Abstract:

Survivor guilt is a complex emotional reaction that can arise after surviving trauma in which others die. No studies have systematically investigated psychological treatment for survivor guilt. Imagery Rescripting (ImRs) involves mental manipulation of imagery, with the aim of updating its meaning and emotional valence. The present study was a proof-of-concept investigation of treatment of survivor guilt using ImRs. ImRs was evaluated as a separate experiential technique, delivered as an additional module to standard treatment for Post-Traumatic Stress Disorder (PTSD). Thirteen participants with self-reported survivor guilt attended two consecutive imagery therapy sessions. The elaboration session focused on exploring imagery, the rescripting session used ImRs to modify imagery. Significant improvements were observed on idiographic process measures of cognitive and emotional components of survivor guilt and distress from survivor guilt imagery following the rescripting session. However, standard outcome measures for PTSD and depression failed to detect effects. There was a trend for treatment responders to more commonly experience survivor guilt relating to the meaning of survival (rather than regretted actions), and to use rescripts involving the afterlife. The study provides preliminary evidence that ImRs can be used as an experiential technique to treat survivor guilt.

Keywords:

Survivor guilt, Guilt, Trauma, PTSD, Imagery, Imagery rescripting.

Feelings of guilt are common after traumatic experiences and often play a role in the development and maintenance of post-traumatic stress disorder (PTSD; Kubany et al., 1996; Oktedalen, Hoffart, & Lagkaas, 2015). Guilt can relate to a range of peri- and post-traumatic experiences and reactions. Individuals who survive a traumatic event in which others died may feel intense guilt about being fortunate to remain alive. They may grapple with questions about the role that they played, whether they deserved to survive, and the meaning of survival (Matsakis, 1999; Pethania, 2018). Survivor guilt is common amongst PTSD sufferers (Murray, 2018) but, as yet, no empirically validated treatments have addressed this distressing experience. This paper describes a preliminary evaluation of an experiential technique, imagery rescripting (ImRs), to address survivor guilt.

Survivor guilt

There have been few empirical investigations of survivor guilt in contemporary research. Survivor guilt was first documented in the literature on Holocaust concentration camp survivors (Carmelly, 1975; Jaffe, 1970; Niederland, 1968, 1981), survivors of the Hiroshima bombing (Lifton, 1976) and Vietnam War veterans (Glover, 1984). It has been linked to greater PTSD severity in Vietnam War veterans (Henning & Frueh, 1997), Nigerian army veterans (Okulate, & Jones, 2006), and survivors of disasters (Hull, Alexander, & Klein, 2002; Joseph, Hodgkinson, Yule, & Williams, 1993). Survivor guilt has been shown to be common in veterans who attempt suicide (Hendin & Haas, 1991) and is associated with increased risk of suicide after military combat (Hyer, McCranie, Woods, & Boudewyns, 1990). In addition, it has been observed clinically that survivor guilt can be entrenched and resistant to change (Hyer et al., 1990; Khouzam & Kissmeyer, 1997; Niederland, 1981). A recent study of survivor guilt among a UK clinic sample of PTSD sufferers (Murray, 2018) revealed that over 90% of those who had survived events in which others died reported guilt about surviving, often at severe levels.

There is currently no agreed definition or clinical conceptualisation of survivor guilt (Tangney, & Fischer, 1995). Niederland (1968) observed that the source of survivors' distress was often decisions and actions that had been taken during the traumatic event, but sometimes arose from survival itself. Matsakis (1999) suggested distinguishing two types of survivor guilt: *content guilt*, which is closely linked to how events played out before and during trauma, and *existential guilt*, which relates specifically to the outcome of having stayed alive and being the perceived beneficiary of a disparity of suffering. People with content guilt may ruminate about personal actions or inactions surrounding the trauma and how deaths could have been prevented. In contrast, people with existential guilt may become preoccupied with existential aspects of why they were spared and experience a sense of disentitlement to survival (Matsakis, 1999).

Trauma-related guilt has typically been conceptualised as self-conscious distress that stems from irrational beliefs that one has acted wrongfully and caused harm (Ehlers & Clark, 2000; Kubany & Manke, 1995; Lee, Scragg, & Turner, 2001). Content survivor guilt underpinned by negative attributions about personal conduct can be understood according to such cognitive guilt models, which lend themselves to the straightforward extension of standard cognitive-behavioural therapeutic (CBT) approaches. However, it is less clear how applicable these models are to existential survivor guilt, which is not linked to regretted action.

Contemporary psychological PTSD treatments emphasise the importance of actively targeting the full range of individual emotional reactions to trauma (Lee et al., 2001). Given its prevalence and associations with PTSD severity and suicide, there is a need for research that explores treatment options for survivor guilt. Imagery rescripting (ImRs) is a transdiagnostic technique in which there is a growing interest, particularly for addressing persistent guilt feelings after trauma.

Imagery rescripting

ImRs seeks to reduce distress through manipulation of mental imagery (Long & Quevillon, 2009). When used to treat PTSD, traumatic memories are usually the target for rescripting. Clients are encouraged to visualise and describe the memory in detail, including their surroundings, associated sensory experiences, and thoughts and feelings activated by the memory (Rusch, Grunert, Mendelsohn, & Smucker, 2000), and are then guided to introduce changes in their imagination.

ImRs has a good evidence base as a PTSD treatment technique (Morina, Lancee, & Arntz, 2017). Some studies (Arntz, 2012) have indicated that it may be more effective than exposure techniques for clients who experience intense non-fear emotions, such as guilt, although more recent research evidence has contradicted this (Langkaas et al., 2017). ImRs may be an effective alternative for individuals who have not responded fully to other interventions, such as imaginal exposure. For example, Grunert, Weis, Smucker and Christianson (2007) reported a 78% recovery rate after one to three sessions of ImRS in a PTSD sample experiencing intense feelings of guilt, shame or anger, who had not responded to a previous imaginal exposure intervention. Arntz, Tiesema and Kindt (2007) demonstrated the advantage of adding ImRs to exposure among 67 clients with various trauma backgrounds. ImRs did not produce additional symptomatic benefits but significantly reduced drop-out rate and improved feelings of guilt and shame.

There is currently no evidence base concerning the use of psychological therapy to address survivor guilt specifically. However, imagery interventions form an integral part of recently developed treatments for similar problems, such as adaptive disclosure therapy for moral injury (Litz, Lebowitz, Gray, & Nash, 2017), cognitive therapy for persistent complex bereavement disorder (Duffy, & Wild, 2017) and compassion-focused therapy for shame-based

trauma (Lee, 2009), suggesting that similar approaches may be appropriate to address survivor guilt.

The active ingredients of ImRs have not yet been identified (Arntz, 2012), and many studies have combined it with other techniques, making it difficult to ascertain its specific impact or to elucidate the processes that underpin it. One focus of debate has been whether ImRs works similarly to exposure techniques (i.e., through habituation and extinction) or via a semantic route similar to verbal cognitive restructuring (Long & Quevillon, 2009). Arntz (2012) suggested that future research should use dismantling designs to advance understanding of the stand-alone effect of ImRs and the processes that predict effective ImRs. A few studies have deployed such methods.

Wild, Hackmann and Clark (2008) used a within-subjects design to evaluate ImRs as a brief intervention for social anxiety, investigating the extent to which ImRs produced effects beyond those of imagery elaboration. Eleven participants were offered two imagery sessions before or during standard treatment. The control session focused on attending to and exploring imagery in a non-directive manner; the experimental session used ImRs and cognitive restructuring to update and give context to imagery. Visual Analogue Scales (VASs) were used to capture within-session changes, and outcome measures were used to evaluate change in the weeks following sessions. Significant improvements that could be attributed specifically to the experimental session were observed on all measures (Wild et al., 2008).

The Wild et al. study design provides a basis for investigating ImRs separately from exposure techniques. However, Wild et al. (2008) combined ImRs with verbal cognitive restructuring, which precluded evaluation of the separate effect of ImRs. Nilsson, Lundh and Viborg (2012) used a randomised between-subjects design to demonstrate that ImRs can be effective for people with social anxiety in the absence of explicit verbal restructuring. These results suggest either that purely experiential imagery-based ImRs is capable of producing

cognitive shifts like cognitive restructuring or that ImRs operates through different processes. These dismantling designs are yet to be used in research on ImRs for PTSD.

The present study

The present study is a proof-of-concept investigation of treatment of survivor guilt using ImRs. The survivor guilt intervention was evaluated as an additional discrete treatment component which was delivered in the course of standard psychological treatment for PTSD (Trauma-Focused CBT, Narrative Exposure Therapy or Eye-Movement Desensitisation and Reprocessing Therapy). The study used a two-session design with five measurement points similar to that reported by Wild et al. (2008). However, explicit verbal restructuring was not included to enable evaluation of ImRs as a purely experiential imagery-based technique.

It was hypothesised that ratings of cognitive and emotional components of survivor guilt and imagery distress would reduce significantly following rescripting sessions but not at other time points. It was also hypothesized that weekly measures of survivor guilt, mental imagery, PTSD symptoms and depression symptoms would reduce significantly the week following the rescripting session.

Method

Participants

The sample consisted of nine men and five women who were currently undergoing trauma-focused treatment, age M=48.50, SD=7.04, range=36-59. The sample was ethnically diverse; only 35.7% of the sample (n=5) were of White British origin. Participants had experienced a wide range of traumas including assaults, traffic accidents, armed conflict, torture, genocide, military combat and guerrilla warfare. Eleven participants (78.6%) had experienced interpersonal violence during trauma, and 12 participants (85.7%) had experienced repeated and/or multiple traumas. The average time since trauma was 21 years (M=21.25,

SD=10.22, range=5-35). Participants had completed between 20-100 sessions (M=49.00, SD=25.68) of trauma-focused therapy before the survivor guilt intervention.

Participants were recruited from two specialist PTSD treatment services. Clients who had experienced a traumatic event that involved the death of one or more people and reported feelings of survivor guilt were eligible to take part (22 of 32 clients that were approached for the study). Clients with active suicidal intent, insufficient English-language ability to complete the measures and for whom participation in the study was not considered in their best interest (e.g., participation would lead to substantial disruption to the treatment plan) were excluded (six clients). Two eligible clients declined participation. One participant dropped out after the elaboration session. Thirteen particpants completed both sessions of the survivor guilt interventions and the research measures (including the follow-up time point). This was considered an adequate sample, given a power analysis based on the findings of Wild et al. (2008) indicated that a sample of 11 participants was sufficient to detect an effect at 80% power.

Imagery interview

An imagery interview was carried out before the first imagery session, following a similar process to Wild et al. (2008). The aim of the interview was to elicit imagery that was emotionally linked to survivor guilt and to identify the personal meaning of this imagery ('encapsulated belief'). Participants were given a brief explanation of mental imagery. They were asked to focus on their feelings of survivor guilt and notice any images that went through their mind. Optional prompts were offered when necessary to identify relevant imagery. The most upsetting image, or the image that was most closely connected to survivor guilt, was selected by the participant. Participants were then asked about the meaning of the survivor guilt image, with therapists' prompts used as needed to help participants identify the worst thing

about the image and/or what it said about them, others, the world or their future (Wild et al., 2008).

Measures

Based on the design used by Wild et al. (2008), weekly measures and single-item VASs were administered before each session and one week after the research intervention (follow-up). The single-item scales were also administered after each session.

Process measures. Three single-item VASs of process variables (adapted from Wild et al., 2008) were selected as the primary outcome measures. VAS-ID measured distress associated with the survivor guilt imagery; participants were asked to dwell on their image for a few moments and rate the distress that the imagery caused them *right now* (range 0-100%). The encapsulated belief item (VAS-EB) consisted of a statement that summarised the meaning of the participant's survivor guilt imagery derived from the imagery interview. VAS-SG measured participants' feelings of survivor guilt. Participants were asked to rate their encapsulated belief and how strong their feelings of survivor guilt were *right now*.

Weekly symptom measures. Post-traumatic stress symptoms were measured using Part 3 of the Post-traumatic Diagnostic Scale (PDS; Foa, 1995), which measures 17 PTSD symptoms across three clusters (DSM-IV diagnostic criteria; American Psychiatric Association, 1994). Participants who experienced PTSD symptoms relating to multiple traumatic events were instructed to rate the combined impact of these. The decision to administer the PDS as an overall PTSD symptoms measures (rather than to a specific trauma) was made because it was unclear if survivor guilt would relate to a specific event, multiple events, or an accumulated effect. Depression was measured using the Patient Health Questionnaire-9 (PHQ-9; Kroenke, Spitzer, & Williams, 2001). The time frames of both questionnaires were changed to measure symptoms over the past week to capture potential changes following each session.

Weekly survivor guilt was measured using two relevant items from the Clinician Administered PTSD Scale (Blake et al., 1995). The items were presented along with a written operational definition of survivor guilt. Participants rated frequency and intensity over the past week, and ratings were combined into a total score. Imagery over the past week was measured using two VASs found to be reliable in the Wild et al. (2008) study: frequency of the imagery and associated distress. These were also combined into a single score.

Guilt and imagery codes. Participants' survivor guilt was coded into existential and content sub-types using audio transcripts of the imagery interview. Most participants described both existential and content guilt. Two independent raters showed perfect agreement when coding primary guilt type. One of the raters was completely blind to the objectives of the research project and other coded variables. Survivor guilt imagery was originally coded by participants as trauma memory, non-trauma memory or constructed imagery. These categories proved problematic because some participants reported imagery that fitted multiple codes (e.g., trauma memory with constructed components). Furthermore, detailed inspection of audio transcripts revealed that all imagery that was classified as 'non-trauma memory' were memories of the last contact with the deceased. Several participants noted that this was the last opportunity that they had to intervene and prevent death. The survivor guilt imagery was recoded by one of the researchers and instead categorized according to whether it contained the following elements: (1) trauma memory, (2) memory of the last contact with the deceased, and (3) constructed imagery. Constructed imagery described imagery that was not a memory of an event; it included real events that the participant was told about but did not witness directly (e.g., friend's grieving family), and images that were imagined by the participant (e.g., bones in the ground).

Imagery rescripting intervention

The evaluated intervention consisted of two consecutive therapy sessions (45-60 minutes) that were offered as a treatment component supplementing regular treatment (based on Wild et al., 2008). The research intervention was embedded within participant's standard treatment at a time that fitted with the natural flow of therapy, in line with how survivor guilt would be addressed in clinical practice. The five clinicians who delivered the imagery rescripting intervention had extensive experience of trauma-focused psychological treatment.

The *elaboration session* was conducted to establish a baseline effect of exploring and elaborating the imagery (but not changing it). Therapists supported participants to describe the content and context of survivor guilt imagery without actively changing the imagery or its meaning. Participants were asked to bring their imagery to mind and give a detailed narrative account. They were prompted to describe sensory details, the emotive context of the imagery, and what the imagery meant to them.

The aim of the *rescripting session* was to modify the survivor guilt imagery to make it less distressing. The flexible protocol (based on Brewin et al., 2009) enabled participants to change their imagery in whatever way they felt would be helpful. Participants were encouraged to choose their rescript, but therapists provided suggestions when necessary. Participants were asked to bring their imagery to mind and were guided by the therapists to change the survivor guilt imagery using the agreed rescript. All changes were introduced through imagination, and participants were encouraged to focus on sensory and emotional aspects of the imagery. Five of the thirteen participants imagined the deceased in the afterlife, three modified survivor guilt imagery by repairing distressing aspects of the imagery (e.g., reduce amount of blood) and moving the scene forward to a less distressing moment (e.g., peaceful funeral), and two participants prevented death and imagined the deceased as still being alive. Two participants chose to replace the survivor guilt imagery with a positive memory of the deceased when they

were alive. One participant tried to leave the scene in the survivor guilt imagery but was unable to find a way out and had to discontinue the rescripting process.

Procedure

Clients who met the study criteria were approached by their treating clinician and provided with the information sheet. Clients and therapists collaboratively agreed the best time to complete the study. Therapists attended a training event and were given a study manual to maximise protocol adherence. The client's existing therapist carried out the imagery interview, elaboration session, imagery rescripting session, and administered the measures. Audio recordings were used to check for protocol violations, in particular the use of verbal cognitive restructuring during the elaboration or rescripting sessions. No major violations were detected.

Participants completed the PHQ-9, PDS, and weekly survivor guilt items at the start of the elaboration session. The imagery interview was then conducted. Participants completed the items on weekly mental imagery and rated the single-item VASs (pre-elaboration) and then the elaboration session was delivered as previously described. Participants rated the single-item VASs again at the end of the session. This procedure (except for the imagery interview) was repeated during the rescripting session: (1) administration of weekly questionnaires and single-item VASs, (2) delivery of rescripting session, (3) rating single-item VASs. All outcome measures were administered again before re-starting standard sessions (one week follow-up)

Results

Analyses carried out using parametric statistics and non-parametric counterparts were equivalent, and so only the parametric analysis results are reported. Information from one participant who dropped out after the elaboration sessions was excluded from analysis of response to rescripting.

Outcome on symptom and process variables

Mean scores on weekly symptom measures are shown in Table 1. A repeated-measures (Scale x Time) ANOVA was used to evaluate change in the PDS subscales (re-experiencing, avoidance, and hyperarousal) over time. Neither the Scale x Time interaction or the main effect for time was significant, $F(4,48) = 2.09$, $p = .10$ and $F(2,24) = .56$, $p = .58$, respectively. Three one-way repeated-measures ANOVAs of weekly depression, mental imagery, and survivor guilt also did not show a main effect for time: $F(1,12) = .56$, $p = .58$, $F(1,12) = .17$, $p = .78$, and $F(1,12) = .89$, $p = .40$, respectively. These findings contradict the prediction that the intervention would lead to changes on global symptom measures.

Mean scores on pre and post session survivor guilt-specific VASs are shown in Table 2. A two-way repeated-measures ANOVA (VAS x Time) did not produce a significant interaction and so the VASs were pooled to produce an average score which would have greater reliability. The profile of pooled VAS over time is shown in Figure 1. The one-way repeated measure ANOVA for the pooled VAS score showed a significant main effect for time, $F(4,48) = 8.36$, $p = .001$ (following Greenhouse-Geisser adjustment). Paired contrasts revealed that the only significant difference was between pre and post rescripting session scores, $F(1,12 = 11.18)$, $p = .006$. Analyses of the individual VASs showed the same pattern of results. The pooled VAS rating was used to identify participants who experienced reliable change. The Reliable Change Index (RCI; Jacobson & Truax, 1991) classified seven participants as responders and six as non-responders (see Figure 2).

Survivor guilt types – imagery content and responding

The relationships between survivor guilt types and the content of survivor guilt imagery was explored. Half the full sample experienced primary content survivor guilt and the other half primary existential survivor guilt. Six of seven participants with content survivor guilt most commonly reported imagery that included the last contact with the deceased / last opportunity to intervene and prevent death, whereas only one of seven participants classified

with existential survivor guilt focused on last contact with the deceased. The association of content survivor guilt and last contact with the deceased was significant (Fisher's exact test p = .029). Four participants reported constructed imagery; these participants all experienced primary existential survivor guilt. The association of existential survivor guilt and constructed imagery was not significant but showed a trend (Fisher's exact test p = .070). Trauma memory imagery was equally common in content and existential survivor guilt groups (three participants each).

The relationship between survivor guilt type and responder status was also explored. Five of the seven responders were classified as having existential type survivor guilt, whereas five of six non-responders were classified as having content type survivor guilt. The difference in proportions showed a statistical trend, Fisher's exact test p = .078.

Finally, the type of original and rescripted imagery across responder and non-responder groups was considered using visual inspection of patterns, as cell counts were too small to allow statistical analysis. Responders and non-responders did not appear to differ in whether the original survivor guilt imagery related to trauma memories, memories of the last contact with the deceased or constructed memories. However, there were indications that the choice of how the imagery was modified may influence the strength of the response to the intervention. Four out of five responders chose afterlife imagery, with the fifth person choosing to repair and move the scene forward. Non-responders chose a range of rescripted imagery (afterlife n = 1; moving the scene forward n = 1; unable to complete n= 1; undoing the deaths n = 2; life memory of the deceased n = 2).

Discussion

The present study was a proof-of-concept trial of ImRs for survivor guilt in a PTSD clinic sample. The survivor guilt intervention was evaluated as a discrete two-session

component within standard treatment for PTSD. Idiographic measures of the cognitive and emotional components of survivor guilt, and distress associated with survivor guilt imagery, reduced significantly during the rescripting session. These changes were not observed in the preceding session in which imagery was elaborated but not modified, and improvements seemed to persist at the next session. Furthermore, these cognitive and emotional changes were gained in the absence of verbal cognitive restructuring. These findings point to the conclusions that (1) ImRs produces emotional changes that are not solely attributable to habituation, and (2) it is possible to shift emotions by changing relevant perceptual imagery, bypassing the verbal-cognitive route traditionally used in cognitive therapy. A possible mechanism for this effect is that experiential manipulation of mental imagery mimics real life experience by activating the same neural structures that are responsible for processing perceptual input (Epstein, 1994; Holmes & Matthews, 2010). The findings potentially have implications for clinicians addressing challenging emotions such as survivor guilt, with clients who struggle to engage with, or who have not responded to, traditional techniques.

Although participants improved overall on idiographic process measures, they did not experience significant changes on weekly measures of survivor guilt, imagery distress, depression, or PTSD symptoms. This may indicate that the effect of the imagery rescripting is only transitory, or is highly specific to the image being targeted. Previous studies that have used longer follow-up periods indicate that clients continue to improve during the weeks after ImRs even if no further sessions are offered (Grunert et al., 2007). It is possible that participants continued to experience improvements beyond the week following rescripting, but this was not measured in the present study, due to the short follow-up period required to minimize the impact on the rest of their treatment. The intervention was brief, and designed to target a single image. Given that the sample consisted predominantly of multiply traumatised individuals who experienced a range of difficulties that related to various

traumatic events, it may be that the two-session survivor guilt intervention was insufficient to reduce overall PTSD, depression and survivor guilt symptoms, even though it seemed to impact positively on the target image and associated beliefs and feelings. Future studies investigating treatments for survivor guilt should evaluate symptoms relating specifically to the survivor guilt event to avoid missing possible treatment effects on broader PTSD symptomatology.

Differences between existential and content survivor guilt sub-types were observed in the type of distressing imagery described by participants and the likelihood of achieving reached reliable change following ImRs. These differences support the idea that existential and content survivor guilt are distinct phenomena underpinned by different processes. Primary content survivor guilt was significantly associated with reported imagery of participants' memories of their last contact with the deceased / last opportunity to intervene and prevent deaths. This finding suggests that content survivor guilt is characterized by regrets about action (or inaction) and is linked to distressing imagery of the memory related to such regrets. This interpretation is consistent with anecdotal comments made by participants indicating that the emotional significance of these memories originated from identifying it as their last chance to save the deceased. This points to a formulation of content survivor guilt as being driven by rumination regarding peri-traumatic actions and construction of counterfactual scenarios of final moments.

Content survivor guilt did not appear to respond well to imagery rescripting, with only one ImRs responder found in this group. Content survivor guilt may be conceptualised using cognitive guilt models and most effectively treated using verbal-cognitive techniques that seek to address errors of foreseeability and preventability and hindsight bias (Kubany & Manke, 1995). Participants who experienced existential survivor guilt reported constructed imagery and/or a trauma memory. A commonality of these participants' imagery was the

depiction of the finality of death (e.g., bodies or remains of persons that are unmistakably dead, or others grieving), potentially highlighting the discrepancy between the deceased and the survivor. This observation fits with Matsakis' (1999) description of existential survivor guilt but not traditionally conceptualised guilt (Kubany & Manke, 1995). Unlike content survivor guilt, existential survivor guilt may not easily lend itself to amelioration by verbal cognitive techniques but appeared to respond well to an imagery based approach (five of six responders in this group). The differences between content and existential survivor guilt noted here are clinically interesting but need to be replicated in larger studies before a theoretical framework is developed.

Similarly, although numbers were too small to allow a definitive analysis, there were indications that the type of rescripting may relate to outcome. None of the participants who chose a rescript which avoided the death taking place (such as using a life memory of the individual, or undoing the death) had a positive response to rescripting. Responders tended to choose rescripts including the afterlife, or moving the scene forward. This finding requires further investigation. It may be that, when ImRs is being used to address bereavement reactions, avoiding the fact that the death occurred contributes to the lack of acceptance of the loss, which some researchers have conceptualised as a central feature of complicated grief reactions (e.g. Boelen, Van Den Hout, Van Den Bout, 2006).

Efforts were devoted to ensuring that the research intervention had ecological and face validity to maximise the generalisability of the findings. The results are representative of a 'real world' view of ImRs as applied to addressing survivor guilt. However, the study design and small sample limits the interpretations that can be drawn from the results. The study aimed to recruit a sample that was representative of the clinical population seen in specialist PTSD services. The participants were highly heterogeneous. Most participants had been exposed to severe, multiple traumas and all participants had complex presentations of PTSD.

Participants had received a large number of specialist trauma-focused therapy sessions prior to participation.. The order of sessions was fixed, which may have produced sequencing effects. Observed improvements could be attributed to the time period during the rescripting session but may not be due to ImRs. For example, participants may have experienced a delayed effect from the elaboration session. The study was designed as a proof-of-concept, but requires replication in a larger, controlled study.

The present study provides preliminary evidence that ImRs is a suitable technique for treating existential survivor guilt after trauma. Importantly, it cannot be assumed that simply elaborating distressing imagery can improve survivor guilt. However, although an overall improvement in the idiographic measures was found, some participants showed minimal or no improvement. This, coupled with the lack of improvement on the weekly measures, suggests that further work is required to develop an effective treatment for survivor guilt. It may be that a single ImRs session is not sufficient for most clients to experience clinically meaningful change, and a longer intervention is required. The possibility that those who experience existential survivor guilt may be most likely to benefit from ImRs but those with content survivor guilt would benefit from the addition of verbal cognitive techniques are potentially informative research avenues. Future studies should also explore the longer-term impact of ImRs and the potential benefits of between-session rehearsal on treatment effects. It is hoped that this study acts as a catalyst for continued research in these areas.

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Table 1. Mean (Standard Deviation) of weekly symptom scales.

Measure	Pre S1	Pre S2	S3
Weekly Survivor Guilt	5.85 (2.23)	6.08 (1.50)	5.77 (1.42)
PDS Rexperiencing	10.38 (3.71)	11.00 (2.45)	10.80 (3.45)
PDS Avoidance	14.46 (4.25)	14.76 (4.09)	13.31 (4.23)
PDS Hypervigilance	11.85 (3.02)	11.15 (2.58)	11.38 (2.29)
PHQ-9	18.64 (5.21)	18.84 (5.80)	18.12 (5.69)
Weekly Imagery	127.54 (54.19)	142.85 (45.52)	126.54 (59.71)

Note. N = 13 completers. S1 = Elaboration session; S2 = Rescripting session; S3 = Follow up.

Table 2. Mean (SD) of VAS ratings across time points and results of paired contrasts.

Item	Pre S1	Post S1	Pre S2	Post S2	S3
VAS-EB	89.2 (15.3)	82.7 (18.9)	78.1 (23.2)	66.0 (26.9)*	67.5 (23.7)
VAS-GF	89.2 (19.6)	86.77 (20.6)	80.3 (19.8)	66.4 (32.3)*	66.9 (24.5)
VAS-ID	86.5 (19.2)	83.08 (21.9)	83.1 (15.6)	67.7 (26.7)*	63.0 (32.4)
Pooled VAS	88.3 (16.0)	84.1 (18.4)	80.5 (18.8)	66.7 (27.4)*	65.8 (25.5)

Note. N = 13 completers. S1 = Elaboration session; S2 = Rescripting session; S3 = Follow up. VAS-EB = Encapsulated Belief; VAS-SG = Guilt Feeling; VAS-ID = Imagery Distress.

*Mean is significantly different to preceding mean.

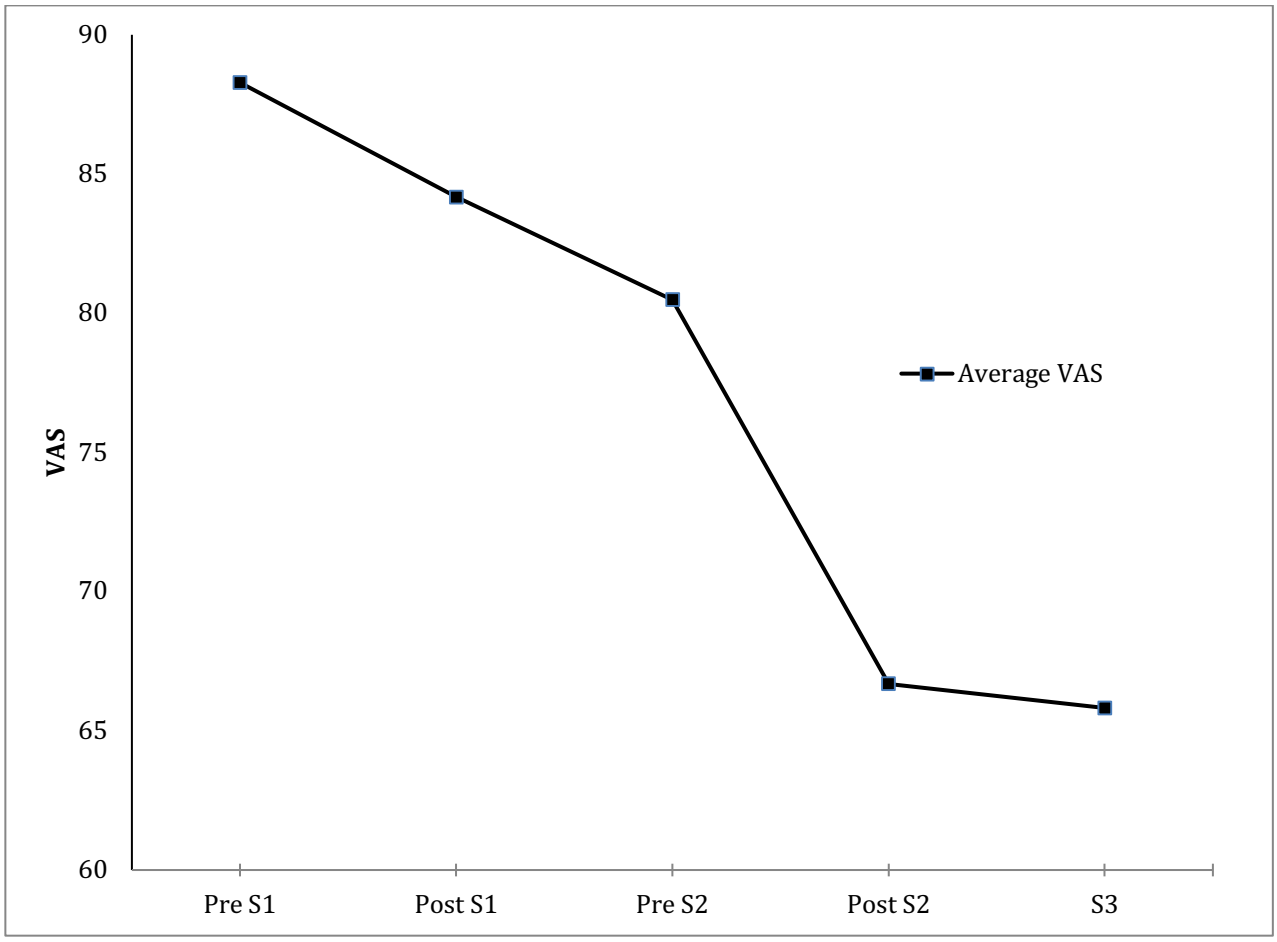

Figure 1. Change in mean pooled survivor guilt VASs over five measurement points.

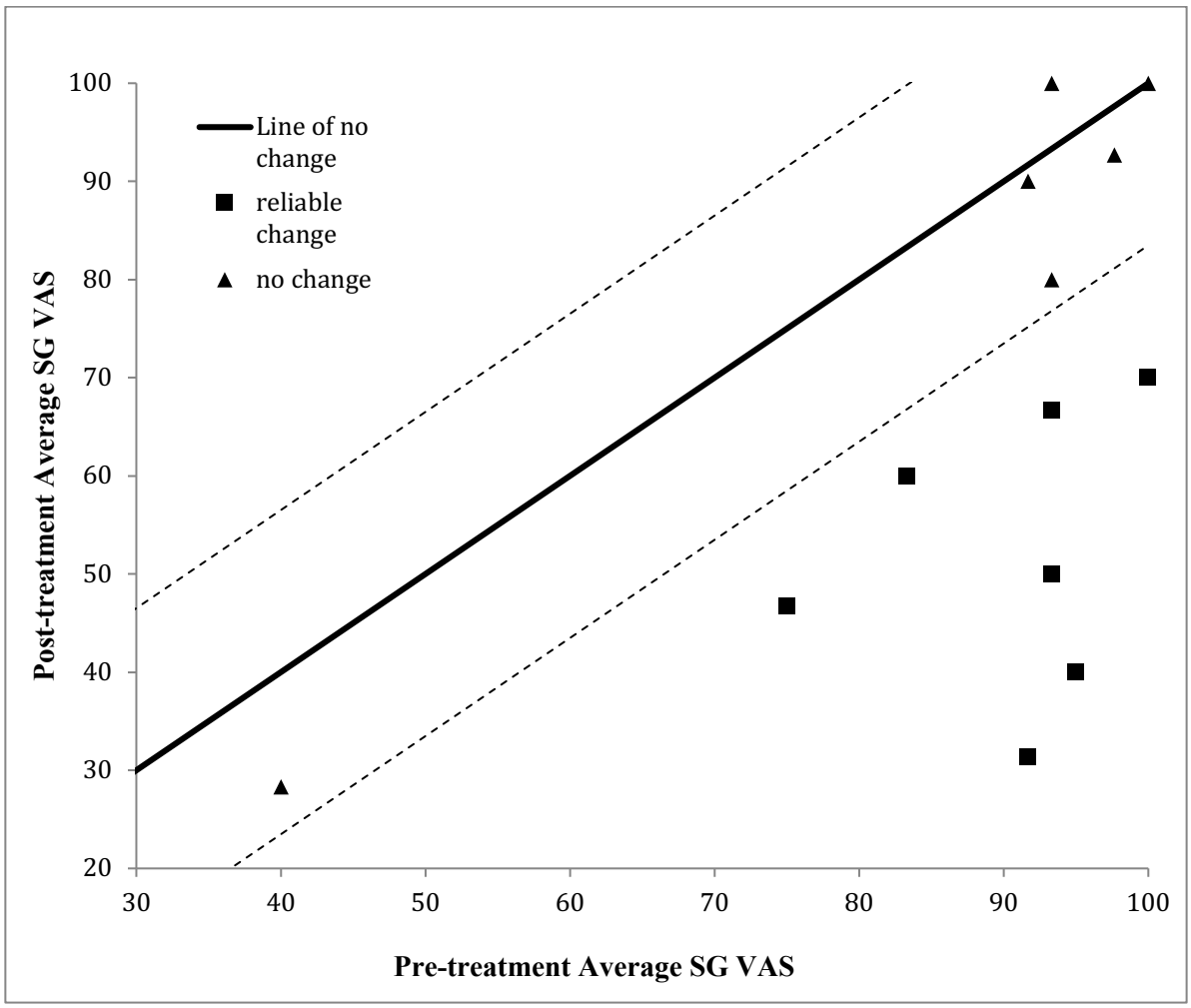

Figure 2. Reliable change index as defined by change in pooled survivor guilt VASs from pre-treatment to post-treatment (averaged post-rescripting session and follow-up scores).