

Imagery Re-Scripting for PTSD: Session Content and its Relation to Symptom Improvement

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Abstract

Background and objectives: Imagery re-scripting (ImRs) is an experiential technique for targeting intrusive images in post-traumatic stress disorder (PTSD; Arntz, 2012).

However, it is currently unclear how ImRs works. The aims of the present study were 1) to develop a coding scheme that captured important factors of ImRs session, and 2) to apply this coding scheme prospectively to investigate whether factors relate to treatment outcome. *Method:* The study used thematic analysis (Braun & Clarke, 2006) to develop an ImRs coding scheme that captured salient factors occurring in ImRs sessions. Next, a single case experimental design (SCED) investigated how session content captured by the coding scheme related to changes in weekly outcome measures in six participants with PTSD.

Results: Participants who were motivated to engage in ImRs, activate an image that felt believable, activate original and new emotions and cognitions during ImRs, change their attitude towards the outcome were more likely to experience symptom relief. *Limitations:* as a SCED, the study lacks power to make definitive conclusions about ImRs efficacy as applied to the general population of individuals with PTSD. *Conclusions:* A number of factors appear to influence the efficacy of ImRs. However, future research is required to determine the relative importance of these factors in order to maximise ImRs efficacy as a treatment for PTSD.

Keywords: Imagery re-scripting, post-traumatic stress disorder, single case experimental design

1. Introduction

Post-traumatic stress disorder (PTSD) is characterised by the presence of intrusive images or “contents of consciousness that possess sensory qualities” (Hackmann, 1998, p. 301). Imagery re-scripting (ImRs) is an experiential technique that targets intrusive images by encouraging individuals to vividly imagine the traumatic event but introduce a changed ending (Smucker, 2004). In doing so, ImRs combines imagery, verbal processing and schema modification in an attempt to reduce intrusions, challenge maladaptive beliefs and promote adaptive coping strategies (Rusch, Grunert, Mendelsohn, & Smucker, 2000). Unlike in traditional trauma-focused therapies like trauma-focused cognitive behavioural therapy (TF-CBT), active verbal challenging of cognitions is rare (Brewin et al., 2009). Although existing studies imply that ImRs is a viable addition to standard treatment packages, little is known about how and why ImRs is effective (for a review see Arntz, 2012). The present study aims to devise a coding scheme that captures features of ImRs sessions, and use this coding scheme to investigate what makes ImRs an effective treatment for intrusive images in PTSD.

Traditional TF-CBT focuses on exposure to traumatic memories and updating related maladaptive cognitions (National Collaborating Centre for Mental Health (NCCMH), 2005). Theories emphasise the importance of exposure and corrective learning to reduce distress associated with cognitions (e.g., Brewin, Dalgleish, & Joseph, 1996; Brewin, Gregory, Lipton, & Burgess, 2010; Ehlers & Clark, 2000; Foa & Kozak, 1986). The use of ImRs seems paradoxical as an intervention for PTSD. If activation of the original memory and exposure to that memory is important for symptom reduction, how can imagining an alternative ending lead to a reduction of intrusive memories and their associated distress? Currently, there is no definitive answer to this question, although a number of hypotheses have been suggested.

The retrieval competition account suggests that ImRs creates an alternative, highly accessible memory that is less toxic than the original representation of traumatic events and can compete with the original intrusive memory (Brewin, 2006). Rather than changing the original memory, the ImRs image competes for retrieval (Brewin, 2006). Provided that the new image is more accessible in response to retrieval cues, activation of the original traumatic memory will be inhibited (Brewin et al., 2009; Frets, Kevenaar, & van der Heiden, 2014; Wheatley et al., 2007). However, exposure to positive, yet unrelated imagery has less impact on distress than does ImRs (Hagenaars & Arntz, 2012), implying the new image must possess certain characteristics if it is to compete effectively.

The more an image is linked with an emotion, the more easily the new image is remembered (Bywaters, Andrade, & Turpin, 2004; Rubin & Siegler, 2004). ImRs has been found to trigger emotions associated with the original intrusion to a greater extent than verbal processing (Arntz, 2012; Brewin et al., 2009). Current evidence suggests that ImRs image activation is facilitated through the activation of emotional responses, reduction of emotional suppression, monitoring and control and memory contextualisation (Richards & Gross, 2000), which then allows the new image to compete with the original. The introduction of new emotions may directly inhibit the negative arousal associated with the original intrusion (Rusch et al., 2000; Wolpe, 1958, 1995) and facilitate access to positive cognitions. In doing so, ImRs might create a fundamental shift in thinking regarding the original event and subsequent intrusions (Long & Quevillon, 2009), further limiting the associated distress (Ehlers & Clark, 2000).

In summary, theory suggests that ImRs facilitates activation of fragmented trauma memories, which, when combined with new emotions and a resultant shift in beliefs about the trauma, facilitates the development of a fully elaborated memory that is non-threatening, feels non-pathological and can be controlled and manipulated at will. However,

no study to our knowledge has systematically reviewed what happens during ImRs and how this might relate to outcome. This study aims to devise a coding scheme which captures key features of ImRs sessions (Phase 1) and to prospectively apply this coding scheme to investigate which, if any, characteristics predict symptom improvement in individuals with PTSD (Phase 2).

2. Method

2.1. Participants

2.1.1. Phase 1. Nine participants were included in Phase 1. Three participants had a primary diagnosis of PTSD and received ImRs as part of their treatment at an outpatient trauma service. The remaining six had a primary diagnosis of depression and received ImRs as part of a study investigating the impact of ImRs on intrusive images in depression. Five were male and four were female. All were over the age of 18, spoke English and experienced intrusive images. No participant had psychotic disorder, organic brain disease, high risk of self-harm or suicide, was abusing substances or required an interpreter. ImRs as defined by Arntz & Weertman (1999), Hackmann (1998) and Smucker and Dancu (2005) was conducted by three experienced clinical psychologists.

2.1.2. Phase 2. Following recommendations by Shadish and Sullivan (2011), Shadish, Hedges and Pustejovsky (2014) and Arntz, Sofi and van Breukelen (2013), Phase 2 aimed to recruit ten participants who experienced intrusive images and were willing to undergo ImRs as part of their standard treatment. Phase 1 exclusion criteria were employed. Only eight participants were approached by their treating clinician. Of these, one declined to take part and one experienced symptom improvement so had no need for ImRs. The remaining six participants (two females, four males) were participants undergoing TF-CBT at a London

outpatient ($n=5$) or inpatient ($n=1$) service in London. Part of therapy involved at least one session of ImRs as defined in Phase 1. Participants were Asian British ($n=3$) White or White British ($n=2$) and Black African ($n=1$). Mean age was 43 ($SD=18$, range=20-65 years). The following co-morbid diagnoses were identified; depression ($n=3$), depersonalisation disorder ($n=1$), anger ($n=1$) and complicated grief ($n=1$). All bar one participant had experienced multiple traumatic events. Participants were not compensated for taking part in the study. Demographic information has been altered here to preserve participant anonymity.

2.2. Design

2.2.1. Phase 1. Phase 1 of the study used qualitative data from a selection of pre-existing session recordings. These recordings were used by two researchers (CS and EP) to create a coding scheme that quantified the subjective or qualitative contents of verbal utterances that could then form the basis of the method for Phase 2.

2.2.2. Phase 2. A SCED was employed to apply the Phase 1 coding scheme to Phase 2 participants' ImRs treatment sessions. Where possible, an ABA design with three-week baseline and one-week follow-up was used. An AB design was used when follow-up scores were not obtainable.

2.3. Measures

2.3.1. Phase 1. No measures were required for Phase 1 of the study.

2.3.2. Phase 2. The Impact of Event scale (IES; Horowitz, Wilner, & Alvarez, 1979) contains 15 questions over two subscales that monitor provides a reliable, stable and valid measure of the distress associated with an event (Horowitz et al., 1979; Sundin & Horowitz,

2002). The Intrusion subscale measures memory intrusiveness and loss of voluntary control over the regulation of thoughts. The Avoidance subscale measures whether memories are consciously suppressed. Each item is scored in relation to the previous week using a four point frequency scale. Where possible, the IES was completed weekly on three occasions prior to ImRs. It was administered immediately before each ImRs session and one week post-ImRs.

2.4. Procedure

2.4.1. Phase 1. The coding scheme was developed using 33 ImRs session recordings from nine participants. Following Braun and Clarke's (2006) thematic analysis guidelines, two researchers (CS & EP) familiarised themselves with the data, identified meaningful units of text and organised data into analytic themes (Tuckett, 2005). Provisional themes were shown to experts in the field and their comments incorporated. The final coding scheme was re-applied to the recordings and final adjustments were made.

2.4.2. Phase 2. Consenting participants completed the IES each week, two weeks prior to starting ImRs unless clinician decided that ImRs was indicated before baseline scores could be obtained. All participants completed the IES each week immediately before ImRs and one week post- ImRs. All sessions were audio-recorded. One researcher (CS) transcribed and coded all sessions according to the Phase 1 coding scheme. A second researcher (EP) coded the first of each participant's sessions to assess percent agreement. Participants were debriefed following study completion in June 2014.

3. Results

3.1. Phase 1

The full coding scheme and accompanying scoring guide are available from the author. A summary of themes is provided in Table 1. Pre-imagery themes refer to the lead up to imagery work. Whole process themes refer to work with the original and re-scripted images. Re-living themes refer to work with the original memory. Re-scripting themes capture information following change in the image. Outcome themes relate to the result of the ImRs process. Percent agreement ranged from 76% to 87% ($\mu=82\%$). Further modifications were made to the scoring manual to enhance clarity.

3.2. Phase 2

The coding scheme was applied to 20 sessions collected from six participants. Each participant had between one and eight ImRs sessions. Only two participants had follow-up measures available. The remainder were still attending ImRs sessions at the end of the study. A summary of participant attendance can be seen in Figure 1. Reasons for not completing ImRs included feeling too distressed and needing support with other life events. The baseline phase refers to scores taken before ImRs begins. The intervention phase was defined as the time between the first and last ImRs session. The follow-up phase was any measure taken after the final ImRs session.

3.2.1. Participant 1. P1 was a 20 year old, single, unemployed Bangladeshi man who was seeking asylum in the UK. His sessions were conducted in English, although this was not his first language. P1 was referred to the outpatient service by a community mental health team (CMHT) one year previously, had been offered 14 sessions of TF-CBT over six months, and had attended eight. P1's intrusive images related to an event that happened

approximately eleven years prior when he was physically assaulted while held in domestic servitude. He received one ImRs session. An overview of his scores can be seen in Table 2. P1's IES scores are depicted in Figure 2.

P1 was motivated to use ImRs to seek revenge on his captor (*ImRs preparation* and *Attitude towards the re-script*). P1 brought to mind a vivid image (*Activation of the image*), accompanied by a coherent narrative (*Ability to stay with the image*) and *Activation of original internal processes*. P1 introduced change as his adult-self with the help of the therapist and two relatives (*Others in the image*) during the worst moment of the assault (*Departure from the original image*). By introducing change that felt real (*Believability*), P1 accessed new *internal processes during the re-script*. By seeking revenge on the perpetrator and standing up for his younger-self (*Definition of the outcome*), he identified feeling "good" and worth something (*Attitude towards the outcome*). P1's IES scores improved following this single ImRs session. However, with variable baseline scores and three week gaps between measures, it is difficult to assess whether changes were a direct result of the ImRs session.

3.2.2. Participant 2. P2 was a 49 year old single, employed woman from America. Her first language was English. P2 was referred to the outpatient service by a CMHT four years previously for support around memories of domestic violence that had taken place 18 years ago. She had been in treatment at the current service for three and a half years and had received 151 sessions of stabilisation, risk management and TF-CBT. P2 targeted two intrusive images in therapy. Image 1 involved the time immediately after the assault. Image 2 involved the assault itself. P2 received eight ImRs sessions over the course of ten weeks. An overview of P2's scores is presented in Table 3. P2's IES scores are depicted in Figure 3.

Initially, P2 was afraid of accessing the worst moments of her image, but became more confident (*Attitude towards the re-scripting process*). All P2's re-scripts were prepared before starting imagery work (*ImRs preparation*). Initially, P2 found it difficult to include any of the original image (*Departure from the original image*) or *Activate original internal processes*. Over time, she became more confident vividly imagining and describing the original image (*Activation of the image*) and connected to internal processes (*Activation of original internal processes*). However, the intensity was sometimes so strong that it interfered with her *Ability to stay with the image*. With support from *Others in the image*, P2 was able to stand up to her husband (*Definition of the outcome*) which felt believable (*Believability*). In doing so, she *Activated internal processes in the re-script* and felt safe and cared for (*Attitude towards the outcome*). P2's scores fluctuated over the course of treatment, but gradually improved. Improvement seemed most apparent when she accessed old and new internal processes through the introduction of believable change.

3.2.3. Participant 3. P3 was a 63 year old married, employed man from Japan. His first language was English. P3 was referred to the outpatient service by a CMHT three years prior following his daughter's suicide, which he witnessed. P3 had received six sessions of psychoeducation over two months. P3's intrusive image involved finding his daughter's body, and seeing her subsequently in the Chapel of Rest. An overview of P3's scores is presented in Table 4. P3's IES scores are depicted in Figure 4.

P3 was willing to engage with ImRs (*Attitude towards the re-scripting process*). All but one of P3's re-scripts were prepared before starting imagery work (*ImRs preparation*). P3 found it relatively easy to *Activate original internal processes*, bring to mind a vivid image described from the first person (*Activation of the image*) and stay with the image throughout (*Ability to follow the ImRs process*). P3 introduced change as his past-self (*Others in the*

image) part way through the traumatic image (*Departure from the original image*). He reported this change to be believable (*Believability*) and accompanied by new *internal processes during the re-script*. P3 was able to apologise to his daughter and experience warmth and compassion (*Definition of the outcome*). He reported a shift from wishing he could speak to his daughter, to feeling as if he could speak to her (*Attitude towards the outcome*). Following four ImRs sessions P3 experienced a decrease in IES scores. Scores decreased the more that P3 was able to connect to new internal processes

3.2.4. Participant 4. P4 was a 50 year old single, unemployed man from Uganda. His first language was English. P4 was referred to the outpatient service by a CMHT 15 months prior and had received 27 sessions of TF-CBT over 8 months. P4 received one ImRs sessions over the course of three weeks, targeting the memory of his initiation into the Ugandan army as a child soldier. An overview of P4's scores is presented in Table 5. P4's IES scores are depicted in Figure 5.

P4 spent two sessions preparing ImRs (*ImRs preparation*) and was motivated to try (*Attitude towards the re-scripting process*). P4 began the image in the trauma aftermath (*Departure from the original image*). While each scene of the image was accompanied by a coherent narrative, it was unclear how one scene led into the other (*Ability to follow the ImRs process*). P4 reported that while the original image was easy to visualise, the re-scripting section was less vivid (*Activation of the image*). As his current-self (*Others in the image*), P4 re-assured and comfort his past-self (*Definition of the outcome*). Although P4 felt "different" (*Activation of internal processes during the re-script*), he found the re-script hard to believe (*Believability*) and did not seem to have changed his *Attitude towards the outcome*. Following ImRs, P4 experienced no change in IES scores. P4's sessions took place around the anniversary of his trauma, which was covered by the media. It is unclear whether

lack of improvement was because of difficulties with ImRs, a lack of ImRs sessions or because of external reminders of the trauma.

3.2.5. Participant 5. P5 was a 43 year old single, unemployed woman from Italy. Her first language was Italian, but sessions were conducted in English. P5 was referred to the outpatient service by a psychologist four years prior following eight-years of domestic abuse. P5 had received 118 sessions over three years of stabilisation and TF-CBT. P5 received three ImRs sessions over the course of four weeks, targeting her memory of an assault by her husband. P5's scores are presented in Table 6. P5's IES scores are depicted in Figure 6.

It was unclear how P5 felt about ImRs (*Attitude towards the re-script process*). P5 found it easy to bring to mind the image in detail (*Activation of the image*) but the old and new parts of the image did not link together (*Ability to follow ImRs*). P5 introduced change part way through her image, before resuming with the original traumatic image (*Departure from the original image*). She brought in a "samurai woman" to assault her husband and "ice bears" to comfort her (*Others in the image*) but found it hard to *Activate internal processes during the re-script*). She did not find change believable and quickly became re-absorbed in the original image (*Believability*). *Activation of original internal processes* was so intense that she became too distressed and was unable to continue ImRs or experience a change in her *Attitude towards the outcome*. P5 experienced no relief from her symptoms over the course of ImRs.

3.2.6. Participant 6. P6 was a 29 year old, single, unemployed Asian-British man. His first language was English. P6 was referred to the inpatient anxiety unit by his GP three months prior as a result of workplace bullying. P6 had received 33 sessions of TF-CBT. P6 received three ImRs sessions over the course of six weeks, targeting his memory of the

abuse. An overview of P6's scores is presented in Table 7. P6's IES scores are depicted in Figure 7.

It was unclear how P6 felt towards ImRs (*Attitude towards the re-script process*). The intensity of *Activation of original internal processes* meant that P6 often requested to stop during the re-living section of the session and needed a great deal of therapist support to stay with the image (*Ability to follow the ImRs process*). All images were reported to be vivid (*Activation of the image*). P6 introduced change part way through the traumatic image (*Departure from the original image*) and used colleagues and a dragon to help bring about change (*Others in the image*). When P6 introduced change that felt believable (*Believability*), he connected to new internal processes (*Activation of internal processes during the re-script*). In doing so, P6 reported that his boss felt insignificant and could no longer control him (*Attitude towards the outcome*). P6 experienced a decrease in scores, particularly when was able to bring to mind and stay with a vivid image that included the original intrusion and believable new material. However, his scores increased back to baseline levels at follow-up.

3.3. Summary of Findings

Change associated with ImRs involved multiple processes, summarised in Figure 8. Given limited number of participants and sessions, lack of follow-up data and wide variation in scores, results are suggested tentatively. ImRs seemed most effective when participants felt safe, were not at risk of being re-traumatised and were willing to engage in treatment and approach the traumatic image. ImRs was facilitated by image activation, which prompted activation of internal processes and by the introduction of believable change that allowed new internal processes and beliefs about the trauma to surface.

4. Discussion

ImRs is an effective treatment for intrusive images (Arntz, 2012) but little is known about the mechanisms behind ImRs. The study aimed to investigate how ImRs mechanisms might influence outcome by 1) developing a coding scheme to summarise the content of ImRs sessions and 2) using a SCED to apply the coding scheme to ImRs sessions to see whether certain factors influence outcome. The discussion will provide a summary of the main findings including how they relate to the current literature.

4.1. Development and Application of the Coding Scheme

Braun and Clarke's (2006) guidelines for thematic analysis were used to develop a coding scheme that captured key features of ImRs. Factors included *Activation of the image*, *Activation of original internal processes*, *Activation of internal processes during the re-script*, *Definition of the outcome* and *Attitude towards the outcome*, which had been previously identified as potentially important ImRs factors (Brewin et al., 2010; Hackmann, 2005; Holmes & Mathews, 2010; Rusch et al., 2000; Wheatley & Hackmann, 2011). The emergence of new themes including *ImRs preparation*, *Attitude towards ImRs*, *Ability to follow ImRs*, *Departure from original image*, *Others in the re-script* and *Believability* was considered vital given the lack of existing systematic studies into ImRs mechanisms.

4.2. Session Content and its Relationship to Treatment Outcome

Participants who were motivated and engaged, were able to construct and stay with a vivid image, were able to access emotions, cognitions and physiological sensations associated with the image, introduced believable change at the worst moment and experienced a change in how they felt towards the image seemed more likely to experience

symptom relief. Although interpretations are hindered by a lack of stable baseline data and follow-up data, suggestions are strengthened by the current literature.

4.2.1. Attitude towards ImRs. Clients who were too fearful to engage in ImRs experienced no change in scores. Images in PTSD can be triggered by emotional states such as fear (Brewin et al., 2010; Hirsch & Holmes, 2007), which promote avoidance, dissociation and treatment drop-out (Silove, Tarn, Bowles, & Reid, 1991; Tarrier et al., 1999). In order to process traumatic memories therefore, individuals must feel safe enough to approach the image (Courtois, 2004).

4.2.2. Accessibility of the image. Participants who accessed vivid images seemed more likely to experience symptom reduction. According to Brewin's (2006) retrieval competition hypothesis, the more accessible the re-scripted image, the more likely it will be recalled and inhibit activation of the distressing image (Carroll, 1978; Gonsalves et al., 2004; Holmes & Bourne, 2008; Hyman & Pentland, 1996; Johnson, 2006; Tversky & Kahneman, 1973). However, some participants described images in detail but experienced little symptom relief, implying image activation alone is insufficient to reduce distress.

4.2.3. Ability to follow ImRs. Participants who stayed with and narrated the image seemed more likely to experience symptom reduction. Scene coherence, viewpoint consistency and causally related information can aid recall and reduce trauma-related anxiety (Black & Bern, 1981; Black, Turner, & Bower, 1979; Foa, Molnar, & Cashman, 1995; Hassabis, Kumaran, Vann, & Maguire, 2007). Participants who created and stayed with a vivid, coherent image may have found it easier to recall and compete with the original

image. However, some participants followed the ImRs process but experienced a worsening of scores. Therefore, additional factors must be considered.

4.2.4. Activation of internal processes. Participants who are ImRs allowed them to access original *and* new internal processes were more likely to experience symptom improvement. A key component of trauma-focused therapies is exposure to the original memory and associated emotions and cognitions (Foa, Keane, Friedman, & Cohen, 2009; (Foa, Molnar, & Cashman, 1995), which can decrease emotional monitoring and control (Richards & Gross, 2000) and aid memory contextualisation (Brewin et al., 1996). Exposure in the context of ImRs may allow participants to “process” the trauma memory more fully, reducing the changes that it is experienced as a distressing flashback (Holmes, Arntz, & Smucker, 2007), while pairing the original memory became associated with more positive emotions (Dibbets, Poort, & Arntz, 2012).

However, some participants accessed original internal processes, introduced new internal processes, but still experienced no change in levels of distress. Often, this was because images lacked *Believability*. ImRs requires change to be “meaningful” (Wheatley & Hackmann, 2011) so that maladaptive cognitions about the self and trauma and trauma can be modified (Grey, Holmes, & Brewin, 2001; Steil & Ehlers, 2000). The present study suggests that only participants who were able to introduce believable change were able to directly challenge old patterns of thinking and feeling and reduce distress.

4.2.5. Outcome. Participants introduced a variety of image endings including gaining control of the situation and experiencing compassion (*Definition of the outcome*). Self-efficacy plays a key role in how individuals cope following traumatic events (Bandura, 1997, in Benight & Bandura, 2004; Benight, Ironson, & Durham, 1999) and intrusions that are seen

as controllable are less likely to cause distress (Steil & Ehlers, 2000; Wells & Sembi, 2004; Witvliet, 1997). Compassion meanwhile directly challenges feelings of fear or self-blame and promotes treatment efficacy (Craske et al., 2008). It is suggested that participants who experienced control over images and compassion within the image shifted their beliefs about the role and impact of the traumatic image, reducing distress (Hofmann, 2008).

4.2.6. Summary. The study suggests that ImRs targets intrusive images in the following ways: Provided that the individual is willing to engage in treatment, ImRs reduces avoidance of the original traumatic image and facilitates emotional processing. Assuming the outcome is believable, ImRs allows individuals to access new internal processes and to update the meaning attributed to the original event, ultimately reducing distress.

4.3. Study Strengths and Limitations

The study provides clinical depth and detail not available in more experimental approaches such as RCTs (Grey & Holmes, 2008). The study posed no limitations on treatment implementation allowing for a preliminary exploration of real-world methods. Finally, by combining repeated measurement with qualitative data, a clearer insight into individual ImRs experiences is obtained. Despite these strengths, the inclusion of participants with depression or PTSD in Phase 1 means the coding scheme may be over-inclusive. Low final recruitment figures means the study lacks the power to make definitive interpretations. No control group is available, thus natural variation over time cannot be ignored, particularly given the lack of stable baseline data.

4.4. Clinical Implications and Future Research

The results emphasise the importance of client engagement and how this might be affected by life events. Results imply that ImRs pace and intensity must be adapted to suit client levels of distress (Gorman, 2001) and should be seen as a way to facilitate exposure, not as a way to avoid distressing memories. Large scale studies of ImRs, investigating treatment efficacy on a group and individual basis with long-term follow-ups are required. Specific ImRs factors must be experimentally manipulated to determine individual contributions of specific factors. Finally, qualitative analysis of interviews conducted with participants would provide additional insights into potential ImRs mechanisms.

4.5. Conclusion

The study highlights the importance of numerous ImRs components. Specifically, ImRs is aided by participant motivation and engagement, access to original and new, believable internal processes and a change in attitude towards the original event and image. Future research will be needed to disentangle the individual components presented here in order to improve treatment outcomes in the future.

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Appendices

Table 1. A summary of the themes extracted from Phase 1 participants' sessions

Theme	Sub-themes
Pre-imagery	<i>ImRs Preparation</i> <ul style="list-style-type: none"> • What preparation was put in place prior to ImRs? • Can the participant choose the direction of ImRs? • How much therapist input was required to prepare ImRs? • Were memory prompts used?
	<i>Attitude Towards ImRs</i> <ul style="list-style-type: none"> • Is the participant motivated to try ImRs? • Does the participant understand the ImRs rationale?
Whole process	<i>Participant's Ability to Follow ImRs</i> <ul style="list-style-type: none"> • Can the participant independently narrate the image? • Can the participant stay with the image?
Re-living	<i>Activation of Original Internal Processes</i> <ul style="list-style-type: none"> • What emotions, cognitions and physiological sensations does the participant report during the re-living section of ImRs? • How intense are these sensations?
Re-scripting	<i>Departure from the Original Image</i> <ul style="list-style-type: none"> • How much of the original image is included in the re-script? • At what point is change introduced into the image?
	<i>Others in the re-script</i> <ul style="list-style-type: none"> • Who is in the re-script? • What roles do these individuals play?
	<i>Believability</i> <ul style="list-style-type: none"> • Does the participant feel the re-script is believable? • Could the re-script actually have happened? • Is the re-script based on a real-world event?
	<i>Activation of Internal Processes During ImRs</i> <ul style="list-style-type: none"> • What emotions, cognitions and physiological sensations does the participant report during the re-scripted section of ImRs? • How intense are these sensations? • Have these changed from those experienced in the original image?
Outcome	<i>Definition of the Outcome</i> <ul style="list-style-type: none"> • What is the final outcome of the image? • Does it meet an unmet need?
	<i>Attitude Towards the Outcome</i> <ul style="list-style-type: none"> • How does the participant feel towards the re-script? • What message does the participant take from the image?

Table 2. Central location (and range) at baseline and follow-up for P1

	Baseline	Follow-up
IES Intrusions	25 (21-25)	20 (19-21)
IES Avoidance	27 (27-30)	23 (18-28)
IES Total	52 (48-55)	43 (39-47)

Table 3. Central tendency (and range) for each phase of treatment for P2

	Baseline	Intervention- Image 1	Intervention- Image 2
IES Intrusions	15 (12-15)	7.5 (7-9)	13.3 (11-21)
IES Avoidance	28 (26-28)	19.5 (18-22)	22.7 (18-30)
IES Total	41 (40-45)	28 (25-29)	37.3 (31-51)

Table 4. Central tendency (and range) for each phase of treatment for P3

	Baseline	Intervention
IES Intrusions	12 (10-18)	12 (10-13)
IES Avoidance	21(16-29)	13(13-17)
IES Total	31 (28-47)	25 (23-30)

Table 5. Central tendency (and range) for each phase of treatment for P4

	Baseline	Intervention
IES Intrusions	29 (27-31)	30 (29-31)
IES Avoidance	33 (32-34)	34
IES Total	62 (59-65)	34 (63-65)

Table 6. Central tendency (and range) for each phase of treatment for P5

	Baseline	Intervention
IES Intrusions	33	31 (31-33)
IES Avoidance	38	36 (33-38)
IES Total	71	64 (64-67)

Table 7. Central tendency (and range) for each phase of treatment for P6

	Baseline	Intervention	Follow-up
IES Intrusions	28	27 (21-28)	32.5
IES Avoidance	24 (24-25)	23.7 (21-25)	32.5
IES Total	52 (52-53)	51.7 (42-52)	68

Figure 1. Number of sessions attended by each participant

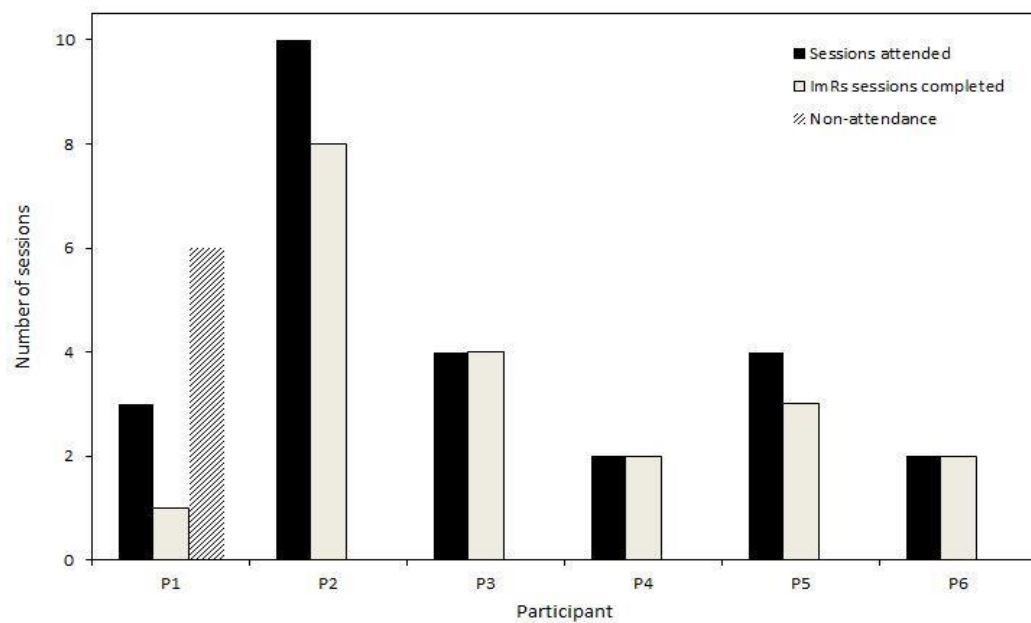


Figure 2. Trend and central location of P1's IES scores

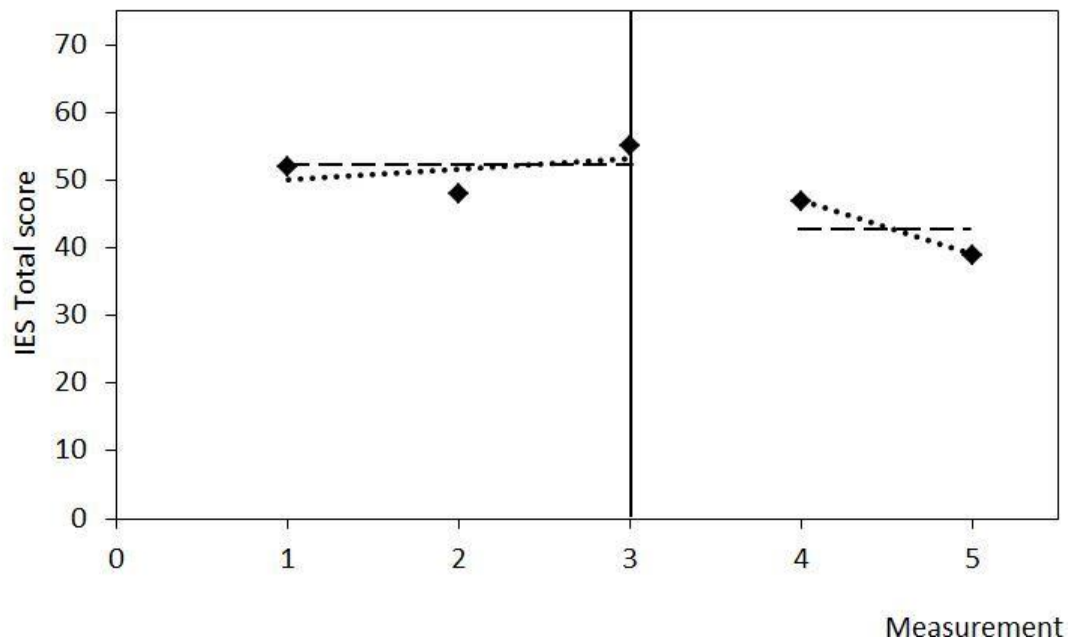


Figure 3. Trend and central location of P3's IES scores

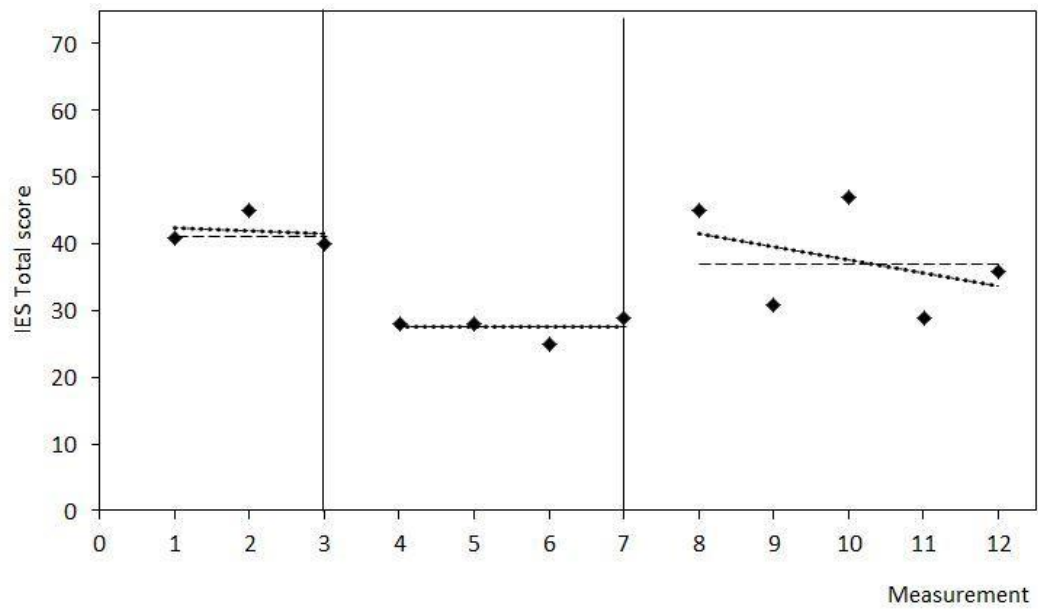


Figure 4. Trend and central location of P3's IES scores

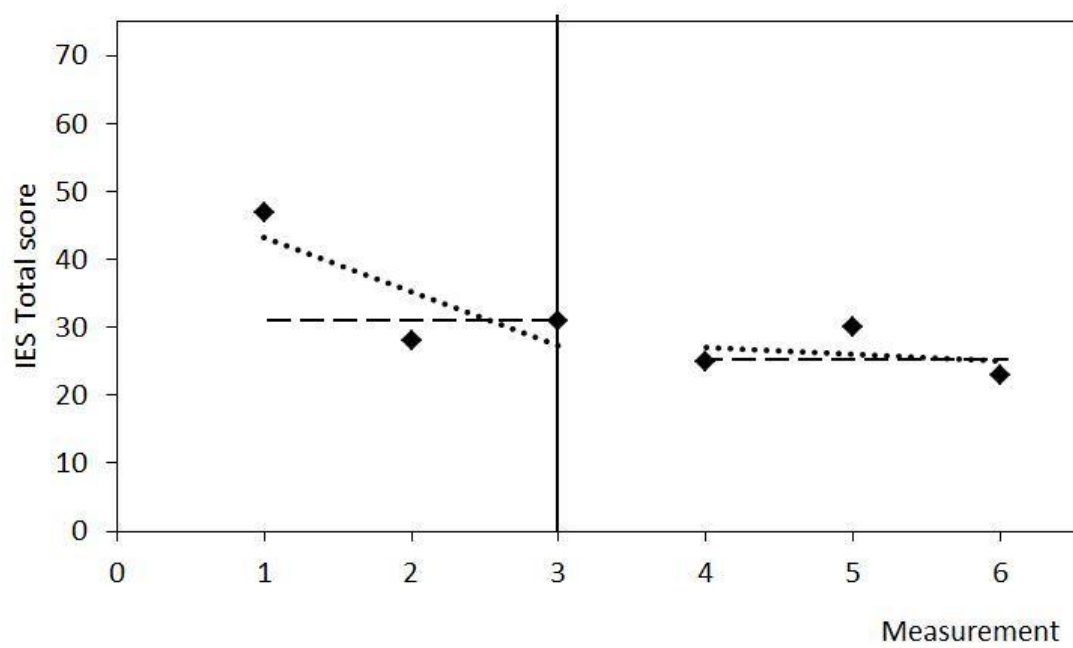


Figure 5. Trend and central location of P4's IES scores

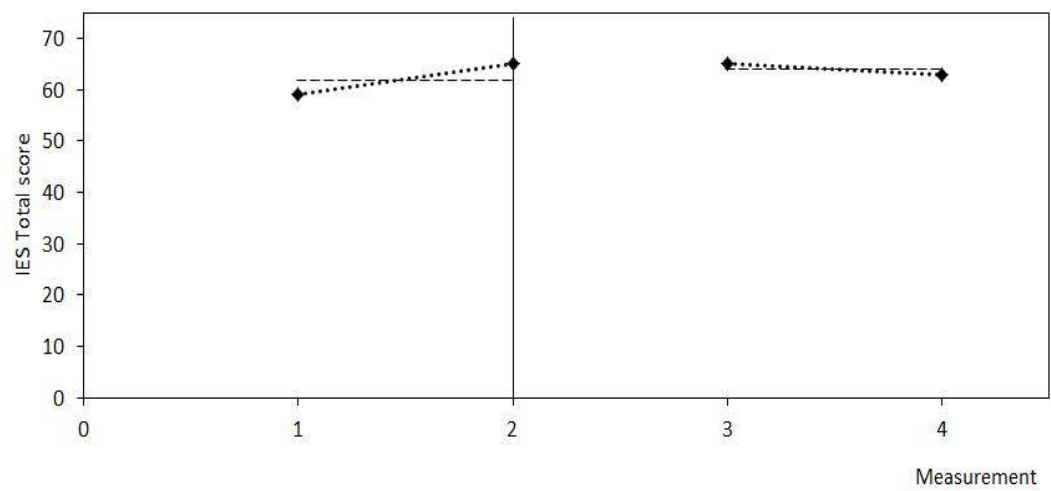


Figure 6. Trend and central location of P5's IES scores

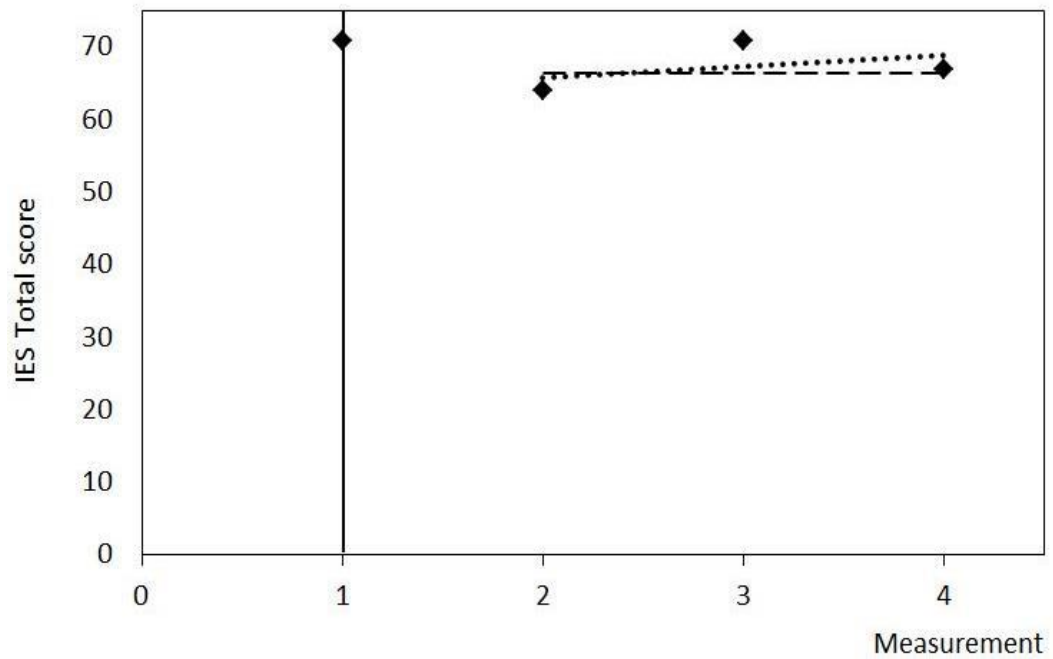


Figure 7. Trend and central location of P6's IES scores

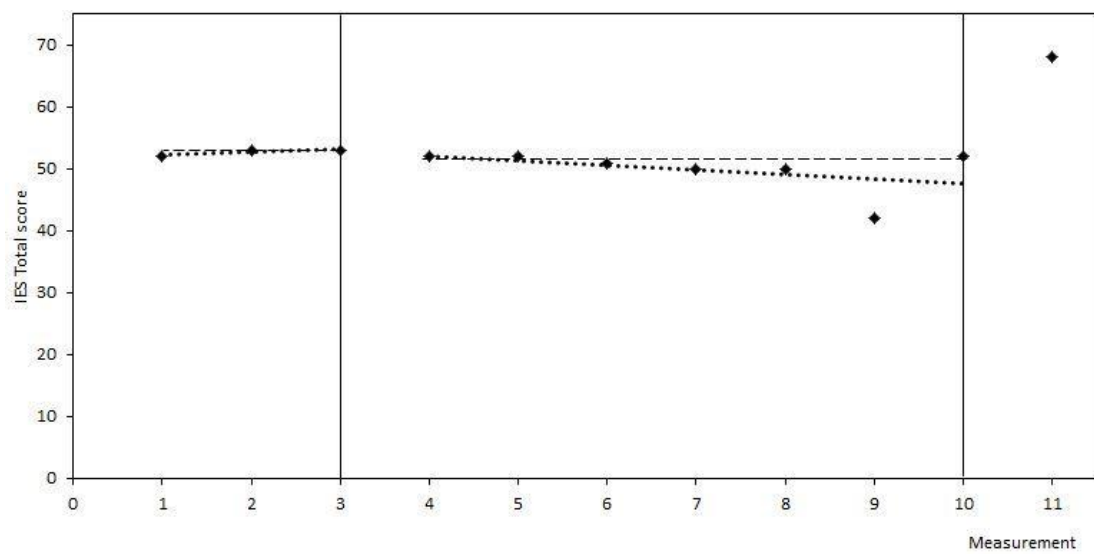


Figure 8. A diagrammatic summary of findings