauma.

4.1. Traumatic events lead to higher PTSD

As was expected the levels of trauma was higher in those that had experiences various traumatic events in their lives before arriving at the refugee camp. The types of experiences detailed ranged from torture and imprisonment to extreme poverty and poverty related child-neglect and emotional abuse. Many of the women talked about childhood poverty and having to support their mothers who had become main breadwinners as the fathers were either at the national service, in prison or had left the country. There were also experiences of traumatic events on route too. Being afraid of getting caught while crossing the border, being chased by wild animals and having to hide were mentioned. There were a significant number of incidences of sexual exploitation and rape both at the national service as well as at home.

There was one case of an extreme trauma resulting from, banditry on the Sudan-Ethiopia border that caused a truck accident (the respondent was in hospital for six months). Multiple episodes of imprisonments and beatings and other forms of torture were common for the men as were the shame and feelings of guilt associated with being unable to support their families. The feelings of inadequacy were reflected both as a physical and psychological characteristic and there were examples of illnesses including potential psychosomatic illnesses and impotence as well as psychological symptoms.

Nearly all participants including those who did not necessarily think they had a particularly traumatic experience prior to arriving in the camp or since, found camp life distressing in the

extreme and many felt it made their symptoms worse (e.g. sleeplessness, violent outbursts, lack of concentration etc.)

All of this is consistent with many findings among people who have been exposed to political violence. Eric *et al.* (2012) found that in a population of Israeli youth exposed to ethnic-political violence those with lower levels of self-esteem and who experience low levels of positive parenting were most vulnerable to PTSD symptoms. Similarly an assessment of adults exposed to episodes of recurrent communal violence in conflict-affected Timor–Leste found that recurrent violence resulted in major increase in PTSD and severe distress in a community previously exposed to mass conflict, additionally poverty, on-going community tensions and persistent feelings of injustice contribute to the deterioration (Silove *et al.* 2014).

4.2. PTSD negatively impacts on Social Capital and SER

The high PTSD level was found to negatively affect self-assessment of socio-economic resilience (prospects) as measured by the SER scales. The scale measured resilience across several spheres and those with high PTSD scores were found to have a lower SER scores. This finding reflects clinical experience and research findings indicating that low socio-economic positions are overrepresented in trauma populations (Bratsrattström *et al.*, 2015).

Resource loss is an integral part of becoming a refugee. Conservation of Resource theory COR (Hobfoll 1989) states that individuals strive to obtain, retain, protect and foster their resources. COR theory predicts that stress will occur following the actual loss of resources, threat of loss of resources, or failure to gain resources following significant resource investment. Studies carried out after disasters have found that resource loss is a key predictor of psychological distress (Benight *et al.*, 1999). Studies in the context of conflicts and disaster also support COR theory, that the initial resource loss is likely to contribute to long-term loss cycles, hampering recovery (King, King, Foy, Keane & Fairbank, 1999; Norris & Kaniasty, 1995). In this manner, those who have the fewest resources are most affected in the crisis stage, they have fewer resources for recovery and so they continue to be vulnerable to the further demands that follow in the aftermath of traumatic events (Hobfoll *et al.*, 2015). Here we can say that the resource loss entailed in becoming a refugee in a camp where there are little prospects of recovering lost resources can be

contributing to the level of PTSD, while at the same time there is little prospect of recovering when you have less resources to assist that recovery. This is an important consideration to make when assessing the kind, level and manner of delivery of livelihood support. In order to make an impact on levels of trauma (or assist trauma recovery) the livelihood support needs to be proportional to that which was lost and also be given as part of trauma recovery support.

In addition, the assessment on economic standing was also an assessment of economic self-efficacy or the ability to cope with the level of resources available. In this sense the responses therefore indicate that those with higher PTSD considered their self-efficacy to be lower. Perceived self-efficacy relates to individual's perceptions of their capabilities to effect a change in their situation. People with low Perceived Self-Efficacy are more likely to proactively engage with possibilities and make better use of them. This is confirmed by other researches that found similar situations with regards to trauma and self-efficacy in similarly devastated communities. For example Saigh, Mroueh, Zimmerman, Zimmerman, and Fairbank (1995) assessed diverse spheres of self-efficacy in three groups of Lebanese adolescents and found that traumatised adolescents with PTSD exhibited a lower level of perceived efficacy in diverse aspects of their lives than did traumatised adolescents without PTSD and non-traumatized adolescents. Self-efficacy in coping is the "core belief that one has the power to produce desired effects by one's actions" and "plays a key role in stress reactions and quality of coping in threatening situations" (Benight & Bandura, 2004). Individuals with low self-efficacy see challenges as areas of personal failure, focus on these failings, and have low confidence in themselves. Self-efficacy is thus a key component of resilience to trauma (Bandura, 1997).

Taken together the above concepts provide a useful framework for explaining the interrelated nature of material loss with psychological debilitation enabling an analysis of the extent to which PTSD and resource loss are interrelated. The resource loss suffered by many refugees and the inability to regain resources after the loss leads their traumatic experiences to cause PTSD and their perceptions of their self-efficacy (their perceived inability to gain economic prospects) makes their recovery complicated.

As mentioned in previous sections the need to look into social capital emanates from our understanding of collective trauma and also its implications to societal wellbeing. And given

the role of communication technology in the lives of refugees on the move we measured social capital across both online and offline networks. The findings of this study indicate that there was a negative relationship between PTSD and social capital off-line, this is an important indication that levels of trauma maybe diminishing community resiliency (Murphy, 1987), on one hand, while on the other hand the diminished social capital might be depriving individual refugees of a crucial protective factor from PTSD.

The findings also indicated that social capital on-line was unaffected by PTSD. This could mean that due to the cost of connectivity as well as the general limitation of access to the Internet curtailed access. Observations on the ground were such that contact with those who could be accessed only on-line was considered essential on many levels both practical information as well as maintaining family and friendship links. Many participants told of their worry that 'those abroad' might be weary of the constant need of those in the camps and on route for information and resources.

4.3. SHLCPTS reduces PTSD and enhances SER levels and social capital

Despite the shortness of the intervention (given the levels of traumatic stress and its complex nature) as well as the difficulties associated with delivering therapy through ICT, it seems that the intervention did improve levels of traumatic stress and as this has been shown to impact on social capital and self assessment of socio-economic resilience they too have improved and the improvement includes on-line social capital (which observations in the camp revealed was enhanced as a result of the increased data access when participants were reimbursed for their costs). This means that treating PTSD had positive impacts on mental health status, perceptions of socio-economic status as well as community wide relationships.

Moreover, the full seven-session intervention, where the phased approach is better integrated (than the two video education sessions) was better at improving PTSD and the associated improvements to SER and Social capital.

Much of the PTSD found in the camps can be described as Complex PTSD as it had occurred from prolonged exposure to traumatic events in the context of conflict and political violence. Trauma treatment literature is relatively consistent that the phase-oriented approach we

took in developing SHLCPTS is most effective in those circumstances (Briere & Scott, 2006; Brown, Scheffl in, & Hammond, 1998; Courtois, Ford, & Cloitre, 2009; Ford, Courtois, Steele, van der Hart, & Nijenhuis, 2005; van der Hart, Nijenhuis, & Steele, 2006). The intervention focuses both on understanding symptoms as well as on the development of skills to improve management of symptoms and enhance functioning and relationships. And it seems these improvements have resulted in a more positive self-assessment of the socio-economic resilience as well as perceptions of (cognitive) social capital.

Perhaps surprisingly neither trauma levels, nor the social and economic wellbeing or social capital, was affected by the availability of livelihood support. This is surprising given the link between resources and trauma. It seems that the little livelihood support available in the camp isn't perceived by the recipients as contributing to their socio-economic resilience/prospects, nor is livelihood currently contributing to protection against trauma or loss of social capital. Given the objective to support and protect refugees and the particular need to provide them with skills and resources to regain economic viability by giving them livelihood support in various forms, it is important to address this concern and ensure that livelihood support is objectively related to reducing levels of PTSD and enhancing the perceptions of prospects. This means that it is geared at enabling refugees to enjoy similar levels of prospects as the ones they have lost upon becoming refugees. Otherwise the actual prospect of the opportunity provided is not going to be perceived as being adequate to recover viability post the traumatic loss.

4.4. Delivery via ICT

The results in terms of the psychosocial improvements seem to speak clearly of the potentials entailed in the delivery approach. Indeed focus group discussions as well as individual feed back highlighted the main advantages of delivering trauma support via ICT mediation. The ability to choose your own time and space was a great advantage reinforcing the idea of regaining control over one's own healing. The ability to get information and treatment in your own language was another that was raised by many and finally the ability to go over things again and get additional information on things that weren't clear at the start was a unique advantage of the approach.

However the approach was not without its problems either. The technical problems of delivering via an APP and through social media proved difficult and even impossible in most cases due to the lack of connectivity and unreliability of the weak connection for downloading videos. Alternatives suggested by the refugees themselves were better at addressing some of these concerns. One approach was to download all videos to one phone (from a memory card) and then the research assistants were able to share these via Bluetooth. This worked well in resolving much of the technical hurdles, but it also meant that the interactivenss in the delivery was lost. Participants couldn't leave messages and feedback, or access additional text based support and encouragement, as was the original idea.

This led to an additional and more serious problem; participant felt all alone as they were confronted with the potentially difficult material they were trying to cope differently with. This could result in the possibilities of dropping out altogether or at least loosing motivation to fully engage with traumatic memories. Many people found the resourcing techniques (breathing exercises and 'safe calm place') more attractive than the bilateral stimulation that require, greater commitment and deeper engagement to focus on and process traumatic memories. A feedback from one of the most severely traumatised participants captured this well during an interview. She said:

...it [the intervention] is really helpful, it made sense to me, it touched everything I felt and everything that was happening to me and eventually the butterfly hugs were helpful too, but I felt physically tired every time I did them, I really hated how it initially made me feel, I hated your voice on the video. There were times when I felt physically ill but then I started to notice I was calmer later and less anxious. I started sleeping better and now I see how it helped. But it really is tough and there should be a contact person to tell you it will be ok in the end. (A/ Hitsats Camp/ Interviewed 14/08/2017)

Without major improvements to the technology, delivering the whole intervention via ICT risks either high dropout rate or unnecessary distress for those committed to carry on with the intervention.

4.5. Conclusion

Given the pertinence of addressing the concern of the care and protection afforded to refugees we wanted to know the level of trauma among Eritrean refugees and found that there indeed is a concerning high level of trauma and this was not limited to those who were victims of horrific situations such as the human trafficking in the Sinai but affected many others who were not abducted and held for ransom but were affected as friends and family members or even simply fellow country men and women who were following the situation very closely via social media and internet radio. Both the widespread nature of traumatisation and the fact that people not directly affected were also traumatised is indicative of the prevalence of not just PTSD but also collective trauma.

Having understood this we then moved to trying to see if we can develop trauma support that responds to the needs of refugees whose lives have been totally devastated by severe trauma. In particular we wanted to see if levels of trauma could be lowered through an intervention that was amenable to the context of low resource and extremely high levels of trauma and deprivation. This led to the development of SHILPTS that responded well to trauma, with some reliance of podcasts and radio broadcasts to compliment the work.

We then moved to testing the potentials of making even more use of ICT given our understanding of the highly mobile nature of Eritrean refugees and the significance of social media and the smart phone as both a reliable source of information and a means of social contact across the scattered communities.

This research has demonstrated that the SHLCPTS delivered through ICT works to reduce trauma and improve both the perception of Social Capital as well that of Socio-Economic Resilience. This was measured across the three tools and the results were consistent through out.

The results of the third study indicate that PTSD as measured on the IES-short, all aspects of the SER and Social Capital improved following the SHLCPTS with significantly better results for those who received the full 7 video intervention as opposed to the 2 video education on trauma and its impacts.

However, none of these variables were affected by the livelihood support provided. Figure 34 shows the strength of the effect of trauma intervention on IES-short, the various elements of Social and Economic Resilience, and Social Capital.

Partial eta-square can be interpreted as the percentage of variance in change between the first and second measurement plus the associated error variance (Pierce, Block & Aguins, 2004). From this perspective it can be said that SHLCPTS has a strong effect on post-traumatic stress, capability (of the SER) and Social Capital Offline.

This means that through this kind of support refugees can reduce their trauma symptoms, enhance the perception of their capacity to improve their economic prospects and reduce the level of collective trauma by enhancing their social capital in the camp

Figure 34 Summary of Results of the Third Study

		F value	Partial eta-square
IES-short		$F(1,90) = 91,80, p < 0,01$	0,505
SER	Income	$F(1,91) = 15,084, p < 0,01$	0,142
	Empowerment	$F(1,91) = 42,344, p < 0,01$	0,318
	Worry	$F(1,91) = 13,438, p < 0,01$	0,129
	System	$F(1,91) = 38,632, p < 0,01$	0,298
	Capability	$F(1,91) = 69,565, p < 0,01$	0,433
	Social	$F(1,91) = 22,474, p < 0,01$	0,198
Social capital	Offline	$F(1,90) = 82,733, p < 0,01$	0,479
	Online	$F(1,90) = 32,203, p < 0,01$	0,264

Bringing the levels of trauma down seems to have improved people's perception of their socio-economic status/prospects as well as their social capital. This change occurred within a six week period where nothing much by way of income levels or other opportunities had changed, meaning that all the improvement that was measured in social capital and socio-economic resilience are in fact improvements in perception following a reduction in the level of trauma as a result of SHLCPTS.

The main objective of the SHLPTC was to enable victims of trauma gain understanding of their symptoms and then regain some control over them through the use of simple self-help exercises that enabled them to experience better relationships in their day to day life within their community. Symptoms of PTSD (i.e., flashbacks, nightmares, intrusive thoughts, increased arousal) are experienced as uncontrollable and unavoidable, thus possibly diminishing the victim's cognitive and emotional control. Perceived life control is the cognitive appraisal that has been shown to be significantly associated with PTSD symptoms (Bolstad and Zinbarg, 1997; Regehr *et al.*, 2000), in fact the development of PTSD is strongly associated with the loss of control. Rothbaum, (1992) concludes that PTSD is most likely to develop when the stressful event is perceived as both dangerous and uncontrollable. Perceptions of control felt during the trauma or controllability in the future is important in effecting on going functioning among trauma survivors (Kushner *et al.*, 1992). Regaining control over aspects of their symptoms and their reactions to them gave people options and potentials that weren't open to them, consequently enabling them to have a different outlook on their lives and their fate including perhaps their assessment of their protection and prospects in their current location.

Attaining a level of control could also have a ripple effect of healing, Arnkoff and Mahoney (1979) suggested the following four beliefs protected individuals against on-going pathology resulting from an extremely stressful event: having skills to control one's response, having skills for controlling the occurrence of reinforcement, being able to regulate one's mental activities and the ability to inhibit distressing mental activities, PTSD undermines these control-related beliefs the resultant reduction in locus of control renders the victim to on-going trauma. Inability to take control of one's life reduces one's belief in their ability to exert any control over their environment (Mikulincer *et al.*, 2009), overcoming the trauma

induced learnt helplessness was significant to victims of trauma and their perception of their environment and others who share that environment. The skills learnt through the intervention gave people a significant level of control over their response and their responses to day-to-day challenges in their extremely difficult environment. These small victories in alleviating symptoms and controlling reactions resulted in an enhanced sense of capability to improve social and economic reality or self-efficacy.

A sense of personal efficacy is the foundation of human agency (Bandura 1997, 2001a), people who believe that potential threats are unmanageable view their entire environment as fraught with danger, they thus magnify the severity of possible threats and worry about potential perils that are unlikely to happen. This then starts a negative cycle of thoughts that ends up hampering functioning (Bandura, 1997; Jerusalem & Mittag, 1995; Lazarus & Folkman, 1984). With little felt control over their sense of agitation and anxiety participants felt that there was very little going well for them and that there is only further hardship and danger in their current environment. However once they regained control over their symptoms they were able to have a more realistic appraisal of their environment and their own capacity to influence it and their prospects there.

In studies in which perceived control is varied experimentally, people who are led to believe they can exercise some control over aversive events display lower physiological arousal and less performance impairment than do those who believe they lack personal control, even though both groups are subjected equally to the aversive events (Geer, Davison, & Gatchel, 1970; Glass, Singer, Leonard, Krantz, & Cummings, 1973; Litt, Nye, & Shafer, 1993; Sanderson, Rapee, & Barlow, 1989). Inevitably persistent posttraumatic stress has multiple and complexly interrelated determinants. Making the disentangling of the unique contribution of self-efficacy to the psychosocial in the aftermath of traumatic experiences complicated, however this research has demonstrated that giving people information about their PTSD symptoms and enabling them to learn techniques that allow them to take control of these symptoms results in reducing PTSD and enhancing their perceptions of their economic prospects as well as relationships with others around them.

Trauma and particularly the kind of trauma caused by a prolonged and devastating event such as political conflict and war, is not an isolated transient event, rather it entails a whole catalogue of losses: loss of life, physical injuries, and property destruction. Often victims

suffer stress not only from the catastrophic event itself, but also from the strain of continuing adaptations in the wake of the devastation. In addition to personal physical and psychological injury as well as death and injury of family members there is often a wide spread loss of social connection, extensive damage or loss of property and in many instances the loss of one's very livelihood, the trauma is collective not just personal. Survivors find themselves in a community in severe shock, which can further accentuate the traumatic experience (Benight and Bandura, 2003). In the face of such daunting devastation and enduring hardship it requires a solid sense of self-efficacy to persevere with recovery efforts and even dealing with relief agencies that assist might prove a source of further strain (Bolin, 1982). Trauma support such as SHLCPTS can be a very good starting point to regaining control and self-efficacy and turning the vicious cycle around, both by unlocking personal and community resilience and also preparing the ground for better utilisation of social support initiatives such as the livelihood support provided in the refugee camps.

To the contrary of the popular push-and-pull migration theory that assumes refugees make a decision regarding migration based on the analysis of pluses and minuses it seems that trauma leaves them little capacity to make such analysis. With their sense of self efficacy diminished and in a trauma induced state of hyper vigilance that alleviates the threat entailed in their environment, they are almost programmed to see their environment fraught with insurmountable danger, livelihood support and refugee protection notwithstanding.

This research did not specifically ask about immanent decisions pertaining secondary migration as this is seldom answered truthfully in formal circumstances, however there was evidence during discussions to suggest a gradual ability to take in and process contextual information. One such example came at the end of a focus group discussion in Hitsats refugee camp. The participant, a young man, who was part of the group who took up the full six-week sessions hesitantly asked (hesitant because he was not sure whether it was an appropriate question):

‘...this may not be relevant but ever since listening to you on the videos I have been wondering if... in Europe, where you live there are traumatic events and if people there also suffer from PTSD?’ (D/ Hitsats Camp/ Interviewed 12/08/2017)

Nearly everyone in the group resonated and they all wanted to hear the response. The question and the enthusiasm to hear the answer was a reflection of their increased capacity to begin taking in contextual information.

The above is an illustration of the finding that refugees gained control over their lives and supports the general results of these studies. The results of the last two studies (qualitative, and quantitative over the three studies) point to the same direction: The full SHLCPTS program (psycho education, demonstration of exercises to get control over distressing PTSD symptoms and an encouragement to share experiences with members of the community) is capable of reducing PTSD, increasing Social and Economic Resilience and increasing Social Capital.

However, one can ask questions about the reliability and validity of the scales used in the successive studies.

Concerning PTSD, one can state that the measures that were used have been effective; both IES-R and IES-Short were effective in measuring levels of trauma reliably in the various contexts.

The scale analyses indicate that the reliability of some aspects of the SER are questionable. This is probably due to the abstractness of such construct as resilience as well as the abstractness of the aspects of Social and Economic Resilience (social, system, capacity, empowerment, worry and income). Furthermore, system and especially income are context dependent constructs; the items that are applicable differ due to the location of the research. Nonetheless despite the fact that some aspects of the SER had a questionable reliability, the results within a study (Uganda and Ethiopia) as well as the results across the studies, suggest that the core of the constructs is captured in the scale. These findings were backed up with the results of the qualitative data (especially in the Uganda study).

When it comes to validity of the research there are a couple of points that should be made. The first point to make is the fact that the research started with a theoretical framework defining the constructs, their operationalization as well as the interaction between the various constructs. This framework is used as a guideline throughout the studies and is supported by the (qualitative and quantitative) results. The second point regards the sample that is not (nor did it set out to be) representative for the population. This may have an

impact on the level of trauma identified (it may have overestimated the level of trauma, since no random sampling was applied); it is not thought to have impacted on the findings regarding the effectiveness of the SHLCPTS program. This can be concluded from the fact that irrespective of the contexts (Uganda or the camps in Ethiopia) and despite the differences in the way that SHLCPTS was implemented its impact was clearly evident across both studies. This is indicative of the fact that the self-help program is indeed effective in lowering trauma and promoting socio-economic resilience.

We were able to show that the self-help exercises together with the information/education element of the intervention is effective rather than the education/information sessions on their own. In addition to this in third study we fully demonstrated that, despite the enormous needs to improve connectivity and adapt Apps to work in contexts of low connectivity, delivering trauma support via ICT is a viable potential. This is a crucial opportunity for delivering trauma support that will have an impact in raising social capital as well as social and economic resilience in a highly mobile community with concerning levels of trauma. The fact that SHLCPTS can be delivered through a medium that is already known, trusted and adapted by the refugees themselves and the fact that language barriers can be surmounted by preparing videos in native languages makes the particular approach attractive even in contexts of lower mobility and relatively more resources e.g. among refugees in Europe.

Finally, the IES-Short was specifically adapted for use via ICT in conjunction with SHLCPTS. It provided reliable measurement of both levels of trauma as well as impacts of the intervention. These facts make the APP a comprehensive tool that measures level of traumatic stress, offers support, and measures progress from a device that is already in wide use among refugees.

Further Reading:

Research reports

Reisen, van, M., Stokmans, M., Kidane, S., Melicherova, K., Schoenmaeckers, R. (2018), Causes and dynamics of mixed unskilled migrants trafficked within the Horn region. A study including Eritrea, Ethiopia and Sudan. Synthesis Report. Tilburg University.

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Kidane, S. (2018) SHLPTS Intervention. *Presentation*. Tilburg University, Tilburg

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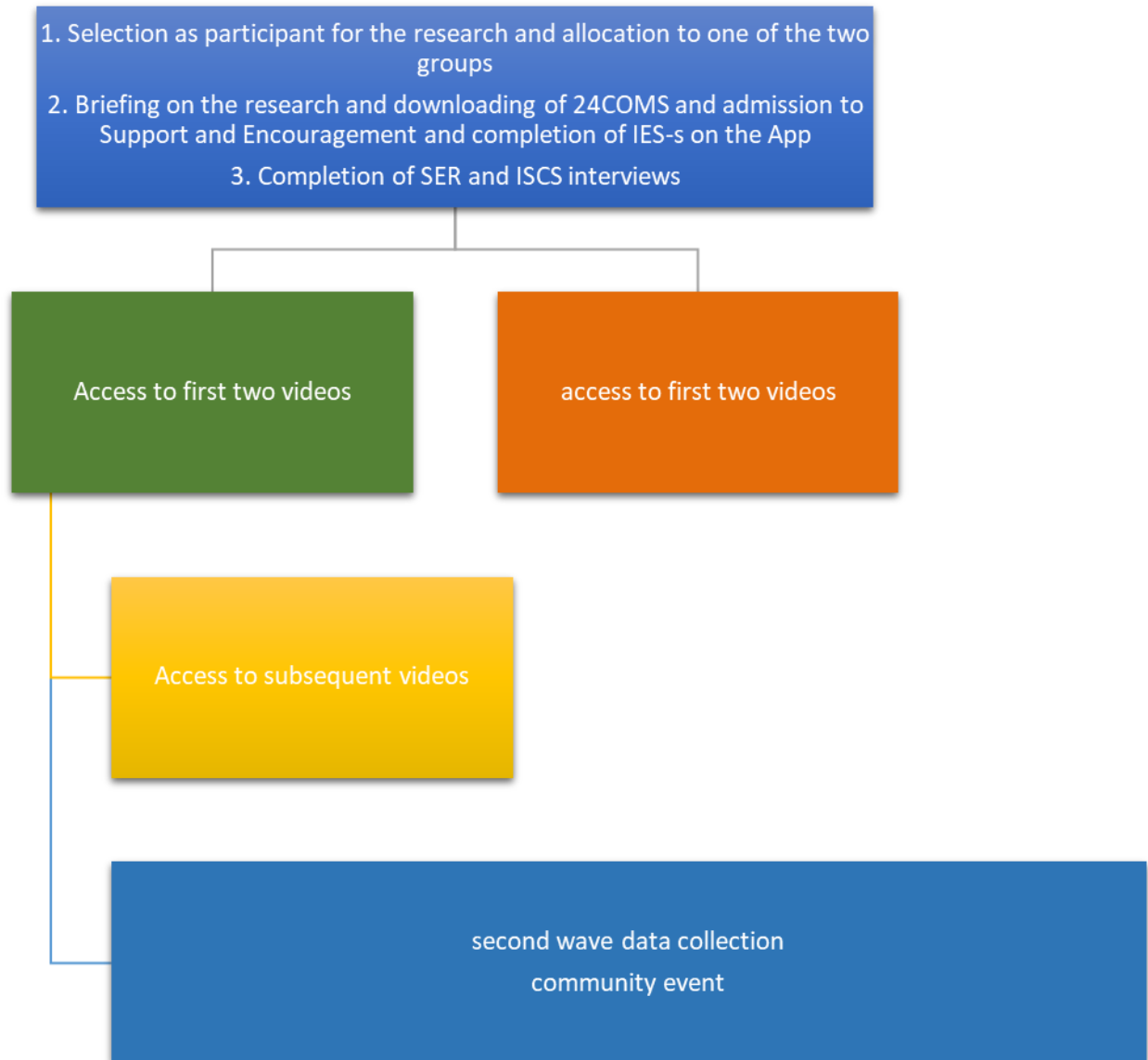
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6. List of Acronyms

ANOVA	Analysis of Variance
CCBT	Computer Assisted Cognitive Behavioural Therapy
COR	Conservation of Resource
DFID	Department for International Development
DSM	Diagnostic and statistical manual of mental disorders
EMDR	Eye Movement Desensitization Reordering
HAP	Humanitarian Assistance Programs
ICT	Information and Communication Technology
ISCS	Internet Social Capital Scale
IDP	Internally displaced person
IES	Impact of Events Scale
IES-R	IES-R Impact of Events Scale – Revised
IES-S	Impact of Events Scale Short
MANOVA	Multivariate analysis of variance
NET	Narrative Exposure Therapy
PTS	Post Traumatic Stress
PTSD	Post Traumatic Stress
SER	Social and Economic Resilience
SHLCPTS	Self-Help Low Cost Post Traumatic Stress Program
WHO	World Health Organization

7. Annexes

Annex i: Flow Chart for use of 24COMS in the research



Annex ii: Summary translation of instructions on video

1. A Safe Calm Place

In a moment I would like you to just close your eyes and do the following for a minute or so.

Identify a place that gives you a feeling of safety or a feeling of calm (please do not continue with the exercise if you can not identify a place that is not connected to anything negative. Stop if negative feelings come).

Now bring up the image of that safe place, notice the colours and any other sense and experiences that go with it. Notice the feel of it and notice the sensations that come up in your body- your chest, your stomach, shoulders or face. Notice if you are feeling nice, good, positive feeling.

Now identify a single word that would go with it ... (such as peaceful describing the feeling or forest describing the scenery) this is your label for the experience

Focus on the imagery... your safe calm place and notice the pleasant feeling and say your word in your mind. Just notice the feelings as you allow yourself to merge into the scene while you repeat the word in your mind.

Repeat the whole thing again a couple of times.

2. Subjective units of Distress (measuring levels of distress)

Take a moment to identify something that bothers you a lot and rank it from 0 – 10. Then do your safe calm place exercise. If the negative feeling goes away it indicates you are able to deal with any disturbances that may arise.

3. Butterfly Hug

cross your arms over your chest, so that the tip of the middle finger from each hand is placed below the clavicle or the collarbone and the other fingers and hands cover the area that is located under the connection between the collarbone and the shoulder and the collarbone and sternum or breastbone. Hands and fingers must be as vertical as possible so that the

fingers point toward the neck and not toward the arms.

If you wish, you can interlock your thumbs to form the butterfly's body and the extension of your other fingers outward will form the Butterfly's wings.

Your eyes can be closed, or partially closed, looking toward the tip of your nose. Next, you alternate the movement of your hands, like the flapping wings of a butterfly. Let your hands move freely. You can breathe slowly and deeply (abdominal breathing), while you observe what is going through your mind and body such as thoughts, images, sounds, odors, feelings, and physical sensation without changing, pushing your thoughts away, or judging. You can pretend as though what you are observing is like clouds passing by.

Do the Butterfly Hug...observe what is happening to you...without judging or trying to change it...Stop when you feel in your body that had been enough and lower your hands to your thighs.

Now run a movie in your head while you are doing the Butterfly Hug from just before the incident took place to the present.

Please do the Butterfly Hug...observe what is happening to you...without judging or trying to change it...Stop when you feel in your body that had been enough and lower your hands to your thighs

Use a safe calm place technique if you need to

4. Maintenance exercises

Earth for Grounding: Take a minute or two to "land"... to be here now... place both feet on the ground, feel the chair supporting you. Look around & notice 3 new things... What do you see.... What do you hear ?" [Attention should be directed outwards to the reality of safety in the present]

Breathing for Centering: Breathe in through your nose (for abdominal breathing) as you count 4 seconds, then hold for 2 and then breathe out for 4 seconds. Take about a dozen deeper slower breaths like this". [Attention is directed inwards to your centre]

Saying Calm and Controlled: switch on the RELAXATION RESPONSE "...Do you have saliva in your mouth?...make more saliva....when you are anxious or stressed your mouth often dries because part of the stress emergency response is to shut off the digestive system. So when

you start making saliva you switch on the digestive system again and the relaxation response “– (that is why people are offered water or tea after a difficult experience- when you make saliva your mind can also optimally control your thoughts & your body). [Attention is directed to producing saliva & becoming calmer, focused & more in control]

Firing your imagination: Bring up an image of your SAFE PLACE—what do you feel & where do you feel it in your body? Install this feeling with brief slow BLS / butterfly hugs.

Annex iii

Correlation of items of the IES-R with their own scale and other scales as reported in first wave (n=471) of the Uganda study

Subscale/item	Corrected item total correlation	Correlation avoidance	Correlation hyperarousal
Intrusion			
Any reminder brought back feelings about it	0,86	0,71	0,82
I had trouble staying asleep	0,84	0,73	0,87
Other things made me think about it	0,87	0,74	0,83
I thought about it when I didn't mean to	0,68	0,75	0,65
Pictures about it popped into my mind	0,79	0,65	0,74
I found myself acting/feeling like I was back at that time	0,80	0,69	0,84
I had waves of strong feelings about it	0,87	0,72	0,91
I had dreams about it	0,76	0,61	0,74
Avoidance	Corrected item total correlation	Correlation intrusion	Correlation hyperarousal
I avoided letting myself be upset when I thought about it or was reminded of it	0,74	0,62	0,57
I felt as if it hadn't happened or wasn't real	0,70	0,68	0,65
I stayed away from reminders of it	0,77	0,60	0,59

Subscale/item	Corrected item total correlation	Correlation avoidance	Correlation hyperarousal
I tried not to think about it	0,75	0,52	0,50
I was aware that I had a lot of feelings about it	0,65	0,83	0,80
My feelings about it were numb	0,65	0,65	0,63
I tried to remove it from my memory	0,65	0,61	0,60
I tried not to talk about it	0,75	0,69	0,70
Hyperarousal	Corrected item total correlation	Correlation avoidance	Correlation intrusion
I felt irritable and angry	0,87	0,70	0,88
I was jumpy and easily startled	0,74	0,74	0,75
I had trouble falling asleep	0,89	0,71	0,88
I had trouble concentrating	0,88	0,74	0,84
Reminders of it caused me to have physical reactions such as sweating, trouble breathing, nausea or a pounding heart	0,88	0,69	0,84
I felt watchful and on-guard	0,86	0,73	0,84

Annex iv

Correlation of items of the SER-tool with their own scale and other scales as reported in first wave (n=471) of the Uganda study

	Corrected item total correlation	Correlation				
		Capability	Income	Empowerment	System	Worry
Social						
I feel I trust my community	0,477	0,146	0,183	0,183	0,067	-0,074
I feel attached to my family	0,421	0,114	0,062	0,070	-0,083	-0,057
I feel my contact with the leadership in my community has improved	0,535	0,292	0,288	0,223	0,192	-0,018
I feel my relationship with the rest of the community has improved	0,581	0,244	0,347	0,266	0,111	0,049
My participation in the groups has improved	0,347	0,042	0,320	0,193	-0,068	0,175
Capability	Corrected item total correlation	Social	Income	Empowerment	System	Worry
I feel my ability to pay for medication has improved	0,664	0,139	0,414	0,320	0,405	-0,220

Correlation of items of the SER-tool with their own scale and other scales as reported in first wave (n=471) of the Uganda study (continued)

	Corrected item total correlation	Correlation				
		Capability	Income	Empowerment	System	Worry
I feel I can get information about anything I want	0,714	0,259	0,516	0,479	0,510	-0,191
I feel I have skills to enable me improve my life	0,750	0,242	0,543	0,430	0,419	-0,107
I feel I have acquired new productive skills to improve my life	0,733	0,226	0,523	0,435	0,360	-0,085
I feel change in the amount of knowledge hold	0,769	0,303	0,592	0,514	0,479	-0,122

	Corrected item total correlation	Correlation				
		Soci al	Capability	Empowerment	System	Worry
Income						
I am able to save money	0,551	0,29 3	0,378	0,328	0,170	0,006
My income will continue to improve in the next 6 months	0,704	0,24 3	0,509	0,473	0,316	-0,087
I will have employment in the next 6 months	0,491	0,19 7	0,424	0,323	0,122	-0,142
I will be able to own a business in the next 6 months	0,718	0,24 1	0,532	0,444	0,329	-0,126
I have market for my produce	0,765	0,27 8	0,428	0,492	0,334	-0,026
I am able to market my own produce	0,758	0,26 0	0,422	0,506	0,336	-0,004
I am able to contribute to household income	0,741	0,28 5	0,424	0,535	0,265	-0,006
My personal assets have improved	0,652	0,23 3	0,522	0,487	0,367	-0,086

	Corrected item total correlation	Correlation				
		Soci al	Capability	Empowerment	System	Worry
I am able to survive in hardship times	0,542	0,26 7	0,246	0,364	0,039	0,091
I am able to manage my own income	0,697	0,13 3	0,317	0,582	0,289	0,066
I am able to make decisions on income in your household	0,651	0,23 2	0,325	0,597	0,333	0,062
I am able to adopt new production technologies	0,490	0,17 7	0,544	0,536	0,458	-0,013

	Corrected item total correlation	Correlation				
		Social	Capabilit y	Income	System	Worry
Women's Empowerment						
I am able to take up new initiatives independently	0,634	0,246	0,428	0,563	0,349	-0,052
I am able to make decisions more independently	0,636	0,193	0,373	0,509	0,334	0,003
My hours of household work have been able to reduce	0,345	0,101	0,330	0,292	0,343	-0,045
Have you been able to gain more time for productive	0,709	0,143	0,511	0,517	0,550	0,005

activities						
Has your freedom of movement improved	0,584	0,163	0,368	0,458	0,508	-0,026
I feel improvement in my self-worth	0,689	0,152	0,242	0,471	0,365	0,072
feel there has been change in my values	0,733	0,188	0,314	0,533	0,447	0,078
I feel I am in charge of my body	0,687	0,126	0,300	0,472	0,416	-0,003
I feel I am able to make decisions about contraceptive use	0,679	0,159	0,363	0,514	0,426	-0,021
My household relations have	0,660	0,254	0,293	0,406	0,262	-0,021

improved						
There has been change in the way I resolve conflicts in my household	0,586	0,292	0,251	0,412	0,229	0,017
There has been a change in my husband's attitude towards me	0,493	0,380	0,321	0,375	0,186	-0,002
System	Corrected item total correlation	Social	Capabilit y	Income	Empowerment	Worry
I feel I am able to exercise my rights	0,712	0,029	0,425	0,340	0,534	-0,003
I am able to access legal services much easier	0,712	0,083	0,566	0,400	0,488	-0,108

	Corre cted item total corre lation	Correlation				
		S o c i a l	C a p a c i t y	I n c o m e	Empowe rment	S y s t e m
Worry						
I am worried that conflict may happen again in my society	0,431	0 , 0 8 3	- 0 , 0 6 1	- 0 , 0 3 1	-0,018	- 0 , 1 2 7
I am worried that I will fail to provide for my family	0,545	- 0 , 0 4 3	- 0 , 2 9 3	- 0 , 1 6 7	-0,120	- 0 , 1 5 2

	Corrected item total correlation	Correlation				
		Social	Capacity	Income	Empowerment	System
I am worried I may not find a job	0,475	-0,031	-0,028	-0,016	-0,097	-0,061
I am worried of hostility from members of my community	0,380	-0,013	-0,022	-0,064	-0,010	0,017
I am worried I may not get enough money	0,583	0,013	-0,000	0,010	0,111	0,013

	Corrected item total correlation	Correlation				
		Social	Capacity	Income	Empowerment	System
		3	1	1		0
I am worried that my leaders will not address the needs of my community	0,460	0 , 0 2 2	- 0 , 0 7 4	0 , 0 4 6	0,003	- 0 , 0 1 2
I am worried that climate change will affect food production	0,391	0 , 1 0 7	- 0 , 0 8 7	0 , 1 3 7	0,117	- 0 , 0 2 7
I am worried that the government	0,474	0 , 0	- 0 ,	- 0 ,	0,000	- 0 ,

	Corrected item total correlation	Correlation				
		Social	Capacity	Income	Empowerment	Systm
will not address my needs		52	147	014		069
I am worried my psycho-social status will worsen if not treated	0,264	0,01010	0,0222	0,0334	0,231	0,392
I feel confident that I can overcome challenges I have experienced in the past	-0,011	0,0263	0,0292	0,0290	0,203	0,100

