Investigating Effective Treatments for Adults with Post-Traumatic Stress Disorder from Childhood Trauma Experiences

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This thesis is presented for the degree of Doctor of Philosophy of the University of Western Australia
School of Medicine
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Thesis Declaration

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This thesis has been substantially accomplished during enrolment in the degree.

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Written patient consent has been received and archived for the research involving patient data reported in this thesis.

The following approvals were obtained prior to commencing the relevant work described in this thesis: Department of Health, Government of Western Australia; Murdoch University; Maastricht University, the Netherlands; University of Lübeck, Germany.

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Abstract

More recently it has been recognised that there are more complex forms of post-traumatic stress disorder (PTSD). One such population is adults with PTSD from childhood trauma experiences (Ch-PTSD). The current evidence-based treatment recommendations for PTSD are trauma-focused approaches. While effective, these approaches were developed with predominantly adult-onset, single-event trauma populations. It has been argued that these approaches do not take into consideration the sequela of childhood trauma experiences and their impact on current treatments. With this in mind, the purpose of this thesis was to investigate the issues and difficulties with treating adults with Ch-PTSD.

Chapter one provides a general overview of the current understandings of PTSD and Ch-PTSD. It outlines the controversies in the research regarding treatments and the implications on current clinical practice.

Chapter two discusses where current PTSD treatments can fail to adequately address patients’ symptoms, in particular, when they have experienced childhood adversity. This chapter outlines the threefold approach adopted for this thesis to understand the issues with treatment for Ch-PTSD.

The first study is a case study which describes the difficulties in treating a client who presented with PTSD from a work related incident. Here a schema therapy approach was used to address unresolved childhood experiences and it suggests the benefit in exploring different treatments for patients with Ch-PTSD.

Study two, is IREM, an international multi-site randomised controlled trial for adults with Ch-PTSD. Firstly, the design of IREM and the rationale for using imagery rescripting (ImRs) and eye movement desensitisation and reprocessing (EMDR) for treatment of Ch-PTSD is provided. Next, the outcome of the IREM trial is presented with an intent-to-treat sample of 155 participants across Australia, Germany, and the Netherlands. The results of this research found that both treatments were effective in treating Ch-PTSD with significant reductions in patients PTSD, which were maintained at follow-up assessments. Patients also had significant reductions in secondary outcomes including depression, dissociation, trauma related...
cognitions, and feelings such as shame and guilt. The low dropout rates in IREM suggest that both treatments were well tolerated by patients.

Study three and four adopted a different approach to the topic of Ch-PTSD by conducting qualitative interviews with patients \((N = 44)\) and therapists \((N = 16)\) involved in IREM. The results of these studies were combined into one manuscript. These studies aimed to further understand the treatment experience with the view to highlight important components of interventions and possible barriers for treatment implementation and effectiveness. This qualitative research produced interesting findings including that both patients and therapists recognised the need to treat the trauma despite the patients acknowledging difficulty in revisiting their past experiences or therapists concerns about their competence and fear of symptom exacerbation.

The final chapter, is the general discussion which summarises the overall results of the studies and the substantial contribution this research makes to our understanding of Ch-PTSD. Together, the findings of this research provide support for the use of trauma-focused treatments for Ch-PTSD. It outlines the significance of IREM as being the first international randomised controlled trial that has directly compared ImRs and EMDR for treatment of Ch-PTSD. It is also the first large scale trial with ImRs as one of the interventions. The results of this research are highly clinical applicable and could potentially make a significant difference to current clinical practices and therefore, treatment outcomes for Ch-PTSD. It concludes with suggestions for future research.
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This thesis contains work that has been published and prepared for publication.

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Chapter 1: General Introduction
General Introduction

General Overview of Post-Traumatic Stress Disorder

The Diagnostic and Statistical Manual for Mental Disorders fifth edition (DSM-5) defines post-traumatic stress disorder (PTSD) as symptoms resulting from an individual experiencing, witnessing, or learning about an event which threatened the life or safety of either themselves or those around them. The symptom clusters for PTSD include intrusions, avoidance, negative alterations in mood and cognitions, and changes in arousal. Symptoms have to cause significant distress or functional impairment and be present for 1 month or more (American Psychiatric Association, 2013). PTSD is considered chronic when symptoms have been present for 3 months or more (Bisson, Roberts, Andrew, Cooper, & Lewis, 2013).

Epidemiological surveys have estimated that approximately 70.4% of individuals’ experience lifetime traumatic events yet only a small percentage will go on to develop PTSD (Atwoli, Stein, Koenen, & McLaughlin, 2015; Kessler et al., 2017). Chronic exposure to traumatic experiences can lead to more complex presentations which, until only fairly recently, have received little attention in the research literature (van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005).

The Effects of Childhood Trauma

The seminal article by Herman (1992) proposed a complex form of PTSD which was an aftereffect of prolonged and repeated trauma experiences, usually interpersonal in nature, and where victims are unable to escape. This syndrome was seen in survivors of experiences such as concentration or slave labour camps, religious cults, and also childhood trauma. The focus of this research is on one of those populations, specifically, adults with PTSD from childhood trauma (Ch-PTSD).

Childhood is a time of significant growth where children are expected to reach many physical, cognitive, social, and emotional developmental milestones. This period is critical for laying the foundations for a person’s health and wellbeing across their lifetime (Carr, 2006). Trauma experiences in childhood can have significant effects on an individual’s neurobiological development and lifetime functioning (Courtois, 2008; van der Kolk et al., 2005).
There has been extensive research on the impact of adverse childhood experiences such as physical or sexual abuse, neglect, exposure to domestic violence, parental mental illness, or substance use. The multitude of possible negative outcomes over the life course as a result of these experiences encompass all domains such as poorer health i.e. obesity or heart disease, mental health issues, difficulty in maintaining healthy and stable relationships, substance abuse, limited opportunities, and poverty (Felitti & Anda, 2010; Larkin, Shields, & Anda, 2012).

**Diagnosis of Complex PTSD**

Since the proposal of the complex PTSD phenomenon, there has been increased research interest in it. However, it has only been in the recent revisions in the DSM-5 and the upcoming International Classification of Mental and Behavioural Disorders version 11 (ICD-11) that the complex PTSD phenomenon has been considered (American Psychiatric Association, 2013; World Health Organization [WHO], 2018, June 18). Separate DSM-5 and ICD-11 working groups were established to consider the validity of the complex PTSD diagnosis and to help define the symptom profile of this disorder. The DSM-5 working group concluded that there was insufficient evidence to support complex PTSD as a distinct diagnostic construct. They did, however, acknowledge that the circumscribed nature of the existing PTSD diagnosis was more related to adult or single event trauma experiences. Consequently, additional symptoms were included in the DSM-5 diagnostic criteria to encapsulate more chronic forms of PTSD (Resick et al., 2012). In contrast, the aim of the ICD-11 working group was to improve clinical utility and global acceptability for PTSD and other stress-related disorder diagnoses. They reviewed the diagnostic concepts and concluded that there was sufficient evidence for a new complex PTSD diagnosis (Brewin et al., 2017; Maercker et al., 2013).

Regardless of the differing conclusions of the diagnostic classifications, both working groups agreed on the symptom characteristics of more complex trauma experiences. Symptom clusters include disturbances in affect and behavioural dysregulation, self-concept, and interpersonal functioning (Maercker et al., 2013; Resick et al., 2012). Disturbances in affect and behaviour relate to an individual’s ability to self-regulate including their capacity to tolerate distress and to manage extremes of emotions or physiological arousal without becoming easily overwhelmed (Herman, 1992; Luxenberg, Spinazzola, & Van der Kolk,
Characteristics of disturbances in self-concept include pervasive and intense feelings of shame, guilt or failure, and persistent negative self-perceptions (Ford, 2015; Maercker et al., 2013). Interpersonal functioning issues include difficulty trusting people which impacts individuals’ ability to develop healthy personal relationships and also difficulty functioning in work and social situations (Cloitre et al., 2010; Courtois, 2008). It is because of the complex symptom presentations that adults with Ch-PTSD have been identified as a population that is difficult to treat (Spinazzola, Blaustein, & van der Kolk, 2005).

**General Approach to PTSD Treatment**

The evidence-based treatment recommendations for PTSD are individual trauma-focused approaches. One approach includes variants of trauma-focused cognitive behaviour therapy (Tf-CBT) such as cognitive processing therapy (CPT) or prolonged exposure (PE), and the second approach is eye movement desensitisation and reprocessing (EMDR; National Institute for Health and Care Excellence [NICE], 2018; WHO, 2013).

Trauma-focused treatments involve exposure to traumatic material to facilitate emotional processing of trauma experiences and to provide corrective information (Brewin & Holmes, 2003; Ehlers & Clark, 2000; Foa, Davidson, & Frances, 1999). For Tf-CBT approaches, this is facilitated through strategies such as imaginal or in vivo exposure and/or cognitive restructuring. Imaginal exposure involves prolonged reliving of traumatic events, in first person and present tense, to activate the patients’ fear response in an environment inconsistent with their fear structure (Foa, Hembree, & Rothbaum, 2007; Foa & Kozak, 1986). Individuals are guided to activate the trauma memory by focusing on the thoughts, feelings, and sensations associated with the traumatic event with this process being repeated until the distress levels decrease to cause habituation (Foa, Rothbaum, Riggs, & Murdock, 1991). In vivo exposure strategies are when patients confront feared objects associated with their trauma and are used to target PTSD symptoms such as avoidance or hypervigilance. Similar to behavioural activation for depression, in vivo exposure are behavioural tasks that patients complete as homework such as sitting in a restaurant with their back to the door (Foa et al., 2007). Cognitive restructuring is used to challenge negative distortions and beliefs
individuals have about themselves that developed as a result of their trauma experiences (Ehlers & Clark, 2000; Tarrier et al., 1999).

The purpose of EMDR is to resolve emotional distress caused by traumatic events or experiences. It is predicated on the adaptive information processing model that hypothesizes that PTSD is the result of trauma memories that have been dysfunctionally stored in the memory network (Shapiro, 2001; Solomon & Shapiro, 2008). Thus, reprocessing of traumatic experiences which EMDR does using bilateral stimulation, usually in the form of therapists’ hand movements or tapping, helps to reconsolidate trauma memories and alleviates the lingering effects of these experiences (Schubert & Lee, 2009; Shapiro & Forrest, 2004). The effectiveness of EMDR is based on working memory theory. This theory postulates that our working memory only has limited cognitive capacity and that the distraction of the dual attention focus taxes working memory thereby making trauma memories less vivid and distressing (van den Hout & Engelhard, 2012).

Extensive research has found TF-CBT and EMDR to be more effective than supportive group or pharmacological therapies for treatment of PTSD (Bisson et al., 2019). The evidence base for these treatment recommendations were developed using various trauma populations such as people who had experienced sexual assault, road accident victims, or veterans. These treatment recommendations have been challenged as they have predominantly focused on adult-onset, single event traumas and thus do not fully encapsulate more chronic forms of PTSD such as trauma experienced in childhood (Bryant, 2010; Spinazzola et al., 2005).

**Controversies in Relating to Treatment for Ch-PTSD**

With the recent acknowledgement of complex PTSD in the diagnostic criterion, it has highlighted that there is only limited evidence for best practice recommendations for treating Ch-PTSD. A further criticism of current PTSD treatments is that they do not take into consideration the clinical impact of developmental age at the time of the trauma experience (van der Kolk et al., 2005). Indeed, research findings have identified that childhood abuse negatively moderates treatment outcomes (Karatzias et al.,
Consequently, there has been much debate in the literature regarding what is the best approach to treatment (de Jongh et al., 2016; Dorrepaal et al., 2014).

Central to the Ch-PTSD treatment debate is the opinion held by trauma associations and experts that the more complex symptom presentations make the recommended trauma-focused approaches unsuitable (Cloitre et al., 2012; Cloitre et al., 2011; Karatzias & Cloitre, 2019). They posit that patients with Ch-PTSD only have limited capacity to tolerate and manage increased levels of emotional distress associated with reprocessing their trauma memories. Some researchers have suggested that current treatments should be modified to better meet the needs for individuals with Ch-PTSD which has seen the introduction of phase-based treatments (Bohus et al., 2013; Levitt & Cloitre, 2005; Steil, Dyer, Priebe, Kleindienst, & Bohus, 2011).

**Phase-Based Treatment for Ch-PTSD**

As an alternative to trauma-focused approaches, phase-based treatments were specifically designed to address symptom disturbances associated with Ch-PTSD including affect management and interpersonal relationships. These treatments usually involve a 12-week program with the aim of improving patients’ safety and stability through skill building which is then combined with PE interventions either on a weekly or biweekly basis (Dorrepaal et al., 2010; Levitt & Cloitre, 2005). The initial focus on skill building is understood to help improve patients’ daily functioning leading to better treatment engagement and, subsequently, better outcomes (Wolfsdorf & Zlotnick, 2001).

One such treatment is the Skills Training and Interpersonal Regulation (STAIR) program which was developed specifically for the Ch-PTSD population. Adapted from the principles of dialectical behaviour therapy, this program is designed as a phase-based approach for addressing interpersonal disturbances, emotional dysregulation, and learning distress tolerance strategies which is then combined with standardised exposure therapy (Cloitre et al., 2010; Linehan, 1993). The evidence from this research has shown it to be an efficacious treatment approach with the skill building facilitating effective management of distress during trauma processing, resulting in better outcomes and lower treatment drop outs (Levitt & Cloitre, 2005). However, several issues arise from these results including treatment comparison conditions...
and the inconsistent use of exposure in the treatments. Furthermore, the STAIR component of the
treatment has not been assessed as an independent intervention and the complete STAIR plus exposure
program has not been compared with the recommended best-practice treatments for PTSD. Thus,
conclusions cannot be made regarding its overall effectiveness for Ch-PTSD (Cloitre et al., 2010).

Of the published studies that have implemented phased-based approaches, the comparative
conditions have included case management, group therapy, and skills training. However, not all of these
studies included components of trauma reprocessing and for those that did, most the trauma-work
appeared to be secondary to the skill building (Bradley & Follingstad, 2003; Classen et al., 2011; Cloitre,
Koenen, Cohen, & Han, 2002; Ford, Steinberg, & Zhang, 2011; Steil et al., 2011; Zlotnick et al., 1997).

One major criticism of phase-based approaches is that they promote avoidance and containment of
distress which only provides short-term relief for patients and this relief can serve to exacerbate symptoms
and impair long-term functioning (Wolfsdorf & Zlotnick, 2001). Further, these studies again highlight the
criticisms of the phase-based approaches in denying individuals an appropriate intervention for their
trauma symptoms such as the frequency and hyperarousal of their intrusive memories (de Jongh et al.,
2016).

**Trauma-Focused Treatments for Ch-PTSD**

The use of phase-based approaches was not supported in findings from a meta-analysis on
treatment for childhood abuse. These results found that individual trauma-focused interventions were
more efficacious in treating Ch-PTSD (Ehiring et al., 2014). While there may be some merit to phased-based
approaches, it is important that we first understand why the current evidence-based treatments for PTSD
are not considered effective or appropriate for Ch-PTSD.

Trials using Tf-CBT treatments for Ch-PTSD have so far produced mixed results. One study by
McDonagh et al. (2005) used a sample of patients with chronic PTSD from childhood sexual abuse. The
results of this study showed significant reductions in PTSD and secondary outcomes such as depression,
dissociation, and trauma-related cognitions or beliefs. However, a dropout rate of 45% was recorded for
the CBT condition that would be considered high in comparison to the average dropout rate of 22% in
other studies for Ch-PTSD (Ehring et al., 2014). Another study by Resick and colleagues (2003) conducted follow-up analyses on data from a trial of female rape victims with or without a history of childhood trauma. This study compared CPT and PE with a delayed wait-list condition. This study reported that both active treatments were effective in reducing PTSD, depression, and symptoms consistent with complex PTSD.

Notwithstanding this, one ongoing issue with Tf-CBT approaches is the poor implementation of these treatments, particularly those that utilise PE strategies. In the case of Ch-PTSD, the additional symptom complexity has been found to adversely affect the perceived suitability for treatment using PE (Dorrepaal et al., 2014; van Minnen, Harned, Zoellner, & Mills, 2012). Research has identified a general reluctance by many therapists to implement exposure-based treatments citing patient-related factors including fear of symptom exacerbation as well as concern over patients’ ability to engage in trauma reprocessing (Becker, Zayfert, & Anderson, 2004; van Minnen, Hendriks, & Olff, 2010). In studies exploring therapist behaviours and perspectives on treatment, particularly using PE approaches, many have discussed a fear of “opening Pandora’s box”. That is, patients decompensating, ambiguity about the credibility of treatments, and doubt about their competence to effectively implement treatment (Cook, Schnurr, & Foa, 2004; Frueh, Cusack, Grubaugh, Sauvageot, & Wells, 2006; Ruzek et al., 2014). While the nature of PE approaches has been suggested as being distressing for patients, research on treatment preferences has found that patients predominantly prefer exposure-based treatments over medication (Simiola, Neilson, Thompson, & Cook, 2015). In one analogue study, patients were asked to imagine undergoing a trauma experience which resulted in PTSD; they were then asked to rate their most preferred treatment. Results found that patients predominantly chose exposure based or CBT treatments over other psychotherapies (Becker, Darius, & Schaumberg, 2007). Moreover, qualitative studies on patients’ treatment experience report that although they have fear and anxiety about reliving their trauma experiences, it is also important for their recovery to talk about and confront their traumatic past (McGregor, Thomas, & Read, 2006; Shearing, Lee, & Clohessy, 2011). Taken altogether, these findings
suggest that therapists’ aversion to PE approaches is just as relevant to poor implementation of treatment as perceived patient-related factors.

In the case of EMDR, there have only been a limited number of studies that have investigated its effectiveness for treating Ch-PTSD; see Chen et al. (2018) for a full overview. Each study reported significant reductions in PTSD symptoms at post-treatment which were maintained at follow up. Additionally, they reported significant reductions in secondary symptoms such as depression and anxiety (Edmond & Rubin, 2004; Edmond, Rubin, & Wambach, 1999; Scheck, Schaeffer, & Gillette, 1998; van der Kolk et al., 2007). Chen and colleagues (2018) did, however, note that there was significant heterogeneity between the studies including secondary outcome measures, study populations, and length of follow-up assessments. Nevertheless, there is evidence to support the effectiveness of EMDR for the treatment of Ch-PTSD; however, much more research is needed to determine if it is effective for the additional symptoms associated with this disorder.

**Overview of Outstanding Issues**

Childhood trauma experiences are recognised as significantly impacting the lifetime development and functioning of an individual. Only recent revisions of the diagnostic classifications have acknowledged complex PTSD yet there is still disagreement whether this disorder is in fact a distinct diagnostic construct with characteristics distinguishable from PTSD. The sequela of childhood trauma experiences can lead to additional symptoms such as disturbances in affect and behaviour, self-concept, and interpersonal functioning which some believe make this population more difficult to treat.

There is lack of agreement on the best approach to treat Ch-PTSD. Some suggest that the evidence-based trauma-focused treatments for PTSD are not appropriate for this population as their additional symptom disturbances mean that they have only a limited capacity to tolerate increased levels of distress required for reprocessing their trauma experiences. As an alternative, phased-based treatments have been suggested for treating individuals with Ch-PTSD. These approaches include a stabilisation phase to improve patients’ functioning and develop their distress tolerance skills. The evidence for the phase-based approaches is limited and they have also been challenged for their contradictory approach to treatment.
That is, despite their tailoring interventions to specifically meet the needs of individuals with Ch-PTSD, they also delay patients in receiving appropriate treatment for their disorder.

Meta-analyses have identified trauma-focused treatments as the first-line approach for Ch-PTSD. However, there is ongoing reluctance from therapists to use exposure-based interventions, in particular PE, as they can be uncomfortable or fear provoking for patients and therapists alike (Frueh et al., 2006). Therefore, it would seem of no benefit in promoting treatments that would not be utilised in real-world clinical settings.

At this time, due to the paucity of research, there is insufficient evidence to draw conclusions on best practice for treating Ch-PTSD. More research is needed to find better ways of addressing the needs of individuals with Ch-PTSD and to develop more effective treatments that are acceptable to patients and therapists thus increasing the likelihood of them being regularly employed in everyday clinical practice. Recommendations for further research include exploring if the current trauma-focused treatments can adequately meet the needs of this population by addressing the additional symptoms associated with Ch-PTSD and, if not, exploring other treatments to see what can be adopted from their intervention approach to address the complexity of childhood trauma experiences. Next, research should investigate the effectiveness of a wider range of trauma-focused approaches for treatment of Ch-PTSD. Lastly, research to improve our understandings of Ch-PTSD should include analyses of barriers to implementation as well as effectiveness of treatments on patient outcomes. Such investigations may need to look at understanding both patients’ and therapists’ reluctance and enthusiasm for such treatments.
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Chapter 2: Treating Childhood Trauma
There has been ongoing controversy in the research literature regarding how best to treat adults with post-traumatic stress disorder from childhood trauma experiences (Ch-PTSD; Cloitre et al., 2012; de Jongh et al., 2016). As highlighted in chapter one, more complex forms of PTSD have only recently been recognised in the diagnostic classification manuals and even then, the diagnosis is still somewhat contentious. What has been agreed upon are the additional symptom characteristics associated with this disorder which include disturbances in affect regulation, self-concept, and interpersonal functioning (Maercker et al., 2013; Resick et al., 2012). It is these additional symptoms that have been considered deleterious to the recommended trauma-focused approaches for PTSD. However, the ongoing debate about best-practice and the lack of a systematic approach to investigating treatments for Ch-PTSD has hindered progress in identifying effective treatments and improving patient outcomes.

**Problems with Current Evidence-Based Treatments**

While a single meta-analysis by Ehring and colleagues (2014) indicated that trauma-focused approaches are the most effective for treating Ch-PTSD, it has been suggested that there may be some issues with current treatments due to the nature of these interventions and the complexities associated with treating this population (Karatzias & Cloitre, 2019). Yet it is not clear what components of treatment impact on the effectiveness of trauma-focused interventions or why they do not meet the needs of individuals with Ch-PTSD.

One of the main issues with treating adults with Ch-PTSD is that the trauma experiences occur at critical points in development and therefore, impacts psychopathology and lifelong functioning. For evidence-based trauma-focused cognitive behavioural therapy (Tf-CBT) treatments, it has been suggested that they often do not consider more complex origins of psychopathology such as childhood trauma experiences (Karatzias et al., 2019; van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005). The sequelae of childhood trauma experiences also contribute to maladaptive behaviours as an individual’s way of coping with their unresolved trauma. These behaviours can
serve to maintain trauma-related symptoms so it is important for treatment to address both the trauma and the subsequent behaviours (Courtois, 2008; Young, Klosko, & Weishaar, 2003).

For the treatment of Ch-PTSD, Tf-CBT approaches have shown improvements in patients’ PTSD; however, they have been criticised for not effectively treating other underlying issues related to developmental trauma experiences (Arntz, Sofi, & van Breukelen, 2013; Dorrepaal et al., 2014). For example, some studies point to exposure being an effective intervention when fear or helplessness are the primary emotions, yet exposure may be less effective when the trauma involves other emotions or cognitions such as shame or guilt, which are common to Ch-PTSD (Foa & Kozak, 1986; Holmes & Mathews, 2005; Lee, Scragg, & Turner, 2001).

Likewise, phase-based treatments such as the skills training and interpersonal regulation program and DBT-PTSD aim to promote patient safety and stabilisation through developing skills in affect management and interpersonal functioning (Bohus et al., 2019; Cloitre et al., 2010; Steil et al., 2018). These treatments incorporate skills training, usually strategies taken from dialectical behaviour therapy, in preparation for trauma processing in the form of prolonged exposure strategies, taken from CBT approaches (Bohus et al., 2013; Levitt & Cloitre, 2005). While these treatments improve patient functioning, their focus is primarily on preparation for trauma processing so it is unclear if they effectively target the issues associated with childhood trauma; specifically, the maladaptive behaviours and coping styles that develop following these early life experiences (Cloitre et al., 2010; de Jongh et al., 2016).

**Beyond Current Trauma-Focused Interventions**

One possible approach for improving Ch-PTSD treatments and to help overcome the issues with current Tf-CBT approaches is to explore more comprehensive models that target adverse childhood experiences. One treatment that might be especially suitable for Ch-PTSD is schema therapy (ST). ST was developed as an extension to CBT when patients with more chronic or characterological disturbances such as borderline personality disorder (BPD) did not respond to traditional treatment (Young, 1990; Young et al., 2003). The goal of ST is to meet basic emotional
needs, reorganise a patient’s inner structure, and to address lifelong maladaptive patterns of behaviour and ways of relating with the world so that patients can develop their healthy adult mode. Treatment consists of a combination of cognitive restructuring, emotional regulation, experiential techniques, and behavioural pattern breaking (Kellogg & Young, 2006; Young et al., 2003).

ST may be considered as a potential option for treatment of more chronic presentations such as Ch-PTSD. Indeed, there are many similarities between BPD and Ch-PTSD (Cloitre, Garvert, Weiss, Carlson, & Bryant, 2014; Resick et al., 2012). For example, the aetiology of both disorders are considered as originating from adverse childhood environments or experiences. In addition, the psychopathology of BPD is characterised by emotional lability, impulsivity, and pervasive patterns of instability including interpersonal functioning and disturbances in identity (American Psychiatric Association, 2013; Courtois, 2008; Young et al., 2003). Despite characteristics of BPD being distinguishable from complex PTSD, the symptoms are similar (Cloitre et al., 2014; Resick et al., 2012).

A central premise of ST is that emotional regulation difficulties are the consequence of adverse childhood experiences and a subsequent fear of emotions. As such, by processing these childhood trauma experiences, this indirectly leads to improvements in emotional regulation (Fassbinder, Schweiger, Martius, Brand-de Wilde, & Arntz, 2016). This suggests that it would be particularly suited for targeting the additional symptoms associated with Ch-PTSD.

Research has identified that even trauma experienced as an adult can have its origins in adverse childhood experiences which, has been largely neglected in standard Tf-CBT approaches. From a ST perspective, adverse childhood experiences can contribute to the development of early maladaptive schemas (EMS) which are at the core of psychological distress and psychopathology (Bernsten et al., 2012; Nordahl & Nysaeter, 2005; Young et al., 2003). EMS are conceptualised as rigid dysfunctional beliefs which lead to maladaptive coping styles and increased vulnerability (Kellogg & Young, 2006; Nysæter & Nordahl, 2008; Vaile Wright, Collinsworth, & Fitzgerald, 2010). Indeed, the role of EMS in the onset and maintenance of PTSD has been highlighted in other studies.
Therefore, by treating past trauma experiences and targeting EMS, it could effectively treat PTSD and additional symptoms associated with complex PTSD, in particular disturbances in sense of self (Cloitre et al., 2009; Cockram, Drummond, & Lee, 2010; Vaile Wright et al., 2010).

All things considered, ST is a possible alternative treatment that may help to overcome difficulties with current trauma-focused approaches for treating Ch-PTSD. It is a comprehensive and integrative treatment with childhood trauma as the central feature (Kellogg & Young, 2006; Young et al., 2003). ST has demonstrated its effectiveness in addressing adverse childhood experiences and characterological disturbances including treating personality disorders. More recently it has been applied to treatments for other disorders such as mood and anxiety disorders indicating that it could be beneficial for addressing comorbid diagnoses often found in individuals with Ch-PTSD (Hawke & Provencher, 2011; Masley, Gillanders, Simpson, & Taylor, 2012).

Summary

The age and stage of trauma experience in childhood can significantly impact psychopathology and subsequently, treatment effectiveness and outcomes. Researchers have argued that the trauma-focused approaches for PTSD treatment are impacted by additional issues which some suggest are deleterious to treatment outcomes and need to be considered in the planning of interventions (Karatzias et al., 2019; Spinazzola, Blaustein, & van der Kolk, 2005). Current treatments, may not adequately meet the needs of individuals with Ch-PTSD and therefore exploring other, more comprehensive treatment models may be beneficial for to improving our approach for treating Ch-PTSD. One such treatment is ST, which was developed as an extension of CBT for more chronic and characterological presentations. The techniques and approach of this intervention appear especially suited to individuals with Ch-PTSD and the additional symptoms associated with this disorder.

With this in mind, the next chapter presents a case study of a man named Bob. This case study is used to demonstrate the issues or inadequacies of an evidence-base treatment for PTSD, specifically Tf-CBT, when a patient present with a background of trauma experiences from
childhood. While there were some improvements using Tf-CBT, different strategies were required to address his childhood trauma history. As previously discussed, ST was developed as an extension of CBT to help address chronic or characterological disturbances. ST has also been suggested as a possible intervention for more complex or chronic PTSD presentations.
References


Chapter 3: A Schema Therapy Approach to the Treatment of Post-Traumatic Stress Disorder

Abstract

Post-Traumatic Stress Disorder (PTSD) is a complex condition often influenced by personality characteristics and comorbidity with other psychiatric disorders. More recent understandings of PTSD have suggested that schemas play a role in the development and maintenance of this condition. Schema Therapy (ST) was developed to address more characterological disturbances in chronic disorders. It is an integrative approach for treatment which incorporates practices from other therapeutic orientations. The purpose of this article is to describe some key components of ST and how these can be applied to the treatment of patients with more chronic or complex forms of PTSD. These components include formulating a patients’ symptom presentation in terms of their early maladaptive schemas (EMS) and modes. The assessment of EMS, in particular, taking into account a patients’ developmental history and how this has impacted their response to a trauma. In addition, emotion-oriented and experiential techniques are key interventions in ST. Finally, ST has a unique perspective on the therapy relationship which has been described as “limited reparenting”. A case study will be used to demonstrate how these components of ST were effective for intervention where previous techniques had failed. The article concludes with some of the research that supports these components of ST. Specific recommendations are made for future research.

Keywords: posttraumatic stress disorder, Schema therapy, modes, experiential techniques, therapy relationship
A Schema Therapy Approach to the Treatment of Post-Traumatic Stress Disorder

Post-traumatic stress disorder (PTSD) is the result of an individual either experiencing, witnessing or learning about traumatic events that could have resulted in death or serious injury. The core symptom clusters include intrusions, avoidance, hyperarousal, negative mood or cognitions, and there must be significant distress or impairment of functioning (American Psychiatric Association, 2013). PTSD is considered chronic when symptoms are present for more than three months (Bisson, Roberts, Andrew, Cooper, & Lewis, 2013). Complex PTSD, in contrast to PTSD from a single traumatic event, is a disorder that perpetuates from prolonged, repeated trauma experiences such as childhood abuse. For complex PTSD, the individual must meet PTSD criteria and endorse additional symptom disturbances in self-perception, emotional regulation and interpersonal functioning (Maercker et al., 2013).

PTSD and complex PTSD are multifaceted conditions that include emotional, physiological, cognitive and behavioural components. In addition, there is often high levels of comorbidity with a range of psychiatric conditions such as depression and substance abuse (Brunello et al., 2001). Furthermore, childhood adversity has been found to effect the likelihood of development of PTSD following adult traumas (Berntsen et al., 2012; King, King, Foy, & Gudanowski, 1996). Therefore, a therapy that incorporates a multifaceted approach and has an emphasis on the etiology of childhood experiences in adult pathology might be well suited to offering treatment solutions for PTSD.

Schemas are life-long core ideas or themes comprised of cognitions, emotions, memories and body sensations which influence how an individual view himself/herself, his/her relationships with others and the world (Young, Klosko, & Weishaar, 2003). Researchers have suggested that schemas pay a role in the onset and pervasiveness of disorders (Beck, 1976; Young, 1990). Indeed, many theories for understanding PTSD suggest that schemas are central to the development and maintenance of this disorder (Ehlers & Clark, 2000; Price, 2007). Schema Therapy (ST) places a strong emphasis on experiential techniques to process aversive memories and traumatic experiences, which makes it especially suitable for treatment of PTSD (Arntz, 2012; Young et al., 2003). With this in mind, the purpose of this article is to outline the use of a
ST approach for the treatment of more complex or chronic forms of PTSD. The treatment model is illustrated with a case study and then the research evidence that supports this treatment approach will be discussed.

ST developed as an integrative model having its roots in cognitive behaviour therapy (CBT), but also drawing on attachment theory and other approaches including gestalt, psychodynamic and interpersonal therapies (Young, 1990). The key components of ST including early maladaptive schemas, schema modes, experiential techniques and the specific design of therapeutic relationship with “limited reparenting”, are outlined below.

**Early Maladaptive Schemas**

Central to ST is the concept of an ‘Early Maladaptive Schema’ (EMS), which is a particular type of schema that according to Young (1990) develop through negative experiences in childhood/adolescence which are then perpetuated by subsequent events. Young and colleagues (2003) developed and revised a classification system of EMS that they argued were etiologically related to psychopathology.

EMS originate through the interaction of early life experiences with a child’s temperament and develop through the experience of “unmet core emotional needs in childhood” (Young et al., 2003, p.9). A consequence of basing ST on the patient’s EMS is that there is greater emphasis in treatment on understanding the childhood origins of current problems.

As previously noted, individuals are more vulnerable to developing PTSD as a result of their pre-existing negative core schemas (Bernsten et al., 2012; King et al., 1996). This understanding is also consistent with psychodynamic and cognitive approaches which suggest that development of PTSD symptoms is due to an individual’s maladaptive defences or core schemas (Price, 2007). From a psychodynamic model, individuals with immature ego defences will develop PTSD after a traumatic event because they have not developed effective strategies for coping with distressing experiences (Levy, 2000). Similarly, cognitive models suggest that an individual’s ability to process trauma material effectively will be impaired due to their pre-existing rigid schemas (Brewin & Holmes, 2003). Indeed, within ST, EMS influence perception and meaning attached to trauma experiences (Vaile Wright, Collinsonworth, & Fitzgerald, 2010).
EMS develop when there is a perceived threat to the individual’s basic needs which are viewed as the sense of connection with others, or that they are competent/capable, or that they are resilient and/or safe. When these core needs are not met, the individual may develop a maladaptive coping style in response to the threat of this basic need. Young categorised the coping styles into three groups corresponding to the three basic threat reactions of avoidance (flight), overcompensation (fight) and surrender (freeze). For example, patients with PTSD related to interpersonal trauma may show a schema of mistrust/abuse, meaning that they are convinced that others will betray or abuse them or treat them badly. If the individual’s mistrust/abuse schema is activated, it can lead to strong aversive emotions which they may express with one of the three coping strategies: If a patient tries to avoid their schema, they might avoid relationships altogether or not open up and trust others. This way they cannot be hurt, thus painful emotions do not arise. If a patient overcompensates, meaning they do the opposite of the schema, they might mistreat others. This way they feel strong and in control, instead of weak. If a patient surrenders or gives in to the schema, they may have relationships with abusive partners, thus repeating history. Although this leads to emotional pain, it might somehow feel familiar for patients. Each of these coping styles further exacerbate the schema.

Mode Concept

A schema mode is a combination of an individual’s EMS, coping strategies and emotional state, activated in the present moment. Unlike EMS, modes can change very quickly and can be both adaptive and maladaptive (Young et al., 2003). Lobbestael, Vreeswijk, and Arntz (2007) described the four broad categories of schema modes: Type one is the child modes including the vulnerable, angry, impulsive or happy child. These modes are representative of a patient’s early childhood environment and whether or not their needs were met. Type two is the dysfunctional coping modes, detached protector, compliant surrender or overcompensator. These align with the aforementioned schema coping styles and represent how the patient adapted to their harmful childhood environment in which their needs were not met. Type three is the dysfunctional parent modes, punitive/critical or demanding parent, and are the internalisation
of the parental figures in the patient’s childhood. Type four is the healthy adult, which is the functional mode, able to meet basic emotional needs.

Indeed, there is also similarity with schema modes and specific post-traumatic symptomatology. For example, angry child (irritability and outbursts of anger), impulsive child (reckless or self-destructive behaviour) and detached protector (avoidance). The primary goal of ST is to help the patient to find better ways to get their needs met in their everyday life and to change EMS (Young, 1990). With respect to the mode model there are mode-specific goals, however, overall the aim is to enhance the healthy modes and weaken the maladaptive modes which would thereby target PTSD symptoms (Young et al., 2003).

Use of Experiential and Emotion-Oriented Techniques

In ST there is an emphasis on stimulating affect in session through experiential techniques such as imagery and chair work (Arntz & Weertman, 1999; Young et al., 2003). In Imagery Rescripting (ImRs) an emotionally disturbing situation, such as a traumatic memory, is imagined and the course of the event is changed to a more desired ending (Arntz, 2012). Through the process of rescripting events and meeting the needs of the patient, it can lead to fundamental schema change and reduction of trauma symptoms (Arntz & Weertman, 1999). Chair dialogues are used often in schema mode work. The patient will swap to a different chair that resembles a mode as it arises in session (Fassbinder, Schweiger, Martius, Brand-de Wilde, & Arntz, 2016). From the different perspective, they are asked to identify with the emotions and thoughts of that mode (Lobbestael et al., 2007). The therapist will encourage the patient to express their feelings or needs and may model this to patient. The goal of chair work is to help patients understand, experience and restructure modes (Fassbinder et al., 2016).

Common to many psychotherapies for PTSD is emotional processing of traumatic experiences and changing the meaning of events. Many researchers have advocated for some level of exposure to traumatic events while providing corrective information (Resick et al., 2008; Schnyder et al., 2015). For example, emotional processing in the context of prolonged exposure is understood as modifying memory structures to address underlying emotions. This approach for treatment activates the fear structure, an affective memory, and then incorporates information which is incompatible with the fear structure (Foa & Kozak,
This is consistent with the emotion-oriented strategies that are used as in ST whereby corrective emotional experiences are provided through “limited reparenting” and experiential techniques. In addition, trauma material is reprocessed to change meaning of experiences (Young et al., 2003).

The experiential techniques often used in ST trigger intense unpleasant emotions in patients (Young et al., 2003). Patients with CPTSD in particular, have intense fear of intrusive trauma memories and their associated feelings, that they try to avoid triggers and often emotions in general (Foa & Kozak, 1986; Schnyder et al., 2015). Therefore, another aim of ST is that patients experience emotions in a safe way without being overwhelmed (Fassbinder et al., 2016). In ImRs for example, it is not necessary that the patient relieves the whole traumatic experience in detail. It suffices, if the traumatic memory is activated and the patient clearly feels the trauma-related emotions and needs (Arntz & Weertman, 1999). The major aim of ImRs in ST is not exposure with habituation and extinction, but the changing of the meaning of the trauma (Arntz, 2012).

**Therapeutic Relationship**

A central assumption in ST is that EMS arise when the core emotional needs of the child were not met. Thus, the therapeutic relationship has been specifically designed as “limited reparenting”. Here, the therapist, to the limited extent of a professional therapeutic relationship, acts as if they were a “good parent figure” and provides a corrective emotional experience. For example, if the patient suffered from emotional deprivation, then a focus in therapy would be on providing nurturance both in session and through reconstructions of childhood memories (Young et al., 2003).

Young et al. (2003) described two main components to limited reparenting. The first component is characterized by support, attention, validation and praise. Here the therapist overtly provides warm and caring responses to the patient and may use appropriate self-disclosure or transitional objects as a way to enhance the therapeutic relationship. The second component is empathic confrontation and limit setting, where the therapist “empathically confronts” the patients’ maladaptive behaviours and encourages change. In the case of PTSD, the therapist often empathically confronts avoidance behaviours and works to meet the needs of the patient. A key notion of limited reparenting is that over time the patient is able to
therapeutically “internalise” the therapist and for it become a part of the patients’ own “healthy adult” (Arntz & Jacob, 2012). As a result, they become compassionate of self, can tolerate strong affect and are increasingly psychologically resourced (Young et al., 2003).

More recently there has been a greater emphasis on the relational approach to treatment of trauma based on advances in our understanding of interpersonal neurobiology and attachment (Pearlman & Courtois, 2005; van der Kolk, 2005). ST is deeply rooted in interpersonal processes where the therapy relationship is a core driver of change. It aims to help patients have emotional needs met in their adult life and within the therapy relationship (Rafaeli, Bernstein, & Young, 2011; Young et al., 2003).

The key unique aspects of ST are well illustrated by the following case study.

Case Study of Bob

General background

Bob, a 49-year-old Custodian Officer, worked at a juvenile detention centre and was referred for treatment of PTSD. Two years’ prior, some detainees at the detention centre were involved in a fight and Bob was required to supervise the transport of one of the offenders in the back of an ambulance. During the transport the patient became aggressive and one of the ambulance officers sustained a needle-stick injury. Although Bob was not directly infected, he believed that the patient was Hepatitis C positive. Bob clearly saw this event as a threat to his physical integrity and felt powerless at the time as the person was essentially unrestrained. Bob returned to work after this event but he reported feeling more vulnerable.

Three months later he was physically injured during an attempted restraint on another detainee. The injury included a fracture, which later required surgery. Bob attempted a return to work after this incident but only lasted one week. Twelve months after the injury he received 16, one and a half hour sessions of traditional exposure-based therapy for PTSD that included imaginal and in vivo exercises. However, Bob’s symptoms did not improve. His score on the Impact of Events Scale (IES; Weiss & Marmar, 1997) ranged from 58 at the initial session, to 49 after session eight, to 53 at his final session. Bob avoided many situations where he felt vulnerable, such as crowded places (shopping centres and public transport), and social situations where he might run into his work colleagues.
A problem with his previous therapy appeared to be that although he often agreed to attempt in vivo tasks as part of the treatment hierarchy, when it came to confronting his fears he felt that he was “not strong enough”. At the initial session he admonished himself on several occasions for being “weak”. He had intrusive images of the assault and also of breaking down when he attempted a return to work in the week after the second incident. Prior to the assault Bob described himself as someone who never paid much attention to emotions. He expressed disgust at how “pathetic” he had become.

**Case example - Developmental focus**

In keeping with ST, given that Bob’s PTSD was now a chronic condition, attention was paid to his developmental history. He described his mother as a very dependent person who suffered from anxiety. Bob’s father left his mother before he was born and she had a number of relationships where according to Bob, she was generally treated badly. From when Bob was nine years old, his mother began living with a de facto partner who was physically and emotionally abusive towards him. During the emotional abuse he would often taunt Bob with “you are not a man” and “you’re pathetic”. Understanding this case from the developmental perspective perhaps explains Bob’s vulnerability to this event in that his childhood experiences led him to beliefs of being weak and pathetic. This history is likely to account for his inability to tolerate the negative affect, which accompanies traditional exposure therapy.

**Case example - The assessment of schemas**

Bob was administered the Young Schema Questionnaire (YSQ; Young & Brown, 1994). He obtained the highest scores on the defectiveness/shame and vulnerability to harm schemas. This is consistent with his experiences of abuse in childhood, his perceived lack of safety and his self-view as pathetic and weak. It is typical in ST that congruence is sought between the YSQ scores, interview behaviour and developmental history. Bob’s presentation in the first session where he admonished himself for his failure to recover from the event was consistent with the history of feeling shame in childhood and at work, and his scores on the YSQ. Therefore, in keeping with the developmental focus, the trauma targeted in therapy was not the recent event but the first experience of considering himself to be weak and pathetic.
Case example – Mode work

Three modes were identified as relevant for Bob. These were vulnerable child, punitive parent and detached protector. Vulnerable child is the mode that represents Bob’s early childhood environment and his unmet needs. In this mode he felt sad, lonely, weak and helpless. This mode was a core target of the intervention. In punitive parent mode, Bob would be critical of all his efforts and wanted to punish himself for being weak. When overwhelmed by situations, Bob would switch to detached protector mode to emotionally distance himself. Here he reported a general sense of numbness and tended to agree with whatever others were asking of him, be it therapist, rehabilitation provider or medical specialist. The switches between modes were identified and a more nurturing and encouraging response was fostered by the therapist. Imagery was used to assist Bob to argue against the perspective associated with the punitive parent and to emphasise support for Bob using the image of his Grandmother, who was very caring and loving. Thus, Bob began to notice between sessions when he was admonishing himself for his weaknesses and began to regularly imagine his grandmother’s more nurturing voice and ideas.

Case example - Emotional processing

Bob was asked to close his eyes and recall a memory of when he was made to feel weak and pathetic by his mother’s de facto partner. Bob was instructed that he did not need to go to the worst part of the memory, but to the point where he felt unsafe and helpless. At this point in the ImRs, the therapist entered the image and addressed the needs of child Bob to feel safe, protected and nurtured. The therapist expressed anger towards the partner for saying those things to Bob, “How dare you call him weak” and the failure of his mother in not taking better care of him, “Mothers are supposed to love and protect their children”. The therapist then provided comfort to child Bob by telling him it was not his fault. In the second ImRs session, Bob was provided with further corrective information and his feelings of helplessness as a child were validated. The therapist, in the imagery, also affirmed that he has courage and strength. Interestingly after only two sessions of ImRs on this childhood event, his score on the IES decreased from 55 to 38, despite the fact that the target event assessed in his IES was the adult trauma event. It appears
that the improved response to the childhood trauma generalised to the recent trauma since they both involved the same underlying EMS.

**Case example - Therapeutic relationship nurturing**

In the therapeutic relationship, it was essential to monitor Bob’s response to the therapist’s interventions. It became quickly apparent that he was highly sensitive to shame, as expected given his defectiveness/shame schema. If he did not complete all aspects of a homework task, he would present in the next session extremely anxious and even whilst receiving feedback that his attempt was good enough, appeared incapable of receiving this information, convinced his efforts were deplorable. In the emotion-oriented techniques, the therapist needed to provide extensive nurturing and comfort, praise and acceptance for mistakes. In the imagery based intervention, considerable time was spent having Bob imagine himself as an adult physically soothing the child who received the physical abuse.

**Case example - Therapeutic relationship and empathic confrontation**

After 10 sessions, which included understanding Bob’s difficulties from a ST perspective, reprocessing early childhood experiences using experiential techniques and the recognition/reparenting of mode responses, his score on the IES was 32. This represented a substantial decrease (55 at baseline), in contrast to the lack of any symptom improvement using standard exposure therapy. At this point an active confrontation of Bob’s PTSD-related avoidance behaviour began. This is consistent with ST where behavioural confrontation often occurs later in the course of treatment (Young et al., 2003). Empathic confrontation, a part of limited reparenting, was used to help Bob work on his trauma experiences. Bob was accompanied by his therapist for the first two sessions and then simply reported back to the therapist about his self-directed exposure for the next two. He reported using the same emotional soothing strategies (grandmother’s voice), that he had successfully used previously to deal with his adverse childhood experiences, enabled him to complete exposure to crowds and shopping centres, and he even returned to his workplace. The score on the IES reduced to 22. Bob was followed up monthly for the next six months and reported that he had retrained as a paramedic and had begun working in a half-time
position. He stated that the therapy was more than just helpful in reducing his trauma experiences, it also represented a substantial change in how he now viewed himself.

**The Efficacy of Schema Therapy for PTSD**

There is a paucity of research investigating the efficacy of ST for PTSD. One study compared ST to traditional CBT in the treatment of PTSD (Cockram, Drummond, & Lee, 2010). In this study both treatments were delivered using standardized manuals. The 54 war veterans who completed ST had statistically significant improvements on measures of PTSD and anxiety compared to the 127 who received CBT. The comparison was not randomized with the CBT treatment functioning as an historical control. Nevertheless, on all symptom measures the two groups were equivalent pre-treatment.

**Evidence for Using a Developmental Focus in Treatment**

The research supports that negative childhood experiences are associated with poorer treatment outcomes. A meta-analysis conducted by Nanni and colleagues (2012) investigated the impact of childhood maltreatment on depression. They found that individuals with a history of maltreatment in childhood were more likely to develop depressive episodes which were both recurrent and persistent. Additionally, those individuals were less likely to benefit from treatment. Their recommendations suggested that inquiry into previous traumas, specifically childhood experiences, could be beneficial when planning appropriate interventions (Nanni et al., 2012).

Assessment and treatment planning from a developmental perspective has also been supported by other researchers. In a study examining the trajectories for post-traumatic symptoms in Danish soldiers, Bernsten et al. (2012) found predeployment traumas especially in childhood and emotional problems were predictors of development of PTSD and that deployment related stress was not a factor. A central factor critical to the development of PTSD was interpersonal violence experienced in childhood.

**Evidence for The Usefulness of Schema and Mode Construct in Therapy**

Research to date supports the reliability and validity of the classification system of schemas developed by Young and Brown (1994). The YSQ, developed as a measure of EMS has been shown to have a stable factor structure in clinical samples (Hoffart et al., 2005). Research has supported that knowledge of
schema themes helps guide treatment and facilitates processing of trauma experiences e.g. Vaile Wright et al. (2010). In addition, the identification of EMS as part of therapy has been shown to improve treatment outcomes. For example, Cockram et al. (2010) found that by addressing EMS as part of treatment had a positive effect on PTSD and anxiety symptoms.

Similarly, the mode model provides a way to understand emotional instability or rigidity, and helps provide a therapeutic framework for patients to understand themselves and their coping methods (Lobbestael et al., 2007). Case studies that have focused on using the mode construct in ST have found positive results, for example chronic anxiety, Bamber (2004), and patients diagnosed with borderline personality disorder, Nordahl and Nysaeter (2005).

**Evidence for The Usefulness of Experiential and Emotion-Oriented Techniques in Therapy**

ST places a greater emphasis on experiential and emotion-oriented interventions such as ImRs and chair work with the purpose to identify and challenge EMS on an affective level (Young et al., 2003). There is increasing evidence that processing of negative affect in session enhances treatment outcome. For example, there is research to support the effectiveness of ImRs as part of ST, and more recently as a standalone intervention (Arntz, 2012). Several studies have used ImRs to target negative childhood experiences across disorders such as social anxiety and depression, with promising results (Morina, Lancee, & Arntz, 2017; Wheatley et al., 2007; Wild & Clark, 2011). More specifically, ImRs has been used in studies to treat individuals with complicated war-related PTSD e.g. Arntz, Sofi, and van Breukelen (2013) and PTSD resulting from childhood abuse e.g. Raabe, Ehring, Marquenie, Olff, and Kindt (2015). Both of these studies revealed statistically significant improvements in trauma related symptoms and interestingly, reported low dropout rates.

As Young et al. (2003) describes, the experiential techniques used in ST help patients to move from intellectually knowing the impact of their EMS, to understanding on an emotional level. Moreover, the eliciting of affect during sessions through processing traumas, empathic confrontation and limited reparenting helps patients to learn to experience and manage their emotions (Fassbinder et al., 2016). This
understanding is supported in other therapies using similar techniques such as emotion-focused therapy (Greenberg, 2011)

**Therapeutic Relationship**

Different therapeutic orientations appear to influence the nature of the therapy relationship. Using the psychotherapy Q Sort, Boterhoven de Haan and Lee (2014) found that psychodynamic therapists valued a neutral relationship, CBT therapists emphasised a didactic interaction, and ST therapists favoured more emotional involvement, paying attention to the patient’s needs and empathic confrontation, otherwise described limited reparenting. ST places a greater emphasis on the therapeutic relationship to assist with formulation and as a means of facilitating change. The therapist is direct with care/ nurturance and empathic confrontation, providing a “parent like” figure to the patient (Young et al., 2003). This more active approach has been seen as particularly helpful in treating personality disorders. For example, Spinhoven and colleagues (2007) found the therapeutic alliance in ST was rated higher by both patients and therapists, and had better treatment outcomes compared to transference focused psychotherapy. Furthermore, the use of ST has shown reduced treatment dropout rates for a range of presentations (Bamelis, Evers, Spinhoven, & Arntz, 2014; Giesen-Bloo et al., 2006).

**Conclusions and Directions for Future Research**

The purpose of this article was to explore the potential for adopting a ST approach in the treatment of PTSD. This article has described the core components of ST highlighting the use of assessment of schemas and a developmental perspective to guide treatment, schema modes, the use of experiential and emotion-oriented techniques, and an increased focus on the therapeutic relationship.

PTSD is often seen as a chronic condition. In many cases, adverse childhood trauma experiences can mediate the effect of adult trauma on symptom development, or in the case of complex PTSD, these childhood experiences are typically central to the condition. In more simple cases of PTSD where there are no apparent effects of prior childhood experiences on the development of the symptoms, a schema approach is not indicated. ST holds promise in the treatment of PTSD and complex PTSD, since EMS can have an influence on the development and maintenance of this disorder. Furthermore, the use of the
experiential techniques and the therapeutic relationship and its limited reparenting, facilitate processing of affect and meeting the unmet needs of the patient. As was demonstrated in the case of Bob, understanding his early childhood experiences and targeting those as part of treatment, this was able to reduce his trauma related symptoms where other treatments had been unsuccessful.

Nevertheless, besides one pilot study, there is a paucity of research evidence for the application of ST with PTSD and complex PTSD. Future research should explore the efficacy and effectiveness of ST and also compare it to other traditional treatments for PTSD such as trauma-focused CBT. Further, an area of needed research is to try to assess which clients are most likely to benefit from ST. Studies are most needed that determine whether variables representing ST constructs, such as the presence of modes, severity of EMS, or type of schema maintenance behaviours are related to outcome.

The studies reviewed support the reliability and validity of the main constructs of ST, schemas and modes, and provide preliminary evidence for the effectiveness of the unique components of ST described here. Research into the use of the experiential techniques utilised in ST, specifically ImRs has shown good outcomes for the treatment of complex PTSD. Taken together, ST may be considered as a promising method for the treatment of PTSD and complex PTSD however there is limited research into this area. Future studies for ST would be warranted.
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Chapter 4: Treating Childhood Trauma Efficiently: The Case for Imagery Rescripting and Eye Movement Desensitisation and Reprocessing
Treating Childhood Trauma Efficiently: The Case for Imagery Rescripting and Eye Movement Desensitisation and Reprocessing

The recent acknowledgement and inclusion in the diagnostic classifications about more complex forms of post-traumatic stress disorder (PTSD) such as adults with childhood trauma-related PTSD (Ch-PTSD) has created controversy around best practice for treatment. The psychopathology of Ch-PTSD and the impact of the developmental age at the time of the trauma is considered to be detrimental to the effectiveness of recommended trauma-focused treatments (Dorrepaal et al., 2014; Karatzias et al., 2019). There is also ongoing evidence regarding the poor utilisation of evidence-based treatments particularly prolonged exposure approaches in everyday clinical practice (van Minnen, Hendriks, & Olff, 2010). To counteract these issues, phase-based treatments have been promoted as approaches to meet the specific needs of the Ch-PTSD population; however, they have been criticised for preventing individuals from receiving appropriate treatment for their childhood trauma experiences (Bohus et al., 2019; de Jongh et al., 2016). This suggests that further research is needed to investigate other approaches that will help facilitate individuals getting treatment for their childhood trauma in a timely manner. Given that individual trauma-focused interventions have the most evidence in their favour, and are supported in treatment guidelines, it would seem appropriate to explore other treatments of a similar nature (Ehring et al., 2014; National Institute for Health and Care Excellence [NICE], 2018). Furthermore, it would also seem appropriate to explore alternative trauma-focused treatments that effectively treat PTSD and the additional symptoms associated with childhood trauma experiences. Therefore, this chapter presents a rationale for investigating the effectiveness of two trauma-focused treatments: imagery rescripting (ImRs) and eye movement desensitisation and reprocessing (EMDR) for treating Ch-PTSD. These treatments may be especially suited for individuals with Ch-PTSD; however, to date they have not received the empirical research attention that they deserve.

Chapter three explored the effectiveness of schema therapy (ST) for the treatment of a patient with PTSD who did not respond to regular treatment, specifically trauma-focused cognitive behaviour therapy
(Tf-CBT; Boterhoven de Haan, Fassbinder, Hayes, & Lee, 2019). Here, a case study of a man named Bob was used to demonstrate how childhood trauma can moderate the effectiveness of evidence-based treatments for PTSD (Karatzias & Cloitre, 2019). For Bob, even though he presented for trauma experienced in adulthood, the etiology of his presentation was related to adverse childhood experiences. By modifying the treatment through a developmental perspective, and incorporating experiential techniques to address his negative early life experiences, it helped improve treatment effectiveness and outcome (Lee & Boterhoven de Haan, 2020).

A main component of ST is the use of experiential techniques to reprocess traumatic experiences and for patients to have a corrective emotional experience (Jacob & Arntz, 2013; Young, Klosko, & Weishaar, 2003). For Bob, two sessions of ImRs, where the therapist confronted his abusive step-father and his mother in failing to protect him, were followed by a significant reduction in his PTSD symptoms. Given that the adult trauma and the childhood trauma involved the same underlying schema, by addressing his childhood trauma and meeting the needs of child Bob, the effects of the ImRs generalised to his adult trauma experiences.

**Imagery Rescripting for Ch-PTSD**

ImRs has long been a component of cognitive behaviour therapy (CBT) and ST and has been found to be effective for treating mental imagery that is traumatic or intrusive in nature (Arntz & Weertman, 1999; Holmes, Arntz, & Smucker, 2007). More recently, the trauma-focused approach of ImRs has been used as a stand-alone intervention for treating complex forms of PTSD and chronic disturbances caused by childhood experiences, with good outcomes (Arntz, 2012; Raabe, Ehring, Marquenie, Olff, & Kindt, 2015).

In ImRs, patients are asked to recall a memory or event in as much detail as possible in present tense from the child perspective. They are then guided to imagine a different course of events that is more acceptable and helps to meet the needs of the child, such as someone intervening and protecting the child from abuse (Arntz & Weertman, 1999; Wild, Hackmann, & Clark, 2007). During the rescripting, patients are asked to describe what is happening in the scene as their child-self, including what they are thinking, feeling, and most importantly, what they need. By rescripting trauma experiences, patients are afforded
the opportunity to identify and express unmet needs or reactions which, for whatever reason, were repressed at the time of the traumatic event (Arntz, Tiesema, & Kindt, 2007; Hackmann, 2011). The imagining of a different course of events serves to alter the meaning of the trauma and contributes to fundamental changes in core belief systems (Arntz, 2012; Arntz & Weertman, 1999).

Although limited at this time, preliminary evidence supports the effectiveness of ImRs for treating patients with chronic or complicated PTSD (Arntz, 2012; Morina, Lancee, & Arntz, 2017). One study by Arntz and colleagues (2007) combined ImRs with imaginal exposure (IE) to treat a population with chronic PTSD. Results showed significant reductions in PTSD in both conditions; however, there were greater effects on emotions such as anger, hostility, and guilt for participants in the combined condition. There was also less dropouts for the combined group (25%) compared to those in the IE-only condition with (51%). Interesting to note, therapists in this study reported a preference for the combined IE + ImRs condition as they felt less helpless in comparison to IE only. There are some studies that have demonstrated the effectiveness of ImRs as a stand-alone intervention reporting reductions in PTSD symptoms often with gains being maintained long term (Arntz, Sofi, & van Breukelen, 2013; Raabe et al., 2015). One pilot study investigated the effectiveness of ImRs for the treatment of individuals with childhood trauma before 15 years of age (Raabe et al., 2015). This study did not include any prior stabilisation, yet found significant decreases in patient PTSD symptom severity at post-treatment and follow up, with 75% of participants no longer meeting PTSD criteria 3 months after treatment. This study also had a dropout rate of 20% which is below the average of 22% found in a meta-analysis of treatments for childhood abuse (Ehring et al., 2014).

The effectiveness of ImRs in treating disorders with origins in childhood such as depression, bulimia nervosa, social anxiety, and simple phobias has also been demonstrated in several studies (Brewin et al., 2009; Cooper, Todd, & Turner, 2007; Hunt & Fenton, 2007; Wheatley et al., 2007; Wild & Clark, 2011). In addition, a meta-analysis on the effectiveness of ImRs found large effects from pre to post treatment and follow-up in reducing symptoms. Further, ImRs were found to have large effects for addressing aversive imagery, encapsulated beliefs, and comorbid depression (Morina et al., 2017).
ImRs may be especially suitable for treating Ch-PTSD. First, ImRs limit exposure to traumatic material (Arntz, 2012). During processing, patients are initially instructed to focus on aspects of the trauma memory including sights, sounds, thoughts, and feelings. They are then asked to identify what they need and the event is then rescripted to a more desired ending. Second, ImRs is based on addressing feelings on an emotional level in direct contrast to other treatments i.e. cognitive therapy which work on reason and logic. It has therefore been shown to be more effective in treating other emotions associated with trauma such as guilt and shame which are common in Ch-PTSD (Arntz et al., 2013; Arntz & Weertman, 1999). Third, the relational approach of ImRs by having either the therapist or the patient as their adult-self meeting the needs of the child is considered especially suited to Ch-PTSD where trauma experiences are often interpersonal in nature and where trust has been violated. As a result of this relational approach, the patient indirectly develops their interpersonal functioning skills by learning more appropriate ways of interacting with others (Arntz, 2011, 2012). Fourth, the intervention approach used in ImRs with the therapist initially meeting the patients’ needs helps to model appropriate responses to the child which is then internalised by the patient. This is then rehearsed when the patient, as their adult-self, meets the needs of the child-self (Arntz, 2011). This last stage has been suggested to help patients develop their emotional awareness and build their self-efficacy through meeting their own needs (Arntz & Weertman, 1999).

Despite these promising findings, there is still a paucity of research investigating the effectiveness of ImRs, particularly randomised clinical trials (Arntz, 2012; Morina et al., 2017). All things considered, research has demonstrated the effectiveness of ImRs for treating PTSD and disorders with childhood origins; thus, it would seem pertinent to consider ImRs as a possible treatment for Ch-PTSD.

EMDR is another treatment that warrants further investigation. Despite it being an evidence-based treatment for PTSD, and there being some preliminary evidence for its effectiveness in treating Ch-PTSD, it has for the most part been largely neglected (Chen et al., 2018). EMDR may be especially suited for treating Ch-PTSD as it directly targets trauma memories and does not require intensive reliving of trauma.
experiences thus potentially being more acceptable to both patients and therapists (Cook, Biyanova, & Coyne, 2009; Lee, Taylor, & Drummond, 2006)

**Eye Movement Desensitisation and Reprocessing for Ch-PTSD**

There are several reasons to suggest that EMDR would be particularly suited for treating Ch-PTSD. First, EMDR limits exposure to traumatic material. While the patient is initially encouraged to focus on the trauma memory, after each set of eye movements they are then encouraged to focus on different aspects that arise. This alleviates the need for prolonged reliving of trauma experiences (Rogers & Silver, 2002; Shapiro, 2001). Second, the dual attention focus of EMDR helps to avoid the extremes of physiological arousal. In fact, one of the mechanisms of EMDR is the distancing from a trauma. During EMDR, processes such as the eye movements, or the use of metaphors by the therapist, help to create distance from trauma memories (Lee et al., 2006). The distancing and free association aspects of EMDR may also be more beneficial for therapists as they do not have to be exposed to the prolonged reliving of the trauma thus reducing the potential for vicarious trauma (Jeffries & Davis, 2013; Lee et al., 2006). Third, the initial preparation components of EMDR include teaching patients’ self-control and coping skills so that they can tolerate any distress that is caused during trauma reprocessing (Korn, 2009; Shapiro, 2001). These skills can also be further strengthened with additional resource development and installation protocols which would help build patients’ ego-strength and distress tolerance capacity particularly for more emotionally dysregulated clients (Korn & Leeds, 2002; van der Hart, Groenendijk, Gonzalez, Mosquera, & Solomon, 2013).

**Can We Treat Trauma Straight Away?**

In the instance of patients with Ch-PTSD, adverse childhood experiences are central to this condition and, therefore, reprocessing of childhood trauma should be considered an essential component of treatment (van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005). As discussed in chapter one, in the case of Ch-PTSD there is the assumption that treatment will be more difficult due to the aetiology and psychopathology of this disorder. Despite these perceived contraindicators, there is growing evidence to indicate that it is possible to treat trauma directly in Ch-PTSD presentations without any modifications to
treatments (Chen et al., 2018; Ehring et al., 2014). In fact, there are several studies that have utilised intensive treatment approaches, i.e. twice a week or daily. These have produced good outcomes finding less treatment dropouts which is suggested to be related to patients experiencing reductions in symptoms quicker (Hendriks, de Kleine, Broekman, Hendriks, & van Minnen, 2018; Wagenmans, van Minnen, Sleijpen, & de Jongh, 2018).

The recommended treatments for PTSD include Tf-CBT and EMDR. However, there is also well-documented issues with poor treatment implementation, particularly in interventions that use prolonged exposure strategies which is a component of Tf-CBT approaches (NICE, 2018; van Minnen et al., 2010; World Health Organization [WHO], 2013).

In the context of developing best-practice trauma-focused treatments for Ch-PTSD, EMDR and ImRs seem particularly well suited to meeting the needs of this population. Both treatments limit the exposure to traumatic memories thereby making them less distressing for patients and potentially more likely to be implemented by therapists in clinical real-world settings. So not only might they reduce client burden, but they might result in more patients receiving treatment that targets their trauma leading to improved treatment outcomes. However, to date, there have been no randomised clinical trials investigating ImRs for Ch-PTSD and there is a dearth of research for EMDR with this population. With this in mind, the next two chapters introduce IREM, a randomised international multi-centre clinical trial investigating the effectiveness of ImRs and EMDR for treatment of Ch-PTSD. Chapter five outlines the design of the IREM trial and chapter six reports on the outcomes of this research.
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Chapter 5: Imagery Rescripting and Eye Movement Desensitisation and Reprocessing for Treatment of Adults with Childhood Trauma-Related Post-Traumatic Stress Disorder: IREM Study Design

Abstract

Background: Post-traumatic stress disorder (PTSD) that originates from childhood trauma experiences can develop into a chronic condition that has lasting effects on an individual’s functioning and quality of life. While there are evidence-based guidelines for treating adult onset PTSD, treatments for adults with childhood trauma-related PTSD (Ch-PTSD) are varied and subject to ongoing debate. This study will test the effectiveness of two trauma-focused treatments, imagery rescripting (ImRs) and eye movement desensitisation and reprocessing (EMDR) in participants with Ch-PTSD. Both have been found effective in treatment of adult PTSD or mixed onset PTSD and previous research indicates they are well-tolerated treatments. However, we know less about their effectiveness for treating Ch-PTSD or their underlying working mechanisms.

Methods: IREM is an international multicentre randomised controlled trial involving seven sites across Australia, Germany and the Netherlands. We aim to recruit 142 participants (minimum of n = 20 per site), who will be randomly assigned to treatment condition. Assessments will be conducted before treatment until one-year follow-up. Assessments before and after the waitlist will assess change in time only. The primary outcome measure is change in PTSD symptom severity from pre-treatment to eight-weeks post-treatment. Secondary outcome measures include change in severity of depression, anger, trauma-related cognitions, guilt, shame, dissociation and quality of life. Underlying mechanisms of treatment will be assessed on changes in vividness, valence and encapsulated belief of a worst trauma memory. Additional sub-studies will include qualitative investigation of treatment experiences from the participant and therapists’ perspective, changes in memory and the impact of treatment fidelity on outcome measures.

Discussion: The primary aims of this study are to compare the effectiveness of EMDR and ImRs in treating Ch-PTSD and to investigate the underlying working mechanisms of the two treatments. The large-scale international design will make a significant contribution to our understanding of how these treatments address the needs of individuals with Ch-PTSD and therefore, potentially improve their effectiveness.

Trial Registration: Australian New Zealand Clinical Trials Registry ACTRN12614000750684. Registered 16 July 2014.
Keywords: Post-Traumatic Stress Disorder; Childhood; Imagery Rescripting; Eye Movement Desensitisation and Reprocessing; Treatment
Imagery rescripting and Eye Movement Desensitisation and Reprocessing for Treatment of Adults with Childhood Trauma-Related Post-Traumatic Stress Disorder: IREM Study Design

Trauma-focused cognitive behaviour therapy (Tf-CBT) and eye movement desensitisation and reprocessing (EMDR) have been identified as the most efficacious post-traumatic stress disorder (PTSD) treatments (World Health Organization [WHO], 2013). Compared to other treatment modalities such as pharmacotherapy, and to non-trauma-focused approaches, EMDR and Tf-CBT interventions have been identified as more effective at reducing PTSD symptom severity (Bisson, Roberts, Andrew, Cooper, & Lewis, 2013; Seidler & Wagner, 2006). However, the studies from which these treatment recommendations were based, predominantly used samples with adult-onset PTSD, resulting in an underrepresentation of participants with more complex presentations (Ehring et al., 2014; Spinazzola, Blaustein, & van der Kolk, 2005). The research on treatments for one such group, adults with childhood trauma-related PTSD (Ch-PTSD), has suggested that this population is difficult to treat due to the additional symptom complexity that can develop as a consequence of early trauma experiences (Cloitre, 2015; Courtois & Ford, 2009).

Three main approaches for treatment of Ch-PTSD were outlined by Ehring and colleagues (2014). One approach suggests that the aim of treatment should be on improving functioning through skill building, rather than focusing on trauma reprocessing (Dorrepaal et al., 2012; Wolfsdorf & Zlotnick, 2001). Secondly, there is the phase-based approach which incorporates skill building with trauma reprocessing techniques such as prolonged exposure (Bohus et al., 2013; Cloitre et al., 2010). The third approach uses trauma-focused treatments without any modifications to protocol (Edmond, Rubin, & Wambach, 1999; Resick, Nishith, & Griffin, 2003). Treatments are categorised as trauma-focused when they specifically target processing of trauma memories and their meaning (Bisson et al., 2013; de Jongh et al., 2016).

A meta-analysis on psychological treatments for Ch-PTSD, identified individual trauma-focused treatments as being more efficacious than non-trauma-focused approaches (Ehring et al., 2014). Individual trauma-focused treatments were found to be more effective in reducing PTSD symptom severity and additional symptoms associated with Ch-PTSD such as depression, anxiety and dissociation. Moreover, the
findings also supported the view that increased levels of symptom complexity are probably not a contraindication for trauma-focused treatment. Nevertheless, there is reluctance by many therapists to engage in trauma-focused treatments as a first-line approach for individuals with Ch-PTSD (Cloitre et al., 2012; van Minnen, Arntz, & Keijsers, 2002).

There is much debate regarding the appropriateness of trauma-focused interventions and some have argued that treatments which primarily focus on trauma reprocessing, are inappropriate for the Ch-PTSD population (Cloitre et al., 2011; Dorrepaal et al., 2010). The argument is mostly based on the perception that individuals with Ch-PTSD only have a limited capacity to cope with the distress of focusing on their trauma experiences during treatment, while remaining physically, psychologically and emotionally intact (Wolfsdorf & Zlotnick, 2001). Indeed, some studies have reported dropout rates of up to 41% e.g. McDonagh et al. (McDonagh et al., 2005), which many attribute to the more complex symptom presentations often found in individuals with Ch-PTSD (Cloitre et al., 2011; Dorrepaal et al., 2012). However, these findings have predominantly been in studies that incorporated prolonged exposure as a component of treatment (McDonagh et al., 2005; van Minnen, Hendriks, & Olff, 2010). This suggests the need to explore alternative trauma-focused approaches for treatment of Ch-PTSD.

Other trauma-focused treatments such as EMDR and Imagery Rescripting (ImRs) have been proposed for Ch-PTSD (Arntz, 2012; Edmond & Rubin, 2004). EMDR and ImRs share similarities with prolonged exposure techniques by activating imagery, emotions and cognitions related to the trauma memory and providing corrective information. The difference with these treatments is that they do not require intensive and prolonged reliving of traumatic experiences to enact symptomatic reductions (Arntz, Tiesema, & Kindt, 2007; Rogers & Silver, 2002).

EMDR asks individuals to recall their trauma experience in their mind while at the same time tracking the back and forth movement of the therapist’s finger (Lee, Taylor, & Drummond, 2006; Shapiro, 2001). This dual attention focus facilitates reconsolidation of the original trauma memory so that it is less vivid and less distressing (Rogers & Silver, 2002). The precise mechanism by which EMDR appears to facilitate trauma processing is unknown (Lee & Cuijpers, 2013). There have been several theories proposed,
however a more recent explanation for the underlying mechanisms of EMDR which has received the most empirical support is, the working memory theory (van den Hout & Engelhard, 2012). This theory postulates that eye movements tax the capacity of the working memory, thereby making the trauma memory less vivid and consequently, difficult for individuals to maintain the traumatic experience with the same degree of emotional distress (Andrade, Kavanagh, & Baddeley, 1997; Leer, Engelhard, & van den Hout, 2014).

Given that EMDR is an evidenced based treatment for PTSD, surprisingly there are only a limited number of studies examining its effectiveness for treating Ch-PTSD (Edmond et al., 1999; Korn & Leeds, 2002). In one study of adults who had been sexually abused as children, EMDR significantly reduced PTSD symptom severity at post-treatment and at 18-month follow-up (Edmond & Rubin, 2004). Another study of traumatised young women found both the EMDR and active listening conditions resulted in significantly improved scores on measures of PTSD, depression, anxiety and self-concept. More interestingly, the EMDR group improved to within one standard deviation of the mean of the general population norms on all measures and the pre-post treatment effect sizes were almost double that of the active listening condition (Scheck, Schaeffer, & Gillette, 1998). Thus, in the context of Ch-PTSD, EMDR could make a significant impact on individuals’ capacity to tolerate exposure to traumatic material and potentially improve treatment outcomes (Edmond & Rubin, 2004; Korn, 2009).

ImRs involves the individual imagining a different ending to a trauma experience. Individuals are encouraged to recall a memory in the first person, present tense as their child-self. The memory is then rescripted, by imagining a different course of events, which helps to satisfy the needs of the person (Arntz et al., 2007; Arntz & Weertman, 1999). ImRs aims to facilitate a change in the meaning or reinterpretation of the trauma memory, leading to fundamental shifts in core belief systems and behaviours; and also provides an opportunity for individuals to identify and express responses that were inhibited at the time of the trauma experience (Arntz et al., 2007; Hackmann, 2011). ImRs might be especially suitable for treating Ch-PTSD. For example, it is shown to be particularly efficacious for interpersonal traumas where trust was violated, and it has been shown as more effective than imaginal exposure in treating not just anxiety but
other emotions such as guilt or shame, all of which are common in childhood trauma-related PTSD (Arntz, 2011, 2012).

ImRs research is still in its infancy and there is limited understanding for the underlying mechanisms of this treatment. The predominant explanation is that ImRs works by changing the meaning of trauma event (Arntz, 2012; Hackmann, 2011). Arntz (2012) postulated that a process called UCS-revaluation might underlie ImRs. That is, after the trauma experience is consolidated in memory it is possible to reactivate the experience during ImRs. During the rescripting procedure the memory is re-evaluated so that its dysfunctional meaning changes to a less dysfunctional association, after which the representation is re-consolidated. This leads to less negative-emotional responses when the memory is activated in future. Dibbets, Poort, and Arntz (2011) tested this hypothesis in a classical conditioning study and found evidence that ImRs reduced the return of fear, which usually occurs when an individual is re-triggered with the context associated with the acquisition phase. The observed reduction in return of fear is an indication that the UCS-representation fundamentally changed as to its fear-evoking meaning thru the ImRs procedure. In contrast, a recent study by Slofstra, Nauta, Holmes, and Bockting (2016) reported that a specific focus on manipulating the semantic meaning-relevant content of trauma memories, that is key cognitions or beliefs, was not necessary for ImRs to be effective. Instead, when rescripting focused on only perceptual aspects of trauma experiences, ImRs facilitated reconsolidation of memories and associated emotions.

Notwithstanding, the growing evidence suggests ImRs is an efficacious treatment (Arntz, 2012; Morina, Lancee, & Arntz, 2017). Recent research has also supported its effectiveness in treating complicated PTSD. In one such study ImRs was used to treat refugees and the treatment was found to lead to significant reductions in PTSD symptom severity and depression scores (Arntz, Sofi, & van Breukelen, 2013). More specifically, a recent study for adults with childhood abuse-related PTSD showed that ImRs decreased PTSD related symptoms, all of which were maintained or improved at follow-up assessment. In addition, the dropout was 20%, which could be considered low in comparison to other trauma-focused interventions (Raabe, Ehring, Marquenie, Olff, & Kindt, 2015).
ImRs in the context of adverse childhood memories has been successfully applied to the treatment of disorders such as social anxiety, simple phobias, bulimia nervosa and depression, showing good treatment effects (Morina et al., 2017). Taken together, the evidence supports ImRs as an efficacious treatment for PTSD and for addressing aversive childhood memories.

To date there has only been one study that has directly compared ImRs and EMDR. Alliger-Horn, Zimmermann, and Mitte (2015) compared EMDR and imagery rescripting and reprocessing therapy, a variant of ImRs, in the treatment of soldiers with PTSD. This study reported significant improvements in post-traumatic and comorbid symptoms for both treatments with no significant differences between the two. However, the sample size was small (20 in each condition) and the participants treated had PTSD from adult trauma experiences.

There are theoretical reasons and some preliminary findings to suggest EMDR and ImRs are approaches worthy of further investigation (Arntz, 2012; Korn, 2009). Furthermore, different working mechanisms having been proposed for the two treatments, the reduction of vividness of trauma memories as a primary mechanism in EMDR versus the change in (emotional) meaning of the trauma memory in ImRs. A direct comparison of the two treatments with repeated assessments of vividness, valence, and encapsulated beliefs of a trauma memory will enable a better understanding of underlying mechanisms of action and potential differences of change between the two approaches.

Nevertheless, research interest is growing. However, clinical trials investigating treatments for Ch-PTSD, more specifically trauma-focused approaches are scarce (Ehring et al., 2014). Some have argued that the reluctance of therapists to directly target trauma experiences as a first-line intervention approach, has led to individuals being denied or delayed from receiving appropriate treatment (de Jongh et al., 2016; van Minnen et al., 2010). These factors together highlight the need for investigating treatments, which effectively treat symptoms of Ch-PTSD and are acceptable to individuals and therapists.
This Study

This article describes the study design of IREM, an international, multi-centre randomised clinical trial (RCT) whose primary objectives are to compare the effectiveness of EMDR and ImRs in the treatment of Ch-PTSD and to test whether different mechanisms of change are involved.

A number of additional sub-studies will be performed which include the investigation of participant and therapists’ perspectives of treatment, assessing the effects of treatment integrity, prediction of drop out and changes in how trauma memories are stored following treatment.

Method

Design

An international multicentre RCT will be conducted in Australia, Germany and the Netherlands. Seven sites will participate with one site in Perth, Western Australia; one in Lübeck, Germany; and five in the Netherlands. Ethical approvals were obtained by ethics committees in each country. This trial is registered with the Australian and New Zealand Clinical Trials registry, ACTRN12614000750684 and complies with the World Health Organization Trial Registration Data Set. This RCT adheres to the SPIRIT guidelines and methodology.

Recruitment

Potential participants will be identified and screened at each site when childhood trauma-related PTSD is suspected. Participants will attend an information session where they will be provided verbal and written information of the research project. If they agree to participate they will provide signed informed consent and be formally screened to assess in- and exclusion criteria. Figure 5.1 provides an overview of the study design.
Participants

Male and females aged between 18-70 years of age will be considered eligible if 1) they experienced trauma before 16 years of age and agree that this will be the focus of treatment, 2) PTSD is the primary diagnosis, 3) PTSD symptoms are present for longer than three months and mainly associated to...
the trauma that occurred before the age of 16, 4) they are available to attend treatment sessions twice a week within a six to eight-week period and 5) they are able to understand, read, write and speak the language of the site or English where sites permit. If participants are on any psychological medication it is required, the dose has been stable for three months. The participants have to agree not to engage in any other psychological therapy or have changes in medication from baseline until the eight-week post-treatment assessment.

Participants will be excluded if they have comorbid psychotic disorder, bipolar disorder type 1, alcohol or drug dependence, IQ below 80, acute suicide risk, acute PTSD from trauma within the past 6 months, PTSD focused treatment within the past three months or scheduled to begin another form of PTSD treatment. Current benzodiazepine use is also an exclusion criterion. However, a participant is eligible to participate if they agree to taper off their benzodiazepine medication for their involvement in the study including an additional two-week period before they may begin the assessment process.

Sample Size

At least 142 participants across all sites will be recruited for the RCT. Each site is required to recruit a minimum of 20 participants.

To achieve a between group medium effect size using Cohen’s $d$, with a significance level of .05 (two-tailed), it would require a sample size of $N=128$. To account for estimated dropouts of 10%, the sample size is increased to $N=142$. This number is the total across the sites involved in this research. With the use of mixed regression, taking into account all available data, the actual power will be higher and the standard error will be reduced with the use of covariates.

Randomisation

An independent central research assistant will randomise participants to treatment condition after checking inclusion and exclusion criteria. Randomisation will be based on block randomisation ($n=two$, four and six per block, with block size randomised) per site, to guarantee a balance between conditions per site and over time. Randomisation will be stratified for gender to control distribution per treatment at each site.
Treatments

Treatment will consist of 12, 90-minute sessions twice a week. Treatment is scheduled for completion within a six-week period, however up to eight weeks is permitted. Participants are allowed to complete treatment earlier than the allocated 12 sessions however assessment will be conducted at the planned time points. Earlier termination of treatment requires approval from individual site coordinators.

Treatment Procedure

Session one of the treatment will involve introduction to treatment rationale and planning of treatment sessions. The therapist and participant will develop a record of trauma memories to be targeted during treatment and agree on which memory will be addressed first. The record of trauma memories will be given to the participant to review before the next session.

In the ImRs condition, a pilot rescripting will be conducted in session one so that participants are familiar with the technique. For the EMDR protocol, due to time constraints, there will be no pilot in the first session. Within this condition, the therapist will focus on preparing for processing in session two.

At the beginning of session two, the therapist and participant discuss any changes to the record of trauma memories that were identified. From treatment session two onwards, each session requires trauma reprocessing in the allocated treatment condition.

Treatment sessions are video or audio recorded depending on the site and participant consent. The duration of the session and the number of trauma memories that were addressed during each treatment session are recorded.

The EMDR and ImRs treatments have been operationalized into manuals.

Eye Movement Desensitisation and Reprocessing (EMDR)

EMDR treatment is based on the eight phase protocol outlined by Shapiro (2001). Session one in the EMDR treatment condition will involve procedural preparation and affect tolerance training including a safe place exercise, which is practiced between sessions. The therapist and participant will set up for processing in session two by completing up to phase three of the EMDR protocol (target assessment), and within that only as far as identifying the negative and positive cognition.
Desensitisation will begin in session two where the participant will be asked to focus on the memory, their negative belief, feelings and somatic sensations while they follow the back and forth movement of the therapist’s fingers. Sets continue until the reported distress is decreased to 0 or 1. In the installation phase, the participant is asked to focus on the preferred belief (positive cognition) and the trauma memory while simultaneously engaged in the eye-tracking task. As per the Shapiro (2001) protocol, once the positive cognition is reported as 6 or 7, a body scan is conducted to ensure no unresolved traumatic material. Each session concludes with a debriefing of participants. At the start of each session, the therapist would check processing of the memory that was targeted during the previous session. If the distress reported is 2 or more, processing would continue on the memory. Alternatively, the participant and therapist will select another target memory for processing. In session 12, the therapist would evaluate any current triggers or future oriented events that would need to be desensitised; this may be completed earlier if all trauma memories have been reprocessed in earlier sessions.

Some modifications have been made to the original EMDR protocol to take into account recent literature, e.g. no eye movements in the safe place protocol (Hornsveld, de Jongh, & ten Broeke, 2012). In addition, a restriction has been placed on types of unblocking strategies particularly those using imagery during the interweave to prevent contamination of the treatment condition.

**Imagery Rescripting (ImRs)**

The ImRs treatment is based on the protocol described by Arntz and Weertman (1999). During the rescripting participants are asked to describe the trauma memory in first person, present tense, from the point of view of the child, what is happening in the image, what they are thinking, feeling and most importantly, what they need. They are then guided to imagine a different course of events that is more acceptable for meeting their needs. The first half of ImRs treatment, up to session six, the therapist steps into the image and intervenes, protects and meets the needs of the child. In later phases, from session seven onwards, the participant’s adult-self steps into the image and then rescripts from the point of view of the adult-self. Next the participant re-experiences the rescripting from the point of view of the child, with
the adult intervening. The child is then invited to ask their adult-self for additional actions if there is anything else they would like until all needs have been met.

After each rescripting, the therapist and participant debrief to ensure that all the needs were met. Trauma memories will be rescripted until the participant is satisfied. More than one trauma memory can be rescripted during a treatment session.

**Further treatment**

Evaluation of participants need for further treatment is conducted after the eight-week post-treatment assessment. The kind, intensity and frequency will be determined based on needs of the participant and the capacity of the site. Details of any further treatment will be documented and reported.

**Therapists, Training and Supervision**

The therapists in this study will be licensed psychologists (including clinical and health), psychoterapists, psychiatrists and a psychiatric nurse with advanced mental health qualifications. Dependent on the site, therapists will be trained in one or both treatment conditions. EMDR therapists must have completed EMDR training level 1 with an additional two-day training for Ch-PTSD for the present study. Chris Lee an approved EMDR International Association trainer, provided training in the EMDR protocol across each site. ImRs therapists must have completed basic training in CBT and an additional two-day training for Ch-PTSD for the present study. Arnoud Arntz provided ImRs training for each site. Before commencing treatment with study participants, therapists are required to demonstrate they are competent to apply the treatment with a minimum of two pilot cases that they video record and show to the peer supervision group and site coordinator. In addition, therapists are required to attend five hours of peer supervision before starting with study participants and commit to having regular peer supervision throughout the course of the study. Where there is concern regarding therapists’ competence or issues relating to treatment protocol, expert supervision will be available from the aforementioned EMDR and ImRs trainers.
Measures

**Primary Outcome Measures**

_The Clinician Administered PTSD Scale for DSM-5 (CAPS-5; (Weathers et al., 2013a)._ The CAPS-5 is a structured interview consisting of 30-items to assess PTSD symptoms over the previous month. Research assistants are required to have training and supervision in the use of the CAPS-5 before conducting assessments with study participants.

As the CAPS-5 measures symptoms over the past month, post-treatment assessment would not be reflective of clinical improvement from the 12 intervention sessions as the assessment period overlaps with treatment. Therefore, the primary outcome measure is change in PTSD symptom severity measured by the CAPS-5 comparing pre-treatment to the eight-week post-treatment assessment and pre-treatment with follow-up.

**Secondary Outcome Measures**

_The Impact of Events Scale – Revised (IES-R; (Weiss & Marmar, 1997)._ The IES-R is a 22-item self-report questionnaire measuring symptomatic response over the last seven days, to a specified trauma event. Four items were added to the IES-R to assess trauma-related guilt, anger, disgust, and shame, see Appendix 5.1 (Arntz et al., 2007). Therapists are recommended to use these ratings to guide treatment sessions.

_The Beck Depression Inventory II (BDI-II; (Beck, Steer, & Brown, 1996)._ The BDI-II is a 21-item self-report instrument assessing depressive symptoms during the last two weeks.

_The Post-Traumatic Cognitions Inventory (PTCI; (Foa, Ehlers, Clark, Tolin, & Orsillo, 1999)._ The PTCI is a 33-item self-report instrument used to assess cognitions considered to underlie posttraumatic psychopathology.

_The Trauma-Related Guilt Inventory (TRGI; (Kubany et al., 1996)._ The TRGI is a 32-item self-report questionnaire, which measures cognitive and affective aspects of trauma-related guilt.
The Trauma-Related Shame Inventory (TRSI; Øktedalen, Hagtvet, Hoffart, Langkaas, & Smucker, 2014). The TRSI is a 24-item self-report instrument to assess individual’s negative self-evaluations in the context of their traumatic experiences.

The Anger Expression and Control Scale (ZECV; van Elderen, Maes, Komproe, & van der Kamp, 1997). The ZEVC is a 40-item scale to assess internalised and externalised anger.

The hostility subscale of the Symptom Checklist-90-R (SCL-90-R; Derogatis & Unger, 2010). The hostility subscale of the SCL-90-R is a 6-item scale to assess anger related thoughts, feelings and behaviours.

The Dissociative Experiences Scale-Taxon (DES-T; Waller, Putnam, & Carlson, 1996). The DES-T is an 8-item scale designed to measure symptoms of pathological dissociation.

The Happiness Questionnaire (HQ; Andrews & Withey, 1976). A single item question will be used to assess overall level of happiness with life

The Remoralization Questionnaire (RQ; Vissers, Keijsers, van der Veld, de Jong, & Hutschemaekers, 2010). The RQ is a 12-item questionnaire used to assess restoration of morale that is considered to be important in the process of therapeutic change.

The Schema Mode Inventory (SMI; Lobbestael, van Vreeswijk, Spinhoven, Schouten, & Arntz, 2010). The SMI is a 118-item scale used to explore schema modes. The SMI will be assessed in all sites excluding Perth as recruitment had already commenced at this site prior to the inclusion of this measure.

Imagery Interview (II; Engelhard, van den Hout, & Smeets, 2011; Lee & Kwon, 2013; van den Hout & Engelhard, 2012; Wild, Hackmann, & Clark, 2007). An imagery interview will be used to assess memory vividness, memory distress, and encapsulated belief by having the participants rate these aspects on a 0-100% scale immediately after imagining their memory of the index trauma.

The World Health Organization Disability Assessment Schedule 2.0 (WHODAS; WHO, 2000). The WHODAS is 15-item questionnaire designed to measure the levels of functioning of an individual across major life domains including cognition, self-care, daily activities, mobility, social interaction and community participation.
Medication Use (Medication). Medication use will be assessed at each assessment and treatment session and will collect details on any changes in medication related to psychological disturbances.

Study Procedures

Screening Procedure

The screening session will assess potential participants’ eligibility based on the aforementioned inclusion and exclusion criteria and their motivation for trauma-focused treatment. Psychiatric disorders will be assessed with the Structured Clinical Interviews for DSM-IV-TR (SCID; (First, Spitzer, Gibbon, & Williams, 1995) or the Mini International Neuropsychiatric Interview (MINI; (Sheehan et al., 1997) depending on site preference. If study criteria have been satisfied, trauma history will be assessed using the Life Events Checklist for DSM-5 (LEC-5), a 17-item self-report questionnaire developed to screen for lifetime trauma experiences (Weathers et al., 2013b). Additional items have been added to the LEC-5 to assess emotional abuse/neglect and physical neglect, see Appendix 5.2. The LEC-5 will be administered during the screening session to identify the nature and extent of trauma experiences.

To determine the focus of assessments, during the screening session participants will be asked to identify 1) an index trauma, being a single or group of closely related events for example ‘the sexual abuse by my uncle’, that was experienced before 16 years of age which will be the traumatic event (PTSD criterion A) for the CAPS-5 clinical interview; 2) a worst memory related to the index trauma and associated encapsulated belief that will be used for the imagery interview.
Table 5.1

**Overview of Measures and Assessment Times**

<table>
<thead>
<tr>
<th></th>
<th>Screening</th>
<th>Pre-treatment</th>
<th>Mid-treatment</th>
<th>Post-treatment</th>
<th>8 week follow up</th>
<th>1-year follow up</th>
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<td>IES-R*</td>
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<td>ZECV</td>
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<td>SCL-90-R</td>
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SCID: Structured Clinical Diagnostic Interview; MINI: Mini Neuropsychiatric Interview; LEC-5: Life Events Checklist; CAPS-5: Clinician Administered PTSD Scale; WHODAS: World Health Organisation Disability Assessment Schedule; IES-R: Impact of Events Scale – Revised; BDI: Beck Depression Inventory; DES-T: Dissociative Experiences Scale-Taxon; TRGI: Trauma-Related Guilt Inventory; TRSI: Trauma-Related Shame Inventory; ZECV: Anger Expression and Control Scale; SCL-90-R: Hostility subscale of the Symptom Checklist Revised; RQ: Remoralization Questionnaire; SMI: Schema Mode Inventory. *IES-R to be completed by participant and medication use to be recorded, at the start of each treatment session. **SMI to be completed for each site excluding Perth, Australia.
**Assessment Procedure**

Assessments will be conducted by a research assistant who is blind to treatment condition. Assessments are all audio recorded and are a combination of clinical interview and self-report instruments.

There will be either five or six assessment sessions during the study, see table 5.1. Assessments will be conducted at waitlist (if there is less than a three-week gap between waitlist and commencement of treatment), pre-treatment, mid-treatment (after 6 sessions), post-treatment (8 weeks after the first treatment session), eight-week follow-up (8 weeks after the post-treatment assessment) and one-year follow-up (1 year after pre-treatment assessment). Participants who have successfully completed treatment earlier than the possible 12 sessions will be assessed at the planned assessment moment.

Self-reported PTSD symptoms using the IES-R will be assessed twice at each assessment and treatment session, once for the ‘Index trauma’ and again for ‘all others traumas’ as identified on the LEC-5. The IES-R administered at session seven will be used as the mid-treatment assessment.

**Analysis**

Taking into account all the data collected, a mixed regression model will be used to analyse the data. This will identify any fixed or random effects resulting from the treatment and changes over time. A mixed logistic regression analysis will be used for diagnostic outcomes. A mixed gamma regression will be used for skewed distributions. Poisson or negative binomial regression will be used for analysing medication use and other count data. Analysis will include an intent-to-treat sample.

The mechanism test will be done by advanced mediation tests, using multiple assessments of dependent variables (CAPS-5, IES-R) and variables representing indices that should predict change in symptoms (imagery interview-based ratings of vividness, valence, and encapsulated beliefs of the primary trauma memory).

**Additional Sub-studies**

Secondary investigations will be performed to explore and further our understanding of the effectiveness of EMDR and ImRs in the treatment of Ch-PTSD.
Treatment

Treatment Integrity.

Independent raters blind to treatment condition will rate a random selection of session recordings to assess treatment integrity. Ratings will be used to document treatment integrity and to investigate the relationship with treatment outcome.

Prediction of Effects and Drop Out.

Baseline characteristics of participants such as symptom severity and nature of trauma will be used to study whether they predict treatment effects and dropout, or if such variables predict a different response to EMDR versus ImRs.

Mechanisms and Essential Ingredients of Treatments

Participants’ Views on Central Mechanisms of EMDR and ImRs – Qualitative.

The objective of this study is to get a better overview of what participants consider the most effective elements of EMDR and ImRs treatments. Qualitative interviews will be conducted to explore if participants experienced changes related to the techniques and in what areas the changes were experienced.

Essential Ingredients of ImRs – Observational Study.

The purpose of this study is to clarify the working mechanisms of the ImRs protocol, in order to enlarge the chance of a successful treatment of PTSD-symptoms for participants with early childhood trauma. This study will use the video recordings of ImRs sessions to explore on a microscopic, observational level what specific ingredients of ImRs are associated with change, with a specific focus on two possible processes: expression of inhibited action tendencies and need fulfilment.

Participant and Therapist Perspectives of Treatment

The exploration of the treatment experience and factors related to treatment will further our knowledge of issues and barriers associated with the implementation of Ch-PTSD treatments. These investigations will be a mixed methods approach. Therapists involved in this study will complete an online survey to explore attitudes, beliefs and experience of treating Ch-PTSD. Following this, further exploration
into therapists’ perspectives will be conducted with in-depth interviews. Questions for these qualitative
interviews will focus on experience of delivering treatment, training, supervision, challenges and opinions.

Qualitative interviews will be performed to explore the treatment experience from the
participants’ perspective. This study will aim to investigate the participant’s experience of treatment, the
process of change and factors related to treatment engagement such participant motivation and difficulty
during treatment.

Changes in Memory

Change in Specificity of Memories.

This study will aim to test whether memories of single trauma are more specific and consistent
than those of repeated traumas. Participants are asked to write an account of the index trauma and where
there are multiple traumas that constitute the index trauma, to describe the one they have the clearest
memory of, at pre-treatment and again at the 8-week post-treatment assessments.

Change in Memory Consolidation.

The aim of this study is to explore the nature of change in memories of traumatic events, with a
view to identifying factors that are associated with successful treatment outcomes. This study is a
qualitative design that will compare transcripts of participants’ pre- and post-treatment index trauma
memories using a coding system informed by the literature base and clinical expertise.

Discussion

This article has described the study design of IREM, an international multicentre RCT comparing the
effectiveness of EMDR and ImRs for treatment of Ch-PTSD. This RCT and the additional sub-studies will
broaden our understanding of the effectiveness of these approaches in Ch-PTSD treatment and will help in
furthering our understanding of their underlying mechanisms of change.

The study design has several strengths. Given the RCT is an international multi-site design,
conclusions about any treatment effects will be generalisable to the method, rather than idiosyncratic ways
a treatment might be delivered in a particular country or a particular site. In addition, this RCT has scientific
validity as all the measures are standardised and assessments will be conducted by researchers who are
blind to treatment condition. Another strength is that there are few exclusion criterion, thus enhancing the generalisability of the findings to real world settings. The overall size of the sample should provide sufficient power to enable meaningful conclusions about the data.

A limitation of the study is that there is no randomization between waitlist and active treatment. Instead, a naturalistic waitlist will be used to test whether treatment differs from natural course, assuming that whether or not patients have to wait until they can start treatment is nonbiased, as it is driven by the site’s treatment capacity at the moment. To prevent bias, no patient will be given priority to start treatment. Another limitation is that there is no budget for intensive treatment supervision by experts. On the other hand, the study will document what the effectiveness is of the treatments based on a simple dissemination program. Relatedly, the therapist requirements differ between conditions: for EMDR therapists are required to complete a minimum level one training; whereas for ImRs only a basic CBT training is required. The authors feel that this adequately represents reality with EMDR perhaps being more complex to train than ImRs.

The evidence from this RCT will contribute to clinical decisions on whether to use trauma-focused approaches for the sequela associated with Ch-PTSD. While the primary aims of this study is to compare EMDR and ImRs treatments on PTSD symptom severity and to clarify whether or not different mechanisms of change are involved, secondary outcome measures will assess some disturbances associated with Ch-PTSD such as guilt, shame, anger and dissociation. EMDR and ImRs might more directly target change through cognitive and experiential mechanisms, thus having a greater impact on a wider range of symptoms than just PTSD (Arntz, 2012; Shapiro & Maxfield, 2002).

This study will contribute to the growing evidence for the efficacy of trauma-focused treatment for Ch-PTSD. The documented lack of implementation of trauma-focused approaches has highlighted the need to explore treatments, which will be acceptable to both participants and therapists (Cloitre, 2015; van Minnen et al., 2010). A large part of the issue for treatment of Ch-PTSD is the perception that individuals would not be able to tolerate treatment. However, it is unclear if the reluctance to engage in trauma-focused treatment is a shared view as it is suggested that avoidance of the therapist is a much greater
barrier (van Minnen et al., 2010). This RCT will be able to contribute to our knowledge of participants’
capacity to engage in treatment. The exploration into therapist and participants’ perspective will help to
identify barriers and issues with the implementation of treatment.

Taken together, findings from this RCT will make a significant contribution towards developing best
practice for treating PTSD caused by childhood experiences. Both EMDR and ImRs hold promise as being
efficacious treatments for Ch-PTSD and the sequela of symptoms associated with this disorder.
References


### Appendix 5.1. Additional items added to the Impact of Events Scale Revised (IES-R)

<table>
<thead>
<tr>
<th></th>
<th>With respect to __________________________</th>
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<tbody>
<tr>
<td></td>
<td>Not at All</td>
</tr>
<tr>
<td>23.</td>
<td>I had feelings of guilt about it.</td>
</tr>
<tr>
<td>24.</td>
<td>I felt ashamed about it.</td>
</tr>
<tr>
<td>25.</td>
<td>I felt angry about it.</td>
</tr>
<tr>
<td>26.</td>
<td>I felt disgust about it.</td>
</tr>
</tbody>
</table>
Appendix 5.2. Additional items added to the Life Events Checklist (LEC-5)

**EXTRA ITEMS LIFE EVENTS CHECKLIST FOR THE DSM-5**

Be sure to consider your *entire life* (growing up as well as adulthood) as you go through the list of events.

<table>
<thead>
<tr>
<th>Event</th>
<th>Happened to me</th>
<th>Witnessed it</th>
<th>Learned about it</th>
<th>Part of my job</th>
<th>Not Sure</th>
<th>Doesn’t Apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Emotional abuse (like severely bullied, humiliated, yelled at, verbally threatened, punished in a unfair or cruel way)</td>
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<td>2. Emotional neglect (like taking care of parents or other children in the family, parents were addicted to alcohol or drugs, being left to your own devices)</td>
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<td>3. Physical neglect (like not getting enough food, or need to provide for your own food, left home alone during the day or at night under age of 12, not getting the medical care that was necessary)</td>
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Chapter 6: Imagery Rescripting and Eye Movement Desensitisation and Reprocessing as Treatment for Adults with Post-Traumatic Stress Disorder from Childhood Trauma: A Randomised Clinical Trial

Abstract

**Background:** Investigation of treatments that effectively treat adults with posttraumatic stress disorder from childhood experiences (Ch-PTSD) and are well tolerated by patients is needed to improve outcomes for this population.

**Aims:** The purpose of this study was to compare the effectiveness of two trauma-focused treatments, imagery rescripting (ImRs) and eye movement desensitisation and reprocessing (EMDR), for treating Ch-PTSD.

**Method:** IREM, an international multi-centre randomised clinical trial recruited adults with Ch-PTSD from childhood trauma before the age of 16. Participants, randomised to treatment condition were assessed by blind-raters at multiple time points. Participants received up to twelve, 90 minute sessions of either ImRs or EMDR biweekly. ANZCTR trial registration ID: ACTRN12614000750684.

**Results:** A total of 155 participants were included in the final intent-to-treat analysis. Dropout rates were low at 7.7%. A generalized linear mixed model of repeated measures showed that PTSD symptoms significantly decreased in both treatment conditions with large effect sizes. At the 8-week follow-up assessment, 68% of participants no longer met PTSD criteria. There were no significant differences between the two treatments on any standardized measure post-treatment. There were small differences favouring EMDR on some secondary measures mid-treatment.

**Conclusions:** ImRs and EMDR treatments were found to be effective in treating PTSD from childhood trauma experiences and in reducing other symptoms such as depression, dissociation, and trauma related cognitions and feelings. The low dropout rates suggest that the treatments were well tolerated by participants. The results from this study provide evidence to support the use of trauma-focused treatments for Ch-PTSD.
Keywords: Post-traumatic Stress Disorder, Childhood Trauma, Eye Movement Desensitisation and Reprocessing, Imagery Rescripting, Psychotherapy
Imagery Rescripting and Eye Movement Desensitisation and Reprocessing as Treatment for Adults with Post-Traumatic Stress Disorder from Childhood Trauma: A Randomised Clinical Trial

There is a lack of agreement on recommended best practice for treatment of adults with posttraumatic stress disorder from childhood experiences (Ch-PTSD; Cloitre et al., 2011; de Jongh et al., 2016). The sequela of childhood trauma, often being interpersonal in nature, involving multiple events over a prolonged period, can result in complex PTSD presentations such as disturbances in affect and behaviour dysregulation (Herman, 1992; Maercker et al., 2013). It is due to these additional symptoms that there has been debate over whether the evidenced-based trauma-focused approaches of PTSD treatments are appropriate for treating this population (Cloitre et al., 2012; de Jongh et al., 2016). Childhood trauma has been identified as negatively moderating the effectiveness of trauma-focused approaches and research suggests that these individuals are less likely to experience improvements from treatment (Karatzias et al., 2019). Notwithstanding, meta-analysis has identified individual trauma-focused therapies as the most effective treatment for Ch-PTSD (Ehring et al., 2014).

The debate of whether individuals with Ch-PTSD should have trauma-focused treatment is predicated on the assumption that due to complex presentations, individuals do not have the capacity to tolerate the increased levels of distress often involved in processing their childhood trauma experiences (Cloitre et al., 2011; de Jongh et al., 2016). Exposure to traumatic material has been identified as a core component of PTSD treatments (Schnyder et al., 2015). There is however, much variation in how this is approached among the different treatments. For example, some cognitive-behaviour therapies rely on prolonged reliving of trauma memories with the purpose being habituation and re-evaluation of feared stimuli (Foa, Davidson, & Frances, 1999). There are other trauma-focused treatments that limit exposure to traumatic material such as imagery rescripting (ImRs) and eye movement desensitisation and reprocessing (EMDR). Both these
treatments may be more acceptable for patients as treatment does not require prolonged reliving of trauma experiences to achieve a reduction in posttraumatic symptoms (Arntz, 2012; Korn, 2009).

ImRs involves patients imagining different outcomes related to their trauma experiences with the focus on meeting the individual’s core unmet needs. The process of rescripting facilitates changes to the meaning of the trauma memory, leading to changes in patients’ core beliefs systems and behaviours (Arntz & Weertman, 1999). EMDR uses bilateral stimulation, such as eye movements or tapping, to facilitate processing of traumatic experiences. The result of the dual attention focus is a reduction in the distress and vividness associated with trauma memories (Shapiro, 2001). Although limited, there is evidence to suggest that both ImRs and EMDR can be effective in treating Ch-PTSD (Edmond & Rubin, 2004; Raabe, Ehring, Arntz, Marquenie, & Kindt, 2019; Raabe, Ehring, Marquenie, Olff, & Kindt, 2015; Wagenmans, van Minnen, Sleijpen, & de Jongh, 2018).

This randomised controlled trial (RCT) was designed to address the critical gap in the research literature by comparing the effectiveness of ImRs and EMDR in the treatment of Ch-PTSD. These two treatments may be particularly suitable for adults with Ch-PTSD and have never been directly compared.

**Method**

**Study Design**

The ImRs and EMDR RCT (IREM) is an international collaboration with sites across Australia, Germany, and the Netherlands. IREM was registered on the Australian and New Zealand Clinical Trials Registry, Ref: ACTRN12614000750684. Full methodology of IREM was published elsewhere (Boterhoven de Haan et al., 2017). Research assistants were blind to treatment condition for the duration of the RCT. The full trial protocol can be found in Supplement 1.

**Ethics Approval and Consent**

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. All procedures involving human
subjects/patients were approved by the respective institutional ethics committees in each country (University of Western Australia RA/4/1/8727, WA Department of Health: 2014067EW; Lübeck University: 14-274, and Maastricht University: ERCPN 136_01_01_2014).

Informed written consent was obtained from all IREM participants.

**Participants**

Participants aged between 18-70 years could participate if they had (1) experienced trauma before 16 years of age, (2) a primary diagnosis of PTSD related to their childhood trauma, (3) posttraumatic symptoms present for three months or more, (4) available to attend sessions twice a week during the treatment period, and (5) agreed no medication changes or any psychological therapy over the duration of their treatment until follow-up 1 assessment (8-weeks post-treatment). Exclusion criteria included (1) acute suicide risk, (2) comorbid psychotic disorder, (3) bipolar disorder type 1, (4) alcohol or drug dependence, (5) PTSD from trauma occurring within the past six months, (7) IQ below 80, (8) medication changes or any PTSD-focused therapy within the past three months, and (9) benzodiazepine medication, although if patients agree to taper off their benzodiazepine medication they could participate after two weeks of abstinence.

**Randomisation and Masking**

Randomisation of participants occurred after baseline assessment using block randomisation (n= two, four, and six per block, with block size randomised). Randomisation was stratified for gender to control distribution per treatment at each site.

**Procedures**

Participants were recruited at seven mental health and specialised services across Australia, Germany, and the Netherlands from October 2014 to June 2019. Screening of potential participants involved assessment of psychiatric disorders using the Structured Clinical Interviews for DSM-IV-TR (SCID; First, Spitzer, Gibbon, & Williams, 1995) or the Mini International Neuropsychiatric Interview (MINI; Sheehan et al., 1997) depending on site preference; eligibility criteria; and trauma history with the use of the Life Events Checklist for DSM-5 (LEC-5; Weathers et al., 2013b) including
additional items to assess emotional abuse and emotional or physical neglect. Once eligibility was determined, participants were then scheduled to complete baseline assessment.

Assessments were a combination of interview and self-report measures which were conducted by research assistants, blind to treatment condition. Assessment time points included baseline (just before the start of treatment), mid-treatment (after 6 sessions), post-treatment, follow-up 1 (8-weeks post-treatment), and follow-up 2 (1-year after baseline assessment). Wait-list assessments were required if participants had a wait of three weeks or more before the commencement of treatment.

Outcomes

A priori planned primary outcome was change in PTSD symptom severity from baseline to follow-up 1 assessment measured by the Clinician Administered PTSD Scale for DSM-5 (CAPS-5; Weathers et al., 2013a). The CAPS-5 is a structured clinical interview rating the frequency and intensity of PTSD symptoms over the last month. Score range 0-80 with higher scores reflecting greater PTSD symptom severity.

A secondary outcome of self-reported PTSD symptoms were assessed with the Impact of Events Scale-Revised (IES-R; Weiss & Marmar, 1997). The IES-R has a score range 0-88 with higher scores reflecting greater symptom severity. Four single items to assess trauma related guilt, shame, anger, and disgust were included in this self-report. The single items have a score range 0-4 with higher scores reflecting greater symptom severity. The IES-R and single items were collected for the index trauma, experienced before age 16, and also for all other traumas. Self-reports were collected at each assessment point and treatment session. Session seven was used for the mid-treatment score. Additional secondary outcome measures included the Beck Depression Inventory II (BDI-II; Beck, Steer, & Brown, 1996); Dissociative Experiences Scale-Taxon (DES-T; Waller, Putnam, & Carlson, 1996); Post-Traumatic Cognitions Inventory (PTCI; Foa, Ehlers, Clark, Tolin, & Orsillo, 1999); Trauma-Related Shame Inventory (TRSI; Øktedalen, Hagtvet, Hoffart, Langkaas, & Smucker, 2014); Trauma-Related Guilt Inventory (TRGI; Kubany et al., 1996) with sum score of all items except the
Distress and Lack of Justification subscales; Anger Expression and Control Scale (Anger; van Elderen, Maes, Komproe, & van der Kamp, 1997) with a composite score comprised of anger minus control subscales; Hostility (6-items) taken from the Symptoms Checklist-90-Revised (Hostility; Derogatis & Unger, 2010); Happiness (Happiness; Veenhoven, 2011); World Health Organization Disability Assessment Schedule 2.0 (WHODAS; World Health Organization [WHO], 2000); Remoralization Questionnaire (RQ; Vissers, Keijsers, van der Veld, de Jong, & Hutschemaekers, 2010).

Other secondary measures reported in the original trial protocol and design article including the Imagery Interview (Engelhard, van den Hout, & Smeets, 2011; Wild, Hackmann, & Clark, 2007) and the Schema Mode Inventory (Lobbestael, van Vreeswijk, Spinhoven, Schouten, & Arntz, 2010) will be reported in different papers.

Ongoing monitoring of participant safety was conducted over the duration of the trial. Serious adverse events were recorded according to standard procedures and reported to the research board.

Treatment

Treatment consisted of twelve 90-minute sessions, twice a week, for a period of six weeks with up to eight weeks permitted. Participants were allowed to finish treatment prior to the twelve sessions if the site co-ordinator agreed that treatment was no longer necessary. In such cases, assessments were still conducted at the original planned time points. All treatment sessions were either video or audio recorded. Session one entailed an introduction to the treatment model and constructing a list of trauma memories for processing. In the ImRs condition, participants had a pilot rescripting of a less aversive (non-trauma) memory to become familiar with the technique. There was no pilot in the EMDR condition due to time constraints. In every subsequent session, trauma processing was required.

IREM therapists were licensed psychologists, psychotherapists, psychiatrists, and a psychiatric nurse with advanced qualifications in mental health. Therapists were trained in one or both treatment conditions. For ImRs, therapists were required to have basic training in CBT and for
EMDR, they were required to have level 1 basic training. Both treatments required an additional two-day training in the respective treatment specifically for treating childhood trauma. Therapists had to demonstrate competency prior to treating participants in IREM with a minimum of two pilot cases which were video recorded and assessed by the site coordinator. Therapists were provided with ongoing peer supervision throughout the RCT. Treatment integrity was assessed by raters who viewed randomly selected video tapes of 60 participants across the three countries. Each participant tape was rated on the modified EMDR Therapy Fidelity Rating Scale (Cooper, Smith, Lewis, Lee, & Leeds, 2019) where each item is rated 0-2 and the ImRs Adherence and Competency Scale (Raabe, 2016) where each item is rated 0-4. The mean rating for EMDR was 1.34 and for ImRs was 3.19 which means a satisfactory adherence. Analysis of the rating scores for the Dutch participants indicated treatment conditions were statistically distinguishable from each other (EMDR condition $t_{78} = 14.93, p <0.001$, ImRs condition $t_{85} = 17.25, p <0.001$).

**ImRs**

The ImRs protocol developed by Arntz and Weertman (1999) was followed. In phase one, the patient recalls a trauma memory from their child-self perspective, identifying their thoughts, feelings, and needs. They are then guided to imagine a different ending such as someone intervening by stopping the abuse and caring for the other needs of the child. For the first six treatment sessions, the therapist would enter the image and intervene. From session seven onwards, the patient would step into the image as their adult-self and intervene (phase two). In phase three, the patient re-experiences the event from the child perspective, with the adult intervening.

**EMDR**

The eight-phase EMDR protocol developed by Shapiro (2001) was followed. The general assessment, preparation, and key memory components of the first trauma to be processed (phases one, two, and three), were incorporated into the first session. Phases three to eight, the active trauma processing phases, were repeated from session two onwards. At session twelve or earlier, depending on patients’ progress, the focus of the session was on current triggers and anticipatory
anxiety related to future events. The only deviation to the original EMDR protocol was a restriction on unblocking strategies or interweaves involving imagery to prevent contamination between treatments.

**Statistical Analysis**

With \( n = 128 \) the study was powered at > 80% to detect a medium effect size between arms at a .05 significance level. Participant dropout of 10% was estimated which took the final sample to a minimum \( n = 142 \).

Statistical analysis was done with SPSS, version 25 (IBM Corp, 2017). (Generalized) Linear Mixed Model (GLMM) was used on all available data from the intent-to-treat sample. Skewed distributions were analysed with negative binomial (integers) or gamma regression (fractions) with a loglink. The repeated parts had an unstructured covariance structure (if convergence failed, AR1 or ARMA11 were used). If convergence allowed, random slope or intercept for site were added. The effects were estimated per assessment with baseline as the reference. Cohen’s \( d \) effect sizes were based on the estimated coefficients, divided by the baseline standard deviation (SD). In case of loglinks, this SD was derived from the error variance of the baseline of an GLMM-analysis with only an unstructured repeated part and a fixed intercept.

**Results**

Between October 2014 and June 2019, a total of 155 participants were recruited and treated as part of the IREM trial. Figure 6.1 presents the consort flow diagram of participant recruitment and Table 6.1 presents the demographics of the intent-to-treat sample. Twelve (7.7%) participants dropped out of treatment, six (8.1%) from ImRs and six (7.4%) from EMDR and 18 (11.6%) participants completed treatment early, six (8.1%) ImRs and 12 (14.8%) EMDR.
### Table 6. 1

**Demographic Characteristics of the IREM Intent-to-Treat Sample**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Treatment Condition, No. (%) of Patients&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All (N = 155)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Age, Mean (SD), years</td>
<td>38.54 (11.17)</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>36 (23.2)</td>
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<tr>
<td>Female</td>
<td>119 (76.8)</td>
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<tr>
<td>Relationship Status</td>
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<tr>
<td>Partner</td>
<td>96 (61.9)</td>
</tr>
<tr>
<td>No Partner</td>
<td>59 (38.1)</td>
</tr>
<tr>
<td>Education level</td>
<td></td>
</tr>
<tr>
<td>No/Primary Education</td>
<td>8 (5.2)</td>
</tr>
<tr>
<td>Secondary Education</td>
<td>45 (29.0)</td>
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<tr>
<td>Tertiary Education</td>
<td>88 (56.8)</td>
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<tr>
<td>University Bachelors</td>
<td>6 (3.9)</td>
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<tr>
<td>University Master</td>
<td>8 (5.2)</td>
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<tr>
<td>Ethnic background</td>
<td></td>
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<tr>
<td>Dutch</td>
<td>60 (38.7)</td>
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<tr>
<td>German</td>
<td>21 (13.5)</td>
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<tr>
<td>Australian</td>
<td>37 (23.9)</td>
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<tr>
<td>Other European</td>
<td>8 (5.2)</td>
</tr>
<tr>
<td>Moroccan</td>
<td>10 (6.5)</td>
</tr>
<tr>
<td>Surinamese/Antillean</td>
<td>8 (5.2)</td>
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<td>Asian</td>
<td>6 (3.9)</td>
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<tr>
<td>African</td>
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<td>Other</td>
<td>3 (1.9)</td>
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<tr>
<td>Work status</td>
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<tr>
<td>Working</td>
<td>63 (40.7)</td>
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<tr>
<td>Not working</td>
<td>21 (13.5)</td>
</tr>
<tr>
<td>Disability pension</td>
<td>54 (34.8)</td>
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<tr>
<td>Unemployed</td>
<td>17 (11.0)</td>
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<td>PTSD Duration, Mean (SD), months</td>
<td>215.26 (175.08)</td>
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<tr>
<td>Index Traumas</td>
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<tr>
<td>Sexual Abuse/Assault</td>
<td>91 (58.7)</td>
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<tr>
<td>Physical Abuse</td>
<td>30 (19.4)</td>
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<tr>
<td>Mixed Abuse</td>
<td>8 (5.2)</td>
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<tr>
<td>Domestic Violence</td>
<td>14 (9.0)</td>
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<tr>
<td>Serious injury/death</td>
<td>6 (3.9)</td>
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<tr>
<td>Other</td>
<td>5 (3.2)</td>
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<tr>
<td>Index trauma duration, Mean (SD), years</td>
<td>7.39 (4.85)</td>
</tr>
<tr>
<td>Characteristic</td>
<td>All (N = 155)</td>
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<tr>
<td>--------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Co-Morbid Disorders</td>
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<tr>
<td>Mood disorders</td>
<td>111 (71.6)</td>
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<tr>
<td>Anxiety disorders</td>
<td>87 (56.1)</td>
</tr>
<tr>
<td>Other</td>
<td>39 (25.2)</td>
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<tr>
<td>Previous Treatment</td>
<td>126 (81.3)</td>
</tr>
<tr>
<td>Previous Psychiatric Admission</td>
<td>39 (25.2)</td>
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<tr>
<td>Psychotropic Medication</td>
<td>71 (45.8)</td>
</tr>
<tr>
<td>Alcohol or Substance Use</td>
<td>84 (54.2)</td>
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</tbody>
</table>

Analyses of the primary and secondary outcome measures are summarised in Table 2. The primary outcome of participants’ PTSD symptoms, assessed by the CAPS-5, did not change during the wait-list period, but significantly decreased during treatment and these gains were maintained until 1-year follow-up. Effect sizes were large in both treatment conditions. Figure 6.2 presents CAPS-5 scores at each assessment point. There were no significant time x condition interactions. In terms of diagnosis, 68% of participants no longer met PTSD criteria at the first follow up point and at the 1-year follow-up this had improved to 81%.

Secondary outcomes including self-reported PTSD, depression, dissociation, trauma cognitions, guilt, shame, anger, hostility, psychosocial functioning, and happiness had similar results with no changes during the wait period, and significant reductions in symptoms after treatment started. As can be seen in Table 6.2, there were some significant time x condition interactions at the mid-treatment assessment where EMDR resulted in significantly lower scores (using <.01) on three measures, many related to the index trauma. These interactions were no longer statistically significant at post-treatment and follow-up assessments.
Figure 6.1

Consort Diagram of Participant Flow

CONSORT diagram comparing Imagery Rescripting (ImRs) and Eye Movement Desensitisation and Processing (EMDR) for patients with Posttraumatic Stress Disorder from trauma experienced before 16 years of age. ITT indicates intent to treat sample.
Four serious adverse events were reported, with two of these deemed by participants as being partly study related. Both participants reported an increase in PTSD symptoms and suicidal ideation resulting in psychiatric admission, one after session six and the other after session 12 which occurred after experiencing another trauma (road accident). Of the two who reported adverse events that were not study related, one had an inpatient admission after a long term relationship break-up after the waitlist assessment but prior to the start of treatment, and the other was admitted to hospital after losing their job, four months after completing treatment.

Figure 6. 2

*Change in Posttraumatic Stress Disorder Symptoms Scores (CAPS-5) by Treatment Condition at Each Assessment Time Point.*

*Note.* Error bars indicate 95% confidence interval.
### Table 6.2

**Primary and Secondary Treatment Outcomes Across All Assessment Time Points**

<table>
<thead>
<tr>
<th>Outcome Measure and Time Point</th>
<th>Post-treatment Outcomes Estimated Means (95% CI), effect size</th>
<th>EMDR</th>
<th>Time</th>
<th>Time by Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimated Means (95% CI)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Effect size&lt;sup&gt;a&lt;/sup&gt;</td>
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<tr>
<td><strong>Primary Outcome</strong></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Interviewer Rated PTSD - CAPS-5</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Wait-list</td>
<td>40.21 (36.81-43.92)</td>
<td>0.12</td>
<td>39.07 (35.68-42.79)</td>
<td>0.14</td>
</tr>
<tr>
<td>Baseline</td>
<td>38.49 (35.45-41.78)</td>
<td></td>
<td>37.10 (34.19-40.26)</td>
<td></td>
</tr>
<tr>
<td>Post-treatment</td>
<td>24.58 (20.74-29.13)</td>
<td>1.19</td>
<td>21.13 (17.89-24.95)</td>
<td>1.50</td>
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<tr>
<td>8-week Follow-up</td>
<td>19.73 (16.22-24.00)</td>
<td>1.78</td>
<td>18.53 (15.35-22.37)</td>
<td>1.85</td>
</tr>
<tr>
<td>1-year Follow-up</td>
<td>16.28 (12.97-20.43)</td>
<td>2.29</td>
<td>17.81 (14.38-22.07)</td>
<td>1.95</td>
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<td><strong>Secondary Outcomes</strong></td>
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<td></td>
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<tr>
<td>Self-Reported PTSD - IES-R (Index trauma)</td>
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<tr>
<td>Wait-list</td>
<td>53.78 (50.24-57.57)</td>
<td>0.22</td>
<td>52.42 (49.25-55.80)</td>
<td>0.19</td>
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<tr>
<td>Baseline</td>
<td>49.99 (46.48-53.76)</td>
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<td>49.18 (45.87-52.72)</td>
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<tr>
<td>Mid-treatment</td>
<td>33.29 (27.64-40.11)</td>
<td>1.20</td>
<td>22.71 (18.88-27.30)</td>
<td>2.29</td>
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<tr>
<td>Post-treatment</td>
<td>22.96 (18.11-29.12)</td>
<td>2.30</td>
<td>17.76 (14.09-22.38)</td>
<td>3.02</td>
</tr>
<tr>
<td>8-week Follow-up</td>
<td>20.87 (16.23-26.84)</td>
<td>2.59</td>
<td>18.78 (14.76-23.89)</td>
<td>2.85</td>
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<td>1-year Follow-up</td>
<td>18.77 (14.05-25.08)</td>
<td>2.90</td>
<td>17.89 (13.60-23.54)</td>
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<td>Self-Reported PTSD - IES-R (All traumas)</td>
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<td>Wait-list</td>
<td>47.98 (43.74-52.64)</td>
<td>0.06</td>
<td>46.07 (42.16-50.35)</td>
<td>0.01</td>
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<td>46.35 (42.45-50.59)</td>
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<td>Mid-treatment</td>
<td>31.41 (26.48-37.26)</td>
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<td>24.11 (19.34-30.06)</td>
<td>1.41</td>
<td>21.99 (17.76-27.22)</td>
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<td>8-week Follow-up</td>
<td>22.67 (18.03-28.51)</td>
<td>1.55</td>
<td>21.09 (16.94-26.27)</td>
<td>1.69</td>
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<td>1-year Follow-up</td>
<td>19.59 (14.99-25.62)</td>
<td>1.86</td>
<td>22.93 (17.84-29.48)</td>
<td>1.51</td>
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<td>Outcome Measure and Time Point</td>
<td>Post-treatment Outcomes Estimated Means (95% CI), effect size</td>
<td>Time</td>
<td>Time by Treatment</td>
<td></td>
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<tr>
<td>--------------------------------</td>
<td>-------------------------------------------------------------</td>
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<tr>
<td></td>
<td>Estimated Means (95% CI)</td>
<td>Effect size&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Estimated Means (95% CI)</td>
<td>Effect size&lt;sup&gt;a&lt;/sup&gt;</td>
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<td><strong>Depression - BDI-II</strong></td>
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<td>32.82 (30.27-35.59)</td>
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<tr>
<td>Baseline</td>
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<td>30.65 (28.28-33.23)</td>
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<td>16.56 (13.61-20.15)</td>
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<td>8-week Follow-up</td>
<td>18.49 (15.01-22.79)</td>
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<td>16.59 (13.58-20.27)</td>
<td>1.43</td>
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<tr>
<td>1-year Follow-up</td>
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<td><strong>Dissociation - DES-T</strong></td>
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<td>Wait-list</td>
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<td>8.94 (6.90-11.57)</td>
<td>0.01</td>
</tr>
<tr>
<td>Baseline</td>
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<tr>
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<tr>
<td>8-week Follow-up</td>
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<td>0.16</td>
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<tr>
<td>1-year Follow-up</td>
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<td>Mid-treatment</td>
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<td>79.09 (70.60-88.60)</td>
<td>0.68</td>
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<td>59.33 (50.15-70.20)</td>
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<td>0.83 (0.60-1.16)</td>
<td>1.23</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>0.99 (0.70-1.42)</td>
<td>1.06</td>
<td>0.64 (0.43-0.96)</td>
<td>1.53</td>
</tr>
<tr>
<td>8-week Follow-up</td>
<td>0.91 (0.62-1.33)</td>
<td>1.17</td>
<td>0.89 (0.61-1.29)</td>
<td>1.15</td>
</tr>
<tr>
<td>1-year Follow-up</td>
<td>1.03 (0.71-1.49)</td>
<td>1.02</td>
<td>0.82 (0.56-1.20)</td>
<td>1.24</td>
</tr>
<tr>
<td>Single Item - DISGUST (All traumas)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wait-list</td>
<td>2.21 (1.83-2.67)</td>
<td>0.08</td>
<td>1.98 (1.65-2.39)</td>
<td>0.00</td>
</tr>
<tr>
<td>Baseline</td>
<td>2.04 (1.71-2.44)</td>
<td></td>
<td>1.98 (1.66-2.35)</td>
<td></td>
</tr>
<tr>
<td>Mid-treatment</td>
<td>1.32 (1.01-1.72)</td>
<td>0.43</td>
<td>1.00 (0.75-1.35)</td>
<td>0.66</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>0.88 (0.62-1.24)</td>
<td>0.82</td>
<td>0.86 (0.61-1.21)</td>
<td>0.81</td>
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<tr>
<td>8-week Follow-up</td>
<td>0.90 (0.63-1.30)</td>
<td>0.80</td>
<td>0.80 (0.56-1.16)</td>
<td>0.87</td>
</tr>
<tr>
<td>1-year Follow-up</td>
<td>0.83 (0.56-1.22)</td>
<td>0.88</td>
<td>0.84 (0.58-1.20)</td>
<td>0.83</td>
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</tbody>
</table>

Abbreviations: ImRs, Imagery Rescripting; EMDR, Eye-Movement Desensitisation and Reprocessing; CAPS-5, Clinician Administered PTSD Scale for DSM-5; IES-R, Impact of Events Scale – Revised; Index trauma, trauma occurring before 16 years of age; All traumas, all other traumas; BDI-II, Beck Depression Inventory II, DES-T, Dissociative Experiences Scale-Taxon; PTCI, Post-Traumatic Cognitions Inventory; TRSI, Trauma-Related Shame Inventory; TRGI, Trauma-Related Guilt Inventory; Anger, Anger Expression and Control Composite Score; Hostility, Symptom Checklist 90 Revised Hostility subscale; Happiness, Happiness single item; WHODAS, World Health Organisation Disability Assessment Schedule; RQ, Remoralization Questionnaire

<sup>a</sup>Effect size calculated for treatment condition in comparison to pre-treatment
<sup>b</sup>Change from baseline (main time effect)
<sup>c</sup>Difference between treatments in change from baseline
Discussion

The purpose of this international RCT was to investigate the effectiveness of ImRs and EMDR for the treatment of individuals with Ch-PTSD. IREM results showed that both treatments were effective in reducing PTSD symptoms, depression, dissociation, trauma related cognitions, shame, guilt, and hostility, with treatment gains increasing over time.

There were no differences between the treatments on the primary outcome at any time point and only three differences for secondary outcomes all at the mid-treatment point favouring EMDR. These differences were no longer present at post-treatment and follow-up assessments. The size of treatment effects between baseline and one-year follow-up were very large with 2.3 for ImRs and 2 for EMDR on the CAPS-5, and the treatment dropout of 7.7% was also very low. In comparison, a meta-analysis for trauma-focused treatments for adult survivors of childhood abuse found an average pre-post effect size of 1.24 and an average dropout rate of 22% (Ehring et al., 2014).

IREM results contribute to the growing evidence that suggests it is acceptable to directly treat trauma in more complex PTSD presentations such as individuals with childhood trauma experiences (Ehring et al., 2014). IREM findings challenge views of researchers and specialist trauma organisations who advocate for a stabilisation phase to be included as part of treatment where an initial stabilisation phase has been viewed as necessary to improve patients’ functioning and capacity to tolerate trauma processing (Cloitre et al., 2012; Cloitre et al., 2010; Karatzias & Cloitre, 2019). This approach has been criticised as lacking empirical support (de Jongh et al., 2016). Our findings do not support this view also, with most IREM participants having extensive trauma histories and comorbid disorders however, were able to successfully engage in trauma-focused treatment. Further, these phase-based treatments had up to 24 sessions compared to IREM, offering participants only 12 sessions. Taken altogether it suggests that a stabilisation phase is generally not required for treatment of Ch-PTSD. In IREM, both ImRs and EMDR were well tolerated by participants and generally did not contribute to symptom exacerbation as a result of trauma processing.
We found that both ImRs and EMDR were effective without the need for prolonged exposure. This is consistent with other studies that have suggested that limited exposure to trauma memories is required to achieve symptomatic reduction (Arntz, 2012; Sloan, Marx, Lee, & Resick, 2018). The treatment process of ImRs and EMDR reduce the burden on both patients and therapists as individuals are not required to relive their trauma experiences in great detail.

The IREM protocol utilised intensive treatment with sessions offered twice a week. More intensive interventions have been hypothesised to be suitable for certain populations such as those with complex forms of PTSD, as it facilitates treatment engagement and helps overcome avoidance (Hendriks, de Kleine, Broekman, Hendriks, & van Minnen, 2018). Indeed, the accompanying qualitative study yielded positive evaluations by patients and therapists of the present format (Boterhoven de Haan, 2018; Wagenmans et al., 2018). The hypothesis that twice a week is superior to once a week for EMDR and ImRs is currently tested in an RCT, see Netherlands Trial Register NTR7153.

Strengths and Limitations

This study has several strengths. In the treatment of Ch-PTSD, this is the first study to directly compare EMDR and ImRs. In addition, it is the first large scale RCT where ImRs has been trialled for treatment of Ch-PTSD. The lack of significant between group treatment effects indicates that both treatments are effective for treating Ch-PTSD. The rigorous design of this RCT using a large international sample, participation of regular mental health centres, and long term follow up, provides evidence for the effectiveness of these treatments and increases generalisability of our results. This research makes an important contribution in developing evidenced-based treatments for Ch-PTSD. The findings reported indicate significant symptom reduction in PTSD and other measures, combined with low treatment dropouts suggest that patients are able to tolerate short-term trauma-focused treatments without requiring any prior stabilisation.

A limitation of this study was that the treatments were not compared with other evidence-based treatments for PTSD such as cognitive behaviour therapy or prolonged exposure and there
was no non-active or control group. Since the study was designed as an effectiveness study and not an efficacy study, a control group would endanger the representativeness of the treatment group by increasing patients’ resistance to participate. However, the fact that there were no significant changes during the waitlist period makes it unlikely that the observed improvements are due to nonspecific factors such as time.
References


Supplementary Material: IREM Study Protocol

Title:
Imagery Rescripting (ImRs) vs. Eye Movement Desensitization and Reprocessing (EMDR) as treatment of childhood-trauma related PTSD in adults.

Authors:
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Arnoud Arntz, PhD., University of Amsterdam & Maastricht University, the Netherlands
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Date:
08 April 2016

1. Introduction

According to the DSM-IV, Post-Traumatic Stress Disorder (PTSD) might result as the consequence of experiencing traumatic events. Traumatic events are defined as events in which the person experiences, witnesses or is confronted with actual or threatened death or serious injury, or a threat to the physical integrity of the person him/herself or others. The three clusters of PTSD-symptoms include re-experiencing the trauma, avoidance of trauma reminders, and hyper arousal. In the general population the prevalence of PTSD is 0.4%-2% and lifetime prevalence is 1-12%.

There are various evidence-based treatments for PTSD. Trauma-focused CBT (tf-CBT) and EMDR are among the most often tested treatments. Tf-CBT has two main variants, prolonged imaginal exposure to traumatic memories, and cognitive restructuring of beliefs and appraisals of the trauma experiences and the symptoms produced by having experienced the trauma. Meta-analyses have documented the effectiveness of such treatments (Bisson et al., 2007; Bradley et al.,
A relatively less often studied treatment is Imagery Rescripting, though studies so far indicated good effects, less dropouts than imaginal exposure (thus high acceptability), and a wider effectiveness than imaginal exposure, that is that a broader range of emotional disturbances is successfully addressed than with the more common imaginal exposure treatment (Arntz, 2012; Arntz et al., 2013). In particular guilt, shame, anger as well as problems with anger control seem to improve more with ImRs than with Imaginal Exposure (Arntz et al., 2007). ImRs is also incorporated in the well-known and highly effective Cognitive Therapy protocol developed by Ehlers and Clark (2000). ImRs involves imagining a different course of the sequence of events that ended in the traumatic experience, in such a way that needs of the patients are met. Although patients are well aware of the fantasy aspect of the technique, the experience of imagining a different sequence that satisfies the needs of the patient leads to a change in the meaning of the memory of what originally happened (Arntz & Weertman, 1999; Arntz, 2012). ImRs seems especially suitable for interpersonal traumas, where issues play a role like violated trust in other people, guilt and shame, and built up anger towards the perpetrator.

Whilst ImRs is probably based on the change of meaning of trauma memories, EMDR seems to rely on a different mechanism, that is the weakening of the sensory (esp. the visual) aspects of the trauma memory – brought about by the simultaneously taxing of the visual working memory by the trauma memory and a visual task (e.g., following the movement of the fingers of the therapist with the eyes) (e.g., Engelhard et al., 2010, 2011; see van den Hout & Engelhard, 2012)).

Although both ImRs and EMDR seem to be highly acceptable and effective treatments of PTSD, the two approaches have never been directly compared. Moreover, there is a lack of studies on the effectiveness of EMDR in the treatment of PTSD that is related to childhood traumas, raising the question how effective EMDR is for this kind of PTSD. Nevertheless, EMDR is widely applied for such traumas, which calls for studies to test the effectiveness of EMDR for such applications.
Moreover, it is unclear whether in clinical reality the assumed different working mechanisms of ImRs and EMDR are actually responsible for their effects.

2. Aim

The primary aim of the study is to compare the effectiveness of ImRs and EMDR as treatment for childhood-trauma based PTSD in adults. A secondary aim is to test whether different working mechanisms underlie the two treatments.

3. Study design

The study is a multi-centre Randomized Clinical Trial (RCT). There will be five or six assessments: at start of wait (if applicable), just before treatment, halfway treatment, after treatment, 8 weeks after treatment, and at 1-year follow-up. At participating sites there usually is a naturalistic wait of approximately 6 weeks (estimated mean). To assess changes due to time only, assessments take place before and after wait. In case there is no naturalistic wait before treatment can start, the pre-wait assessment will be skipped. At start of every session a self-report of PTSD symptoms will be taken to explore whether treatments differ in their speed of improvement in the three symptom clusters of PTSD.

4. Study Population

4.1. Population

Patients with a primary diagnosis of PTSD due to trauma(s) that took place before the age of 16 will be recruited at the participating mental health centres: Virenze RIAGG Maastricht (Maastricht, the Netherlands), PsyQ Beverwijk and PsyQ Amsterdam (Beverwijk & Amsterdam, the Netherlands), GGZ Noord-Holland Noord (Heerhugowaard, the Netherlands), Sinaï Center (ARKIN) (Amstelveen & Amersfoort, the Netherlands), the Sexual Assault Resource Centre (Perth, Australia) and the University of Lübeck (Lübeck, Germany). Male and female patients within the age range of 18-70 will be included in the study if they meet the criteria for PTSD based on DSM IV as their
primary diagnosis, assessed with the SCID-I or the MINI, and if the index trauma happened before the age of 16.

4.2. Inclusion criteria

- PTSD as defined by the DSM-IV, assessed with the SCID-I or the MINI.
- PTSD as main complaint
- Duration of PTSD > 3 months.
- Index trauma happened before the age of 16 - patient agrees that index trauma is focus of treatment
- If a recent trauma occurred: recent trauma happened more than 6 months ago
- Age 18-70
- Ability to understand, read, write and speak country’s language. In German and Dutch sites, the English language is also possible, if the site has research assistants and therapists of both conditions that are sufficiently fluent in English.

4.3. Exclusion criteria

- Acute PTSD
- DSM-IV alcohol or drug dependence. (After 3 months of abstinence participation is possible).
- Use of benzodiazepine (patients are motivated to stop benzodiazepine use in order to follow treatment protocol) (After 2 weeks of abstinence participation is possible)
- Comorbid psychotic disorder
- DSM-IV Bipolar disorder, type 1 (current or past)
- Acute suicide risk
- IQ < 80
- Scheduled to begin another form of PTSD treatment
- PTSD focused therapy within the past 3 months. If patients are in treatment for PTSD, there should be a 3-months treatment free period before they can participate in the study. PTSD-
focused treatment includes emotion-regulation treatments for PTSD like STAIR and other PTSD-focused treatments, but not general supportive treatments.

- patients should not start with any form of psychological treatment or medication during screening or during the study’s treatment or waitlist period. Medication should be on a stable level for 3 months, if not stopped. (Non-PTSD focused supportive treatment may be continued during wait and screening, but not during the study treatment and study post-treatment 8-week follow-up period)
- Not able to plan 12 sessions of 90 minutes within 6 to 8 weeks, time in between the sessions needs to be at least 2 days

Note. No other psychological treatment during the study period (12 sessions + 8 week FU) is allowed.

4.4. Sample size calculation

With a sample size of N=128 the study is powered at 80% to detect a medium effect size of Cohen’s d = .5 at a two-tailed significance level of .05. To replace early dropouts (estimated 10%) the sample size is increased to N=142. Actual power will be higher because of the use of mixed regression (taking all available data into account) and use of covariates that reduce standard error. We expect to recruit a minimum of N=20 participants at each site.

5. Treatment

5.1. Investigational treatment

A maximum of 12 90-minutes sessions twice a week of either ImRs or EMDR will be provided: Patients that have successfully completed treatment before they reach the maximum of 12 sessions are allowed to complete treatment earlier but will be assessed at the planned assessment moments. Therapists need to meet the following criteria.

- For EMDR: successfully completed basic training course in EMDR, 2-day training in EMDR for PTSD related to childhood trauma for the present study
- For ImRs: successfully completed basic training course in CBT, 2-day training in ImRs for PTSD related to childhood trauma for the present study

- For both arms, therapists need to demonstrate their capacity to deliver the treatment(s) with pilot patients (not being part of the study sample) to the local peer-supervision group and site coordinator by video recording. In case of doubt the EMDR expert (Chris Lee) or the ImRs expert (Arnoud Arntz) is consulted.

Therapists will meet every week for one hour for peer-supervision or supervision by an EMDR or ImRs specialist and can use video recordings of sessions for peer-supervision.

5.2. Use of co-intervention

Patients may continue taking medication for PTSD or other psychological complaints throughout the study. Patients who started with medication for PTSD or other psychological complaints within 3 months prior to the initial screening will be excluded from participation. No other psychological or new pharmacological therapy is allowed during treatment. Medication use is monitored during the study.

5.3. Escape medication/treatment

Participants might start taking medication or another form of treatment/therapy in case of acute crisis during the study. The use of these medications or crisis intervention during the study as co-intervention will not lead to exclusion from the study, but will be monitored, documented, and reported.

5.4. Further treatment

Eight weeks after completion of the 12 treatment sessions a research assistant will conduct the first follow-up assessment. Next, the therapist will see the patient for an evaluation to determine if more treatment is needed. The kind, intensity and frequency of this further treatment will be determined based on the participant’s needs and the center’s possibilities, and will be monitored, documented and reported. In the case of patients requesting help during the 8-week
follow-up period, they have to contact the site coordinator, and not their therapist, for an evaluation.

6. Methods

6.1. Main study parameter/endpoint

The main outcome variable is change in severity of PTSD symptoms shortly after the intervention phase (assessed at 8 weeks follow-up), compared to severity of PTSD symptoms during the baseline phase.

The severity of PTSD will be assessed using the CAPS, a structured interview that assesses DSM5 defined PTSD symptoms during the last month (Weathers, Blake, Schnurr, Kaloupek, Marx & Kaene, 2013). The CAPS yields a dimensional total severity score, a dimensional score per symptom cluster, and diagnostic status. The CAPS will be taken by trained independent research assistant, blind for treatment condition.

6.2. Secondary study parameters

1. **Self-reported PTSD-symptoms** are assessed with the Impact of Events Scale – Revised (IES-R, Creamer et al., 2003), at every assessment as well as at start of every session. An additional 4-items have been included to assess shame, anger, guilt, and disgust (Arntz et al., 2007). Therapists can use these ratings to steer the treatment.

2. **Depression** will be assessed with the BDI-II (Beck, Steer, & Brown, 1996; Van der Does, 2002), a 21-item self-report instrument assessing depressive symptoms during the last two weeks.

3. **PTSD-related cognitions**: the PTCI, a self-report instrument, is used to assess trauma related cognitions (Foa et al, 1999).

4. **Guilt** will be assessed with the Trauma-Related Guilt Inventory (TRGI, Kubany et al., 1996).

5. **Shame** will be assessed with the Trauma-Related Shame Inventory (TRSI, Øktedalen, Hagtvet, Hoffart, Langkaas, & Smucker, 2014).
6. **Anger** will be assessed with the Self-Expression and Control Scale (SECS) (van Elderen et al., 1996, 1997; Dutch: Zelfexpressie en -controle vragenlijst, ZECV; van Elderen et al., 1995), and with the hostility subscale of the Symptom Checklist-90-Revised (SCL-90, Arrindel & Ettema, 1986; Derogatis, 2010).

7. **General, social and societal functioning** will be assessed with the WHODAS, taken by the research assistant who is blind for condition (WHO, 2000; 2001).

8. **Remoralization** is measured with the Remoralization questionnaire (Vissers et al., 2010).

9. **Happiness** is assessed with the 1-item happiness question validated in more than 30 countries (Veenhoven, 2011)

10. **Dissociative experiences** will be assessed with the Dissociative Experiences Scale Taxon (DES-T; Waller, Putnam, & Carlson, 1996)

11. **Medication use** will be monitored during treatment and at each assessment.

12. **Vividness, valence and encapsulated belief(s)** will be assessed by having the participants rate these aspects on a 0-100% scale immediately after shortly imagining their memory of the index trauma (cf. van den Hout & Engelhard, 2012; Engelhard et al., 2011; Wild et al., 2007; Kwon et al, 2013).

13. **Schema modes** are assessed with the Schema Mode Inventory (SMI; Lobbestael et al., 2008) to explore whether EMDR and ImRs have similar or different effects on the personality level.

**6.3. Randomisation, blinding and treatment allocation**

An independent central research assistant will randomize participants to treatment condition after checking all in- and exclusion criteria. Randomization will be based on block randomization (n=2, 4, and 6 per block, with block size randomized) per site, to guarantee a balance between conditions per site and over time, and stratified for gender, so that the gender distribution is controlled per arm per site. Blinding of participants and therapists to treatment condition is not possible in this kind of psychotherapy trial, but the independent research assistants that will conduct the assessments will be blind to treatment condition.
6.4. Study procedures

6.4.1. Screening procedures

During the screening procedure for this study patients will be assessed for eligibility to participate based on the in- and exclusion criteria described earlier. To assess syndromal disorders, the SCID or the MINI will be taken, the choice of instrument depending on the preference of the participating site. During the screening procedure assessment of participant’s trauma experiences will be conducted and an index trauma memory, one that the participant reports as a worst memory, will be identified.

Lifetime trauma exposure will be assessed using the Life Events Checklist. The Life Events Checklist (LEC) is a 17-item self-report questionnaire developed to screen for lifetime exposure to traumatic events, including emotional abuse/neglect and physical neglect. The LEC will be administered once at the start of the assessment process to identify traumatic events and enable distinction between single and multiple trauma experiences (LEC, Weathers, Blake, Schnurr, Kaloupek, Marx, & Keane, 2013b).

Specific characteristics of the index trauma will be assessed using a semi-structured imagery interview. This will determine the subjective vividness, valence, and encapsulated beliefs’ strength associated with the index trauma memory (Hackmann et al., 2000). The same trauma memory will be used for repeated assessments of its subjective vividness, valence, and encapsulated belief(s). Previous treatments, and whether or not they were PTSD-focused and of what type, will be recorded at baseline.

6.4.2. Study assessment moments

Outcome instruments will be assessed before naturalistic wait, at baseline (just before treatment starts), after 6 sessions (3-4 weeks of treatment), after another 6 sessions (another 3-4 weeks) at post-test, 8 weeks after the last session, and at a one-year follow-up (one year after baseline just before treatment starts).

6.4.3. Assessment procedures
An independent research assistant at the site who is blind for the patients’ treatment condition will take the interviews and have the participant fill out the self-report instruments at a PC. Each assessment will take 3 hours at max. Patients and therapists will not be informed about the results of assessments, until the evaluation after the assessment 8-weeks after treatment completion. To assess treatment integrity, all sessions will be video recorded and per participant a random sample of the first 6 sessions and a random sample of the last 6 sessions will be drawn to be rated by independent trained judges for treatment adherence, blind for condition. The videos will also be used to study other issues that might be raised during the study, e.g. the therapeutic alliance, and exploration of immediate effects of specific micro-techniques. Recordings will be destroyed 5 years after publication of the main findings.

7. Statistical analysis

Mixed regression analysis taking all available data into account will be used to analyse the data. For diagnostic outcome mixed logistic regression analysis will be used, for skewed distributions mixed gamma regression, for medication use Poisson or negative binomial regression.

8. Adjacent studies

8.1. Specificity of memories

An adjacent study aims to test whether memories of single trauma are more specific and consistent than those of repeated traumas. Participants are asked to write an account of the index trauma and where there are multiple traumas that constitute the index trauma, to describe the one they have the clearest memory of, at baseline and again at follow-up. The complete task will take about 30 minutes. The (anonymized) reports will be coded by independent raters blind for whether the trauma is single or repeated. Narratives will also be coded for use of event-specific and generic information, on coherence, and on use of conceptual and sensory words by dividing them into utterance units, defined as clauses with a single thought, idea or action (see Jones et al., 2007). This adjacent study is done under direction of and in collaboration with Dr Amina Memon, Royal Holloway University, UK. An additional issue that will be explored is to what degree memory
accounts are influenced by treatment, and whether the two treatments differ in this respect. See appendix 1 for further information.

8.2. Qualitative study into patients’ perspectives

A second adjacent study will focus on the perspectives of patients on both treatments. Two topics will be explored in this qualitative study: topic one will look at the process of change and treatment engagement and processes; topic two will explore effective elements of the specific treatments, the relationship between these effective elements on PTSD symptom severity, and the differences between the two treatments. This will be done in a subsample of the study population, N=20 from Perth, and N=20 from the Dutch sites, with equal proportions from both arms. The appendix 2 describes the overall study in detail.

8.3. Change in schema modes as an index of personality problems

A third adjacent study will assess how schema modes change along the treatments, as an index of change in personality problems that are common in PTSD related to childhood trauma. Appendix 3 provides more information.

8.4. Essential ingredients of ImRs: an observational study

This study will use video recordings of ImRs sessions to explore on a microscopic observational level what specific ingredients of ImRs are associated with change, with a specific focus on two possible processes: expression of inhibited action tendencies and need fulfilment. See Appendix 4 for more information.

9. Dissemination and Implementation

The results of the study will be disseminated in the scientific community by publications in scientific journals and presentations at scientific conferences. Clinicians will be informed by presentations at conferences attended by clinicians (e.g., the national and international conferences), chapters and books describing the protocol (or protocols if treatments don’t differ substantially). Moreover, trainings in the optimal method will be developed and offered to clinicians, as well as supervision in the superior technique. Among participating therapists are
teachers (e.g., courses in treatment of (complex) PTSD) and supervisors, which will facilitate dissemination. Implementation will be stimulated by offering in-company training and supervision, and by informing national clinical guideline committees.

10. Time schedule

September – October 2014: first training of therapists and research assistants

March-May 2016 second training of therapists and research assistants

October 2014: start of recruitment of patients, assessment of in/exclusion criteria, first assessments, first randomizations

November - December 2014: start of treatments, peer and specialist supervision, data are centrally stored, checked and prepared for analysis

September 2018: last treatments finish

September 2017- September 2019: Last Follow-Up assessments; analysing of outcome data, reports of results (articles, conferences). Start of dissemination and implementation activities.

11. References


doi: 10.1037/1082-989X.1.3.300


Life Events Checklist for DSM-5 (LEC-5). Instrument available from the National Center for PTSD at www.ptsd.va.gov


Appendix 1. Study protocol of substudy 1: Remembering what happens: consistency and accuracy of memory for repeated traumatic events

Investigator: Professor Amina Memon, Royal Holloway University.

Co-investigators: Chris Lee, Marisol Voncken, Eva Fassbinder, Arnoud Arntz

1. Introduction

Accuracy and validity of memories of for instance traumas is often based on data indicating consistency. However, research has found that consistency is not always a good indicator of accuracy (see Fisher et al., 2013 for a review). The present project aims at investigating whether this counterintuitive finding can be extended to those individuals who experienced multiple instances of abuse. Importantly, what we know from the memory literature on repeated events is almost exclusively based on studies of memory for single events in children, created in a laboratory environment. The study will investigate memories of adults for repeated traumatic events in participants’ real lives on consistency, and compare these to memories of non-traumatic events.

In healthy adults, two main theories help us understand how we retrieve memories of repeated events. The first is schema theory (Brewer & Treyens, 1981). Schemas are organised collections of information stored in long-term memory and are quickly accessible and flexible in their applications (Hastie, 1981). As the schema grows in strength, access to individual instances becomes more difficult (Fivush, 1984) and confusion between instances of repeated events is expected (Connolly et al., 2008). The second theory, namely fuzzy trace theory (FTT, Brainerd & Reyna, 1990), posits that generic details (gist traces) are encoded and stored simultaneously with the precise details of the event (verbatim traces). The rapid decay of verbatim traces (Reyna & Titcomb, 1977) makes it more difficult for us to access details about what may have occurred during specific instances of a repeated episode. Repeated similar experiences may strengthen gist traces in memory (Brainerd & Reyna 2004; Reyna & Kieran, 1994) and the tendency to make gist related errors increases with age (Brainerd et al., 2008; Connolly & Price, 2008). Hence we may
expect adult memory for repeated events to rely even more on gist than studies of young children’s memory for repeated events would lead us to expect. The reduced access to verbatim traces combined with the increased reliance on gist would lead to problems in source monitoring such that details from one event may be misattributed to another (Johnson, Hashtroudi, & Lindsay, 1993). This can have consequences in an adversarial legal setting where the prosecution relies upon a charge being specific enough to allow the accused to raise a defence (see Connolly & Price, 2013; Connolly & Read, 2006).

We will now briefly consider studies of children’s memory for repeated events (Brubacher et al., 2011, 2012; Connolly & Lindsay, 2001; Connolly & Price, 2006; Price et al., 2006). Brubacher et al. (2012) asked children (aged 4-8 years) to recall a single play activity session or four play sessions, which took place over a 2-week period. They found an age related increase in generic references when children were questioned about the repeated sessions. This parallels research showing that the memory reports of alleged child victims of repeated abuse are dominated by generic descriptions (Guadagno & Powell, 2009). Even when children are asked about differences among occurrences a typical response is “they were all the same” (Brubacher et al. 2013). Schneider et al. (2011) reported in a study of the language of interviewers’ questions in actual cases that children who allege repeated abuse are more likely to respond to episodic questions with generic answers (and less likely to respond with episodic details) as compared with children alleging and questioned about single events. As age increases, so too do the number of episodic details provided by the children (Connolly & Price, 2006) although source misattributions frequently occur when children recount one or multiple occurrences of an event (Powell & Thomson, 1996).

To summarise so far, a review of theory and research with child witnesses as well as case studies of alleged child victims leads us to expect recall of repeated events to rely on a mixture of specific and general event representations, which would be in line with both schema and fuzzy trace theory. Contrary to what one might expect, the literature also suggests obtaining a generic
description first may facilitate recall of episodic content (Connolly & Gordon, in press; see Brubacher & LaRooy, 2013 for a case study). Turning to the credibility of memories for repeated events, once again we could only find evidence in the literature on children’s memories, despite of a thorough search in several databases. Connolly et al. (2008) made adult participants watch video recordings of children describing an event. For half of the children, the event had been experienced once and for half of the children the event was the last in a series of similar events. All children were similarly accurate; however, repeat event children were judged to be less credible than the single-event children. An analysis of the content of the reports revealed that most of the variability in credibility ratings could be attributed to differences in consistency.

2. **Hypotheses**

Accounts provided by patients who have been multiply traumatised compared to those with a single trauma, and by patients with more severe symptoms, will show an increased reliance on generic rather than event-specific information, and increased inconsistency in their reports. We predict similar findings with neutral memories but less fragmented accounts than in the traumatic memories.

3. **Method**

The researcher will record whether the individual has suffered a single or repeated trauma and meets diagnostic criteria for PTSD in accordance with DSM-5. No personal data will be recorded other than patient age, gender, type of and age at trauma, and scores on the screening measures that are being administered as part of the RCT. A narrative memory report will be elicited at baseline before the patient begins therapy and again six weeks’ post-treatment. All patients will be using a PC to write an account of the index trauma and where there are multiple traumas to describe the one they have the clearest memory of. We will also elicit control accounts describing a neutral single or repeated event such as a day trip to a novel location (SE) or the birthday that is the clearest to them (RE). The Dutch interview data will be coded in Dutch using native Dutch speakers; sim. for German interviews. Narratives will also be coded for coherence by dividing them into utterance units, defined as clauses with a single thought, idea or action
(see Jones et al., 2007). There are many autobiographical memory studies showing similar linguistic features in English and Dutch studies (e.g., Hermans et al., 2008).

Patients will complete the tasks for the memory sub-study during screening and post-treatment assessment sessions of the RCT. All patients will be completing tasks individually on a PC. As part of the study participants are instructed to describe their clearest memory for the index trauma. This is the childhood event (before the age of 16) for which they will receive treatment. The memories will be typed into a PC by the patient during baseline data collection prior to the trial and once again 6-7 weeks later when they have completed the treatment phase of 12 sessions. The patients will also complete a control task where they give an account of a single or repeated event (for example, a birthday versus a visit to a novel location). It will be recorded whether the index trauma is a single or multiple event.
Appendix 2. Study protocol of the qualitative study.

Working title sub-study: Patients’ perspective on the effective working mechanisms in ImRs and EMDR; a qualitative study of patients’ perspectives

Researchers

Simone Menninga, GZ-psycholoog i.o. tot Klinische Psycholoog (PsyQ)
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Prof. dr. Arnoud Arntz, hoogleraar klinisch psychologie (UvA/UM)
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Dr. Helen Correia, Murdoch University, Perth, Australia

1. Introduction

Although both ImRs and EMDR seem to be highly acceptable and effective treatments of PTSD, it is often assumed by therapists that EMDR is less demanding for patients and therapists in comparison to other treatments. An interesting question rises what will be the opinion of patients participating in this study. The last decades’ patients’ perspectives are becoming more and more the subject of interest in research. As Katsakou et al. (2012; Ten Napel-Schutz, 2011) for instance state, patients’ experiences and opinions collected with semi-structured in-depth interviews might give essential information of a treatment, mainly because patient satisfaction is a significant indicator of the quality of care provided (i.e. Johansson et al., 2002).

Studies about patients’ experiences of treatment show a range of elements. Arias and Johnson (2013) show in their study about treatments of childhood sexual abuse survivors that informal and formal education, compassion and empathy, blame attribution to abusers and confronting abusers contribute to healing and recovery according to survivors’ viewpoints. Another study in comparing child molesters who received adjunctive EMDR therapy during their CBT-
relapse prevention program showed that several themes are important to patients for a positive outcome: recognition of the origins of distorted beliefs, increased empathy, clarifications of thoughts, raised consciousness as a self-management tool, self-esteem and emotion recognition and management (Ricci & Clayton, 2008). Ten Napel-Schutz (2011) found in their study about patients’ perspective on the introduction of imagery within Schema Therapy for personality disorders, that patients emphasize the importance of giving information, communication and support during the initial phases of imagery work.

Specifically, with PTSD resulting from childhood abuse it is often seen that therapists are hesitant to use treatments confronting patients with detailed trauma memories (like exposure therapy) due to concerns of alleged problems patients may have in managing emotions arising from trauma processing and subsequent adverse effects this might have on further treatment (see Raabe et al. 2011; Minnen et al. 2012; 2010). How patients themselves experience treatments that focus on trauma processing is however a neglected topic.

ImRs and EMDR have shown to be effective therapies, but there is still little known about the underlying processes and how the therapies can be optimized. The purpose of this qualitative substudy is to learn from the experiences of patients, in order to better understand the underlying processes of the two treatments and to further improve the treatment protocols.

2. Aim

In this study the experiences of 40 patients in the Netherlands and Australia are collected with semi-structured in-depth interviews. The same interview will be conducted in both countries.

Boterhoven de Haan (Australia) will investigate the overall opinion and satisfaction of patients in the followed treatments in both countries.

The objective of the project of Menninga et al. is to get a better overview of what patients in both countries see as the most effective elements in the followed treatment, EMDR vs. ImRs. We are interested in whether patients have experienced changes related to the techniques, and in which fields they have experienced the changes. Particular attention will also be paid to the
subjective vividness, valence and encapsulated beliefs’ strength associated with the index trauma memory (Hackmann et al., 2000).

The study aims to address the following questions:
- What are the most effective elements in the followed treatment according to patients?
- Is there a difference in patient perspective between the two treatments?
- Is there a relationship between the severity of PTSD symptoms and the effective elements of the treatments according to patients?

3. Study design

Following the 8-week follow-up assessment, semi structured in-depth interviews will be conducted with 20 patients in the Netherlands and 20 patients in Australia. In the Netherlands the interviews will be conducted by two interviewers. The interview questions are developed in collaboration with the investigators in Australia. The final interview will be constituted after piloting interviews with patients. All interviews will be transcribed, Dutch interviews will be translated into English, a collaborative coding frame will be developed and interrater agreement of assigning themes to text fragments will be assessed. After assigning themes and subthemes to all transcripts, interpretation will be completed and research reports written.

4. Study population: (see study protocol)

4.1. Population

Patients with a primary diagnosis of PTSD due to trauma(s) that took place before the age of 16 will be recruited at the participating mental health centres in the Netherlands and in Australia. Male and female patients within the age range of 18-70 years will be included in the study if they meet the criteria for PTSD based on DSM IV as their primary diagnosis, assessed with the SCID-I or the MINI, and if the index trauma happened before the age of 16. From the study sample a subsample (N=20 NL, N=20 AUS) will be invited to take part in this qualitative study. The patients will be evenly divided over countries and conditions (10 ImRs and 10 EMDR participants in the Netherlands, 10 ImRs and 10 EMDR participants in Australia). Furthermore, sampling will be
driven by maximization of diversity (age, gender, socio-economic status, ethnicity, etc.) following the methodological standards of qualitative research.

4.2. Inclusion criteria (see study protocol)

4.3. Exclusion criteria (see study protocol)

5. Intervention: (see study protocol)

6. Primary study parameters/ outcome of the study

   Effective elements of followed treatments according to patients

7. Secondary study parameters/ outcome of the study

   Not applicable

8. Nature and extent of the burden and risks associated with participation, benefit and group relatedness

   The burden for patients exists of time for the interview of one hour.

9. Dissemination and Implementation

   The results of the study will be disseminated in the scientific community by a publication in a scientific journal and presentations at scientific conferences.

10. Time schedule

    June 2016: start of qualitative interviews.

    September 2017: last treatments finish.

    November 2017: last interviews held.

    September 2017- September 2018: analysing the transcripts of the interviews, reports of results (article, conferences).
Appendix 3. Study protocol of sub-study 3: change in schema modes along PTSD treatment as index for change in personality problems.

Local research team GGZ-NHN

Mariel Meewisse (Manager Trauma Department GGZ-NHN)
Annet Nugter (Manager Research Department GGZ-NHN)
Thera Koetsier (researcher)
Martine Daniels (researcher)
Marit Pronk (research assistant)

1. Introduction

Child maltreatment is not only related to the development of PTSD (Ullman & Brecklin, 2002) but also to the development of personality pathology (Johnson et al., 2006, Lobbesteal et al., 2010). Many patients diagnosed with childhood-trauma related PTSD also suffer from comorbid personality pathology (Johnson et al., 2000). Difficulties in emotion regulation and interpersonal functioning are problems in PTSD as well as personality disorders. These problems substantially decrease the level of healthy functioning of patients in all life domains (Briere, Hodges, & Godbout, 2010; MacIntosh, Godbout & Dubash, 2015).

There are various evidence-based treatments for PTSD, and several have shown to be effective for childhood-trauma related PTSD (Ehring et al., 2014). The studies on PTSD and childhood-trauma related PTSD mainly focussed on the effects on PTSD symptoms. Very little is known about the effects on comorbid personality pathology. Some evidence is found for the reduction of emotion regulation problems and for improvements in interpersonal problems (Cloitre et al., 2010), anger control, externalisation of anger and hostility (Arntz, Tiesema & Kindt, 2007). One study examined the impact of PTSD treatment on comorbid personality disorders, and found significant reduction of the axis II pathology (Markowitz et al., 2015).
Another approach to personality pathology is the Schema Mode concept stemming from Schema Therapy. Schema modes reflect the emotional and cognitive states and coping responses that are active at a given time. Modes can be adaptive or maladaptive: the stronger the pathology of a patient, the more the number and intensity of the maladaptive modes (Young et al., 2003). Investigating the effect of the PTSD treatment on Schema Modes can offer a different and additional insight in the effects of the PTSD treatment on comorbid personality pathology. To the best of our knowledge no research has yet been done on the effects of PTSD treatment on Schema Modes.

2. **Aim**

In this study we want to investigate the effectiveness of ImRs and EMDR on comorbid Schema Modes. Both interventions are applied in the treatment of PTSD as well as in the treatment of personality pathology (Arntz, 2015, Mosquera, Leeds, & Gonzalez, 2014). It is hypothesised that ImRs is more effective than EMDR in the reduction of dysfunctional Modes and the enhancement of the adaptive Modes. The main reason for this hypotheses is that ImRs is more directly aimed at modelling effective coping skills by the therapist in interpersonal relations, and encouraging patients to actively perform these skills. Therefore, the development of active coping of the client and of change of the meaning of the trauma-events is established. EMDR on the other hand is more aimed at the weakening of the sensory aspects of the trauma memory (Engelhard et al., 2010, 2011; see van den Hout & Engelhard, 2012). In addition, this study might provide insight into the correspondence between PTSD, Schema Modes and the PTSD treatment outcome.

**Research question**

Main: Is ImRs more effective than EMDR in the reduction of dysfunctional schema modes and the enhancement of the functional modes within patients suffering from childhood-trauma related PTSD?
Optional: To what extent is the severity of Schema Modes at baseline predictive for treatment outcome on PTSD symptoms? Is there a correlation between the efficacy of the PTSD treatment on Schema Modes and on PTSD symptoms?

Objective

To enlarge our knowledge of the effect of ImRs and EMDR on Schema modes. With this knowledge, we can improve treatment indications for patients suffering both from childhood-trauma related PTSD and dysfunctional Schema Modes.

3. Study design

Design

This is an additional research question within the multi-centre Randomized Clinical Trial on the effectiveness of ImRs vs EMDR as treatment of childhood-trauma related PTSD in adults.

In the main protocol, there are six to seven assessments within this study (see schedule below). In this additional study the Schema Modes Inventory (SMI) will be added at baseline, post-test and 8 weeks after baseline follow-up.

<table>
<thead>
<tr>
<th>Assessments</th>
<th>Instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td>If applicable;</td>
<td>CAPS, IES-R</td>
</tr>
<tr>
<td>Start Naturalistic wait</td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>CAPS, IES-R, SMI</td>
</tr>
<tr>
<td>After 6 sessions</td>
<td>CAPS, IES-R</td>
</tr>
<tr>
<td>After 12 sessions</td>
<td>CAPS, IES-R</td>
</tr>
<tr>
<td>Posttest</td>
<td>CAPS, IES-R, SMI</td>
</tr>
<tr>
<td>Follow-up (8 weeks after posttest)</td>
<td>CAPS, IES-R, SMI</td>
</tr>
<tr>
<td>Follow-up (one year after baseline)</td>
<td>CAPS, IES-R</td>
</tr>
</tbody>
</table>
Participating sites: GGZ-NNH, RIAGG Maastricht, Buro van Roosmalen (Roermond/Venlo/Venray), PsyQ departments Amsterdam & Beverwijk, Sinaï Centrum Amstelveen & Amersfoort, Universitätsklinikum Schleswig-Holstein, Lübeck, Germany, and Perth, Australia.

**Procedure**

Follows the study protocol of IREM.

**Data-analysis**

Mixed regression analysis.

4. **Study population**

The in- and exclusion criteria and sample size calculation (N=142) are in line with the study protocol of IREM.

5. **Intervention**

Imagery Rescripting (ImRs) versus Eye Movement Desensitization and Reprocessing (EMDR).

6. **Main study parameter**

   Schema Modes: Schema Mode Inventory (SMI).

   The SMI has been derived from the Schema Mode Inventory (long version, 270 items). The list consists of 118 items, which can be scored on a six-point Likert-type scale ranging from 1 (never or almost never) to 6 (always) (Young et al., 2003).

   There are English, Dutch and German versions, the last two are both validated and the results indicated a 14-factor structure and acceptable to good psychometric properties (Lobbestael et al., 2010, Reiss et al., 2012).

   The SMI is a self-report questionnaire that measures 14 Modes:

   - Vulnerable Child, Angry Child, Enraged Child, Impulsive Child and Undisciplined Child (domain 1: Maladaptive Child Modes);
- Compliant Surrender, Detached Protector, Detached Self-Soother, Self-Aggrandizer and Bully and Attack (domain 2: Coping Modes);
- Punitive Parent and Demanding Parent (domain 3: Parent Modes);
- Healthy Adult and Happy Child (domain 4: Healthy Modes).

Administration time is estimated at 20 minutes (Lobbestael, 2010).

7. Secondary study parameter

PTSD symptoms: IES-R, CAPS

8. References


Appendix 4. Essential ingredients of ImRs: an observational study

1. Introduction

According to the DSM-IV, Post-Traumatic Stress Disorder (PTSD) might result as the consequence of experiencing traumatic events. Traumatic events are defined as events in which the person experiences, witnesses or is confronted with actual or threatened death or serious injury, or a threat to the physical integrity of the person him/herself or others. The three clusters of PTSD-symptoms include re-experiencing the trauma, avoidance of trauma reminders, and hyper arousal. In the general population the prevalence of PTSD is 0.4%-2% and lifetime prevalence is 1-12%.

One of the evidence based treatment is Imagery Rescripting (ImRs). Imagery Rescripting is a collection of methods for working directly with imagery in order to change meanings and ameliorate distress (Hackmann et al., 2011). ImRs involves imagining a different course of the sequence of events that ended in the traumatic experience, in such a way that needs of the patients are met. Although patients are well aware of the fantasy aspect of the technique, the experience of imagining a different sequence that satisfies the needs of the patient leads to a change in the meaning of the memory of what originally happened (Arntz, 2012). ImRs seems especially suitable for interpersonal traumas where issues play a role like violated trust in other people, guilt and shame, and built up anger towards the perpetrator.

The last years there has been done a lot of research of the underlying mechanisms of ImRs. One explanation of ImRs is that it helps the patient to express inhibited action tendencies and get unmet needs met (Arntz, 2012).

Hypothesis: As more inhibited action tendencies are being expressed and unmet needs of safety are met, the PTSD symptoms will decrease in patients with early childhood trauma.

2. Aim

To clarify the working mechanisms of the ImRs protocol, in order to enlarge the chance of a successful treatment of PTSD-symptoms with clients with early childhood trauma.
3. Study design

The study is a multi-centre Randomized Clinical Trial (RCT). There are five or six assessments: at start of wait (if applicable), just before treatment, halfway treatment, after treatment, 8 weeks after treatment, and at 1-year follow-up. At participating sites there usually is a naturalistic wait of approximately 6 weeks (estimated mean). To assess changes due to time only, assessments take place before and after wait. In case there is no naturalistic wait before treatment can start, the pre-wait assessment will be skipped.

At start of every session a self-report of PTSD symptoms will be taken to explore whether treatments differ in their speed of improvement in the three symptom clusters of PTSD.

Substudy

All sessions will be audio recorded. Recordings will be destroyed 5 years after publication of the main findings. Non-drawn recordings will be destroyed immediately.

The records of ImRs will be rated by 2 independent trained judges on:

1. The expression of inhibited action tendencies
2. Get unmet needs met.

<table>
<thead>
<tr>
<th>Emotion</th>
<th>Action tendency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helplessness, fear</td>
<td>Attack the other and defend oneself</td>
</tr>
<tr>
<td>Helplessness, anger</td>
<td>Attack the other, to put the other in his place, to destroy the other.</td>
</tr>
</tbody>
</table>

What are inhibited action tendencies?

What are the unmet needs?

<table>
<thead>
<tr>
<th>Emotion</th>
<th>Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helplessness, fear</td>
<td>Safety, comfort, to express one's feelings, recognition</td>
</tr>
<tr>
<td>Helplessness, anger</td>
<td>Recognition, to express one's feelings, safety</td>
</tr>
<tr>
<td>Grieve</td>
<td>Safety, comfort, to express one's feelings, recognition</td>
</tr>
</tbody>
</table>
Guilt: Reassurance, reattribution, blaming the correct person

Shame: Idem.

Instruments:
- IES-R (Self-reported PTSD-symptoms)
- Caps

4. Study population

4.1. Population

Adult patients with a primary diagnosis of PTSD due to trauma(s) that took place before the age of 16 and participate in the IREM trial.

4.2. Inclusion criteria

See RCT study protocol.

4.3. Exclusion criteria

See RCT study protocol.

4.4. Sample size calculation

Will be based on a power analysis not yet completed.

5. Treatment

5.1. Investigational treatment

See RCT study protocol.

5.2. Use of co-intervention

See RCT study protocol.

5.3. Escape medication/treatment

See RCT study protocol.

5.4. Further treatment

See RCT study protocol.

6. Outcome

6.1. Main study parameter/endpoint
This will be a qualitative study using MAXQDA, a computer program for qualitative data analysis.

6.2. Secondary study parameters

N.A.

6.3. Randomisation, blinding and treatment allocation

See RCT study protocol

6.4. Study procedures

See RCT study protocol.

7. Statistical analysis

This will be a qualitative study using MAXQDA, a computer program for qualitative data analysis.

8. Adjacent study

N.A.

9. Dissemination and Implementation

The results of this substudy will be processed in a scientific article.

Presentations to enlarge the expertise of the participating therapists and other clinicians.

Findings will be used to adapt existing ImRs treatment protocols.

10. Time schedule

See RCT study protocol.

11. References


Chapter 7: Trauma-Focused Treatments Work for Childhood Trauma-Related PTSD: Assessing Palatability and Barriers to Implementation
Trauma-Focused Treatments Work for Childhood Trauma-Related Post-Traumatic Stress Disorder: Assessing Palatability and Barriers to Implementation

In chapters 5 and 6, the design and results of IREM, an international multi-site randomised clinical trial, were presented (Boterhoven de Haan et al., 2020). The findings from that trial included significant reductions in PTSD and secondary measures such as depression, dissociation, and trauma-related cognitions and feelings - all of which were maintained over time. In addition, the IREM dropout rate of 7.7% could be considered low when compared with the average 22% identified in a meta-analysis of childhood abuse treatments (Ehring et al., 2014). IREM was the first large-scale international trial that directly compared imagery rescripting (ImRs) and eye movement desensitisation and reprocessing (EMDR). The results of this research demonstrated that these two trauma-focused treatments were efficacious in reducing PTSD and the sequela of symptoms associated with childhood trauma experiences. In addition, the significant symptom reduction, low dropout rate, and small number of adverse events suggest that these treatments were acceptable to patients.

The current clinical reality however, is that recommended trauma-focused treatments, particularly cognitive behaviour therapy approaches, are not being utilised in everyday practice, despite evidence to support their effectiveness (Bisson, Roberts, Andrew, Cooper, & Lewis, 2013; van Minnen, Hendriks, & Olff, 2010). In essence, the gap between research and practice has been lost in clinical translation. This emphasises the need to understand more about treatment decision making and experiences to help improve their implementation and clinical utility. Adopting a qualitative research approach may be particularly useful in furthering our knowledge of treatment-related issues or barriers, gaining insights into the treatment experience, and identifying key processes or mechanisms relevant to patient change and outcomes (Chouliara et al., 2011; Holmes et al., 2018).

Patient and Therapist Factors

In the case of Ch-PTSD, patient and therapist factors have been identified as key contributors to the poor utilisation and effectiveness of treatments. While it has been claimed that patients do not have the
capacity for trauma-focused treatment, there is limited evidence to support this (Cloitre et al., 2011). In fact, research on Ch-PTSD presentations has found positive treatment outcomes irrespective of such perceived contraindications (Ehring et al., 2014). In addition, results have shown that treatment did not lead to symptom exacerbation (Powers, Halpern, Ferenschak, Gillihan, & Foa, 2010; Walter, Buckley, Simpson, & Chard, 2014). Patients have been found to prefer exposure-based treatments and given that patients are also key stakeholders in treatment outcomes, it seems pertinent that their views are considered (Becker, Darius, & Schaumberg, 2007; Simiola, Neilson, Thompson, & Cook, 2015). Of note is that research has found that therapists can be influenced by patients’ preferences for trauma-focused approaches (van Minnen, Hendriks, & Olff, 2010). Regardless, these findings do not explain why the recommended treatments are not being utilised in everyday clinical practice. Ultimately, the decision on treatment approach lies with the therapist. This highlights the importance of understanding the decision-making process, treatment-related barriers, and concerns from the therapist’s perspective (Frueh, Cusack, Grubaugh, Sauvageot, & Wells, 2006).

Taken together, the current understandings of best approach to treatment of Ch-PTSD may not accurately reflect the attitudes, experiences, and considerations of both patients and therapists. It indicates that both views need to be considered when trying to improve treatments and outcome for patients. Qualitative research methods are particularly suited to exploring treatment experiences and for gaining individual perspectives, however to date, only one study by Chouliara and colleagues (2011) has investigated the views of both patients and therapists for treatment of Ch-PTSD. This study reported on the benefits and challenges of talking therapy for childhood sexual abuse. Benefits included enhancing patient self-worth and breaking patient isolation in having someone to talk to about their experiences. Whereas challenges for treatment included difficulties with trauma-work and in hearing patients’ trauma experiences. While this study reported some interesting perceptions and experiences of talking therapies, most therapists were considered “eclectic” in their treatment approach, drawing on several models including cognitive behaviour, person-centred, or solution-focused treatments and therefore, they would not be considered as trauma-focused approaches.
Treatment Issues with Ch-PTSD

Important goals of research should be to advancing treatments and improve clinical translation. The research has identified how best to treat Ch-PTSD with the use of trauma-focused approaches however there is also evidence that the recommended treatments are not being utilised in everyday practice (Karatzias & Cloitre, 2019; Sprang, Craig, & Clark, 2008). Thus, more investigation is needed specifically on exploring different trauma-focused treatments, with the aim of elucidating and integrating both therapist and client factors that may enhance treatment implementation in future practice. ImRs and EMDR were found to be effective trauma-focused approaches that were well tolerated by patients. Given these results, it would be beneficial to use a qualitative research approach to explore the experience of these treatments to determine if they can help improve current practices.

Qualitative Studies on ImRs and EMDR

No qualitative studies have explored patient or therapists’ views on ImRs for Ch-PTSD. However, one study by Arntz and colleagues (2007) compared imaginal exposure with a combined imaginal exposure and ImRs condition for treating PTSD. In this study, 24% of the participants reported experiencing childhood trauma before 16 years of age. Following treatment, therapists were asked about their treatment preferences. Of the 7 therapists, 4 preferred the combined condition as they reported that the treatment was easy to apply, they felt less helpless, and were less impacted by witnessing the patients distress during treatment. In addition, therapists noticed that patients’ feelings of helplessness relating to their trauma also decreased.

Three studies were identified that explored EMDR in the treatment of patients with childhood trauma histories. In these studies, patients highlighted its effect including deeper level processing, resolution of trauma-related beliefs and memories, improved self-efficacy, and the ability to manage emotions following treatment (Edmond & Rubin, 2004; Marich, 2009; Ricci & Clayton, 2008). Two studies were identified that explored therapists’ use of EMDR for various trauma populations. Of these studies, one was conducted across several rape crisis centres which included populations with childhood sexual abuse and recent sexual assaults (Edmond, Lawrence, & Schrag, 2016). This study reported that only 8.2% of
participants had received a great deal of training in EMDR. Further, although more than half of the participants (56%) expressed interest in receiving EMDR training, their ability to access this, was impacted by training prerequisites and requirements such as being a licensed mental health professional. The second study by Cook, Biyanova, and Coyne (2009) compared EMDR use across two veterans’ affairs treatment settings. An interesting finding was that while this population were veterans with adult traumas, some of the therapists reported that they felt EMDR had advantages over other treatments including it being more acceptable to therapists, more efficient, and that it bypassed the shame of patients having to talk about their trauma experiences in great detail (Cook et al., 2009). These findings present an interesting argument for the use of EMDR and its benefits over other treatment approaches including being more palatable for therapists and less distressing for patients. However, the study by Edmond and colleagues (2016) also highlights the issue with therapists not having access to appropriate training. Taken together, while limited, there is preliminary evidence to suggest that ImRs and EMDR would be acceptable treatments for both patients and therapists however more research is needed (Arntz et al., 2007; Cook et al., 2009).

**Summary**

Our current understandings of the issues with Ch-PTSD is based on the outcomes of research studies reporting patient results and treatment dropout rates. There is no clear evidence to support the belief that Ch-PTSD treatments would not be tolerated by patients. In fact, the research making these claims are based on the views of therapists. It seems remiss that there has been limited consideration to the views of the patients. Of particular interest to this thesis are studies that have looked at patients’ experience of treatment. These studies consistently find that patients believe that it is important to confront their past trauma experiences.

To date, most of the qualitative studies have captured the views of either the patients or the therapists and there is only one study identified that integrates and synthesises the perspectives of both sides of treatment for Ch-PTSD. Moreover, the main treatment investigated has been trauma-focused cognitive behaviour therapy approaches and little focus has been given to other trauma-focused treatments such as ImRs and EMDR. With this in mind, two qualitative studies were conducted to explore
the Ch-PTSD treatment experience with two different trauma-focused approaches, ImRs and EMDR. A sample of IREM patients and therapists participated in semi-structured interviews to explore their experience of treatment. The combined results of this research are presented in chapter eight.
References


Chapter 8: Patient and Therapist Perspectives on Treatment for Adults with PTSD from Childhood Trauma

Abstract

Objectives: This study aimed to explore patient and therapists’ perspectives on using trauma-focused treatments for adults with post-traumatic stress disorder arising from childhood traumas (Ch-PTSD).

Design: Patients and therapists in this study were involved in IREM, an international multicentre randomised clinical trial investigating the effectiveness of two trauma-focused treatments for adults with Ch-PTSD experienced before 16 years of age.

Methods: Semi-structured qualitative interviews were conducted with IREM patients (n = 44) and therapists (n = 16) across Australia, Germany and the Netherlands. Thematic analysis was used to identify key themes within the data.

Results: Five super-ordinate and nine subordinate themes were identified with patients and therapists having many shared views in relation to trauma-focused treatments. Themes were divided into the patient treatment process which included being prepared for therapy (in that the patients were willing and there was sufficient trust in the therapist), on the treatment per se (acknowledging the difficulty or discomfort as a result of trauma processing but describing it as necessary), and the nature of change (that patients gain an understanding of their trauma experience and/or developed inner resources). The other theme cluster related to treatment specific factors including suggestions for improving treatment and key considerations for treatment which was unique to therapists and involved factors likely to impact treatment effectiveness including therapist confidence (in themselves and their patients), avoidance (for fear of patients destabilising or therapist discomfort), and adherence (helpful and unhelpful aspects of adhering to treatment).

Conclusions: This is the first study that integrates patient and therapist perspectives on treatment for Ch-PTSD. Important mechanisms for treatment include patients confronting their traumatic past, and gaining new insights, which leads to patients developing their self-efficacy and self-worth and a more optimistic outlook for their future. Both patients and therapists reported that directly confronting past trauma was useful and necessary albeit, a difficult process. Clinical implications
from this research indicate that most prefer to start trauma work sooner however, some patients
will need to feel more comfortable with their therapist or may need to develop their skills prior to
trauma processing. Therapists should use the therapy relationship to help develop the patients’
willingness. These reported experiences add further support to the idea that trauma-focused
treatments without stabilisation can be tolerated and are useful for individuals with Ch-PTSD.

*Keywords:* Post-traumatic stress disorder (PTSD), trauma-focused treatment, childhood
trauma, patients, and therapists

**Practitioner Points**

- Patient willingness for treatment and trauma processing is important for treatment
  engagement and improving outcomes. Patient willingness can be facilitated by therapists
  creating a safe environment and working alliance with patients.

- Important components of trauma treatment include patients confronting their past trauma,
gaining new insights or understanding, and developing their inner resources and a sense of
  agency.

- Therapists having confidence in their own ability and their patients’ capacity to tolerate
  trauma processing can help overcome treatment avoidance.

- Therapists engaging in individual or peer supervision to discuss treatment issues or concerns
  is beneficial for promoting confidence, treatment implementation and effectiveness.
The complex psychopathology of adults with post-traumatic stress disorder from childhood experiences (Ch-PTSD) has been considered as detrimental to the effectiveness of treatment. To date, the predominant research focus has been on trauma-focused cognitive behaviour therapies, particularly prolonged exposure approaches, or phase-based treatments (Bohus et al., 2013; Cloitre et al., 2011; Karatzias et al., 2019). However, phase-based treatments have been criticised for individuals not receiving the appropriate treatment for their trauma and despite the evidence base for the effectiveness of trauma-focused treatments, we know that these treatments are not being utilised regularly in everyday practice (de Jongh et al., 2016; Foa, Gillihan, & Bryant, 2013). Given the evident clinical translation gap, there is a clear need to explore different trauma-focused treatments, and to understand factors that facilitate or impede their implementation. Qualitative research methods are well positioned in this context, where they have increasingly been used to gain a deeper understanding of key processes and barriers to treatments and to help provide valuable insights for improving their utilisation and effectiveness (Chouliara, Karatzias, & Gullone, 2014; Lowe & Murray, 2014).

The most pertinent factors that reportedly interfere with treatment efficacy relate to patients and therapists. Commonly cited contraindicators for patients include concern of symptom exacerbation, comorbid diagnoses, avoidance or unwillingness for treatment, and limited distress tolerance skills. It is worth noting however, that these patient-related treatment issues are largely based on the opinions of therapists (Cloitre et al., 2012; Cook, Schnurr, & Foa, 2004; van Minnen, Harned, Zoellner, & Mills, 2012). Where studies have focused on patient treatment preferences, most patients opt for exposure based strategies over other psychotherapies, and the opportunity to talk about their trauma (Becker, Darius, & Schaumberg, 2007; Simiola, Neilson, Thompson, & Cook, 2015). In contrast, therapist focused research has reported therapist’s own reluctance to implement trauma-focused treatments with concerns including fear of opening Pandora’s box, limited belief in the credibility of treatments, or doubting their own competence.
Given there appears to be treatment related barriers and issues with both patients and therapists, there is much to be gained from exploring the views from both perspectives. There are very few studies that have integrated and synthesised patient and therapist views on treatment and only one study by Chouliara and colleagues (2011) that has specifically focused on Ch-PTSD however, not with a trauma-focused approach (Cook et al., 2004). Research has so far mainly focused on prolonged exposure approaches and this therefore suggests, there is utility in exploring the experience of other trauma-focused approaches. Imagery rescripting and eye movement desensitisation and reprocessing (EMDR), are trauma-focused treatments which have been suggested as being particularly suited to treating Ch-PTSD as they limit exposure to trauma memories (Arntz, 2012; Shapiro, 2001). With this in mind, the purpose of this study was to explore both patients and therapists’ perspectives of the Ch-PTSD treatment experience using two different trauma-focused approaches to elucidate experiences that can improve current practices.

**Method**

**Study Context and Design**

Study participants were patients and therapists involved in IREM, an international randomised clinical trial investigating the effectiveness of ImRs and EMDR in the treatment of childhood trauma-related PTSD. Australian New Zealand Clinical Trials Registry ACTRN12614000750684. Ethics approval for this study was obtained from the relevant ethics committee in each country.

In IREM patients were randomly allocated to treatment condition which included 12 sessions, twice weekly for a period of six to eight weeks. Eligible participants had a primary diagnosis of PTSD related to trauma experienced before 16 years of age. Exclusion criteria included benzodiazepine use, acute suicide risk, comorbid psychotic disorder, bipolar disorder type 1, and alcohol or drug dependence.

Therapists provided either ImRs, EMDR, or both treatments to IREM patients. Therapists were required to attend a 2-day advanced workshop in the chosen treatment following basic training and attend regular supervision throughout the trial. Additionally, therapists were required to demonstrate
competence in the treatment prior to treating IREM participants by seeing pilot patients which was video recorded and assessed by the local site coordinator. Full methodology and design for IREM is outlined in an earlier publication (Boterhoven de Haan et al., 2017). The final sample and treatment outcomes are reported in (Boterhoven de Haan et al., 2020).

Table 8.1

Demographic information and characteristics of IREM patients

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>No. (%) of Patients³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, Mean (SD), years</td>
<td>40 (12.16)</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>32 (72.7)</td>
</tr>
<tr>
<td>Male</td>
<td>12 (27.3)</td>
</tr>
<tr>
<td>Relationship Status</td>
<td></td>
</tr>
<tr>
<td>Partner</td>
<td>28 (63.6)</td>
</tr>
<tr>
<td>Education level</td>
<td></td>
</tr>
<tr>
<td>High school or less</td>
<td>13 (29.6)</td>
</tr>
<tr>
<td>College or above</td>
<td>31 (70.3)</td>
</tr>
<tr>
<td>Work status</td>
<td></td>
</tr>
<tr>
<td>Working</td>
<td>19 (43.1)</td>
</tr>
<tr>
<td>Disability pension</td>
<td>11 (25.0)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>9 (20.5)</td>
</tr>
<tr>
<td>Other</td>
<td>5 (11.4)</td>
</tr>
<tr>
<td>Psychological History</td>
<td></td>
</tr>
<tr>
<td>PTSD duration, Mean (SD), months</td>
<td>237.82 (183.54)</td>
</tr>
<tr>
<td>Co-morbid mood disorder</td>
<td>32 (72.7)</td>
</tr>
<tr>
<td>Co-morbid anxiety disorder</td>
<td>25 (56.8)</td>
</tr>
<tr>
<td>Previous Treatment</td>
<td>34 (77.3)</td>
</tr>
<tr>
<td>Previous Psychiatric Admission</td>
<td>21 (47.7)</td>
</tr>
<tr>
<td>Index Trauma History³</td>
<td></td>
</tr>
<tr>
<td>Sexual Abuse/Assault</td>
<td>23 (52.3)</td>
</tr>
<tr>
<td>Physical Abuse</td>
<td>13 (29.5)</td>
</tr>
<tr>
<td>Other</td>
<td>8 (18.1)</td>
</tr>
<tr>
<td>Index trauma onset, Mean (SD), years</td>
<td>7.57 (3.78)</td>
</tr>
<tr>
<td>Index trauma duration, Mean (SD), years</td>
<td>8.25 (4.50)</td>
</tr>
</tbody>
</table>

³Percentages have been rounded and may not total 100

Index trauma relates to trauma experienced before 16 years of age
Table 8.2

*Characteristics of IREM therapists*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>No. (%) of Therapists&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, Mean (SD), y</td>
<td>42.38 (7.84)</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>14 (87.5)</td>
</tr>
<tr>
<td>Male</td>
<td>2 (12.5)</td>
</tr>
<tr>
<td>Country</td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>3 (18.8)</td>
</tr>
<tr>
<td>Germany</td>
<td>4 (25.0)</td>
</tr>
<tr>
<td>Netherlands</td>
<td>9 (56.3)</td>
</tr>
<tr>
<td>Theoretical Orientation</td>
<td></td>
</tr>
<tr>
<td>CBT</td>
<td>15 (93.8)</td>
</tr>
<tr>
<td>Schema Therapy</td>
<td>10 (62.5)</td>
</tr>
<tr>
<td>EMDR</td>
<td>7 (43.8)</td>
</tr>
<tr>
<td>DBT</td>
<td>5 (31.3)</td>
</tr>
<tr>
<td>Therapy Experience, Mean (SD), y</td>
<td></td>
</tr>
<tr>
<td>Years of practice (overall)</td>
<td>16 (8.97)</td>
</tr>
<tr>
<td>Years with CPTSD</td>
<td>7.13 (6.78)</td>
</tr>
</tbody>
</table>

<sup>a</sup>Percentages have been rounded and may not total 100

Participants

A sub-sample of IREM patients and therapists were used for this qualitative study. Overall there were 44 patients with PTSD from childhood trauma and 16 therapists who treated patients are part of the IREM RCT. Demographic information for participants used in this study are displayed in Table 8.1 and therapist characteristics are displayed in Table 8.2. Therapist experience in therapy overall ranged between 5 to 36 years and experience working with Ch-PTSD ranged between 0 to 28 years.

Semi-Structured Interview

A semi-structured interview addressing the study aim was developed by author KBdH, informed by the literature, and reviewed by authors HC and CL. Interview questions were revised iteratively using feedback from multiple rounds of pilot interviews with patients and therapists who had experience of the treatments, but were not involved in IREM. Interview questions related to overall experiences, nature of change, the treatments, childhood trauma treatment and the research project. Examples of interview
questions include “What do you think are the important components of therapy that facilitate change” and “Can you tell me about the therapy you received and your thoughts about it?”

**Procedure**

Patients from four different sites (Australia, Germany and two sites in the Netherlands) were approached to participate in the interviews following the 8-week post-treatment assessment. Therapists from each site were initially emailed by their site coordinator and a follow up email by author KBdH to request their participation. Participant information sheets were provided to every person who agreed to be interviewed and signed informed consent was obtained.

Patient interviews were conducted in the language of the site and were carried out by trained and supervised research assistants. Therapist interviews were all conducted by author KBdH. Interviews were audio-recorded and lasted approximately 60 minutes. At the conclusion of each interview, a verbal summary was given by the interviewer where feedback was encouraged. After translation of the interviews, a member-checking process was utilised with a written summary of interview transcripts provided to participants asking for corrections or feedback. No changes were made as a result of this process. Finalised transcripts and summaries were uploaded to MAXQDA software (VERBI Software, 2017).

**Data Analysis**

While the patient and therapist groups were treated separately, the data analysis process followed the same methodology. For the purposes of the current study, data across treatment conditions was combined as the focus was on elucidating elements of trauma-focused treatment for Ch-PTSD to enhance treatment for this population. The research team used both an a priori directed approach, which was influenced by topic areas of the interview questions, and inductive identification of codes and themes across topics using thematic analysis (Braun & Clarke, 2006) as it allowed for open, flexible coding to identify themes relevant across different groups and sites. To enhance credibility and confirmability in the development of codes and themes during the analysis, the multi-step analysis process was an iterative series of individual coding, peer debriefing, researcher triangulation, and testing for referential adequacy.
(Nowell, Norris, White, & Moules, 2017). To reduce potential bias, both the research assistant involved in the coding and author HC were independent of the IREM study.

Author KBdH and a research assistant, became familiar with the data, reading and re-reading transcripts to identify, analyse, and record patterns (Braun & Clarke, 2006). Independent line by line analysis was used to identify preliminary codes from an initial pool of interviews. These interviews were also analysed by author HC with peer debriefing around initial impressions of codes and a coding framework. The stages of identifying emerging themes and reviewing themes followed a similar iterative process of reviewing and consulting with authors HC and CL, testing for referential adequacy by returning to the raw data (Nowell et al., 2017). These stages of analysis focused on identifying underlying codes and themes across interview topics. Themes were identified at a semantic level (realist method) where analysis focused on describing and interpreting the explicit or surface meanings of the data (Patton, 1990). Themes were then more clearly defined, identifying relationships between themes and subthemes.

Evidence-based recommendations for topic saturation suggest that saturation occurs within the first 12 interviews, and that basic meta-themes are identified as early as six interviews. Furthermore, it was expected that each group would have a relatively high level of homogeneity, whereby topic saturation would be achieved sooner than 12 interviews (Guest, Bunce, & Johnson, 2006).

**Results**

Results of the analysis identified super-ordinate and subordinate themes for the treatment process, see Figure 8.1, and for treatment considerations, see Figure 8.2. Patients and therapists had many shared views in relation to the treatment process including: preparation for treatment, treating the trauma, and the nature of change. Treatment considerations was unique to therapists, however, both patients and therapists discussed ways of improving treatments.
Figure 8.1

Superordinate and Sub-ordinated themes on the Patient Treatment Process

- **Preparation**
  - Willingness
    - **Patients:** Being willing for treatment and for trauma processing
    - **Therapists:** Readiness for trauma work and committing to treatment
  - Therapeutic Relationship
    - **Therapists:** Aspects of the relationship and how important it actually is

- **Treating the trauma**
  - Timing is Everything
    - **Patients and Therapists:** When to start trauma work and how much preparation is needed
  - Going Back to the Source
    - **Patients:** Important to go back to the childhood trauma memory
    - **Therapists:** Exposure is to trauma and having a new experience
  - Difficult but Necessary
    - **Patients:** It is hard but what needs to happen
    - **Therapists:** Difficult to see patients distressed

- **Nature of change**
  - Trauma in Context
    - **Patients:** Learning they were not at fault
    - **Therapists:** Patients gaining understanding
  - Seeing the Possibilities and Making Changes
    - **Patients:** Seeing future possibilities
  - The Changed Self
    - **Patients:** Feeling empowered and developing personal agency
Preparation for Treatment

Willingness

Both patients and therapists discussed the need for willingness. This willingness was related to the readiness of the patient to commit to treatment, and to addressing their trauma:

Participant 19: Of course the willpower that you really want to change something. That is the most important. If there is no willpower, it won’t work. If I want to change something and work on such a trauma, then I really have to want it.

Participant 9: I think this treatment would work the vast majority of cases, but … everybody is different … I got out of it, because I gave a lot into it. I came here when I didn’t want to, and would still jump in … and still get involved, as how hard it was.

Therapist 16: Well, certainly the motivation … the readiness, you know, to do trauma work. It's helpful, you know, just in terms of people's ability to come and commit and to tolerate the work.

Therapeutic Relationship

Therapists identified the therapeutic relationship as important to help create a safe and supportive environment for patients. Therapists reported that this relationship helped to facilitate change:

Therapist 10: It’s the working alliance … there's enough safety in the structure and the rules. It's clear what's going to happen, that the patient has control or is in control.

Therapist 15: If you have good contact and … they trust you, … people will change because in time they trust themselves and feel comfortable … then they can change by themselves, I don’t change.

The importance of the therapeutic relationship was not shared by all therapists and patients:
Therapist 4: I think the relationship between patient and therapist is important. I also think it’s sometimes overrated. It’s important but it’s not for every patient that important but a lot of therapists think it is. Just my opinion.

Only a few of the patients specifically discussed the therapeutic relationship. Many did however, comment on characteristics of the treatment or therapist that they found important. Some examples include therapists being empathetic, knowledgeable, and making patients felt safe.

**Treating the Trauma**

Treating the trauma was considered important to both patients and therapists in this study. This super-ordinate theme is related to trauma-focused treatment to address patients’ childhood experiences.

**Timing is Everything**

Therapists and patients discussed when was the right time to start doing trauma work. IREM required trauma processing from session two onwards. Patients and therapists had mixed views. For example, some therapists thought it would have been better to have a bit more time to build a relationship with the patient or to have some time for skill building:

Therapist 11: I think in a lot of cases, it’s best to start as soon as possible with trauma-focused therapy. But I guess in some cases, it’s better to first build some skills and use the phase-based therapy. Then people are able to cope with the possible effects of the trauma therapy.

However, patients mostly discussed not knowing what to expect or their difficulties in talking about their experiences to a relative stranger.

Participant 17: In the beginning I thought “Oh my god… what’s happening now is exactly what I tried to avoid my whole life, being vulnerable, being open towards someone… and this person is a stranger.

Participant 5: I think I felt a lot of fear and trepidation about the actual trauma itself and I was worried about it and I guess I had some doubt about whether or not it
would work and so I probably would have liked a bit more information about that, or maybe even a quick demonstration of what was involved. I think I built it up in my head to be something really scary and it wasn’t actually.

Not all agreed with the view that there should be more preparation:

Participant 23: I knew what I was starting. Of course you never know how it’s going to work. But you know what it’s for and what exactly is going to happen. I thought the explanation, the information you get ... I don’t think more is necessary because then you’re going to think about everything.

Participant 30: You know, in my case, if it [the introduction] were [any] longer ... then I would get scared or confused. I would’ve said I don’t want to do it anymore.

Therapist 2: I’m now having had this experience of the research I’m quite surprised that we could go in there and do stuff so quickly and have good results without poor outcomes with actually good outcomes and now and then occasional situations there were risks that – were actually managed.

**Going Back to the Source**

For patients, they felt it was important that treatment went back to the source of their difficulties to help them move forward:

Participant 27: I don’t know how you would treat it otherwise. It is just something that had a big impact on your life. Something that you weren’t able to deal with correctly. So the only way to fix that is to go back and do it over, I think.

Similarly, most therapists thought that it was essential for patients to be exposed to memories and feelings associated with their trauma, and then having a corrective emotional experience where they learn to view themselves and their traumatic past in a different way:
Therapist 15: What (is) helpful is that ... they go into the trauma again and have a new experience in their brains and then they start to think in a different way. They don’t feel guilt anymore because it’s not a secret anymore.

**Difficult but Necessary**

While patients were able to recognise that going back to the trauma was an important component of treatment, most of them acknowledged how difficult this was for them:

Participant 10: It was difficult but I feel that it needed to be done that way ... I think, it was kind of like kind of a slap in the face but a good one. So, what I am trying to say is, yes, it was hard going back like that ... but I think that was partly necessary.

Some therapists also discussed the difficulty they experienced during trauma processing.

Therapist 5: Not to fear your emotions and you have to be able to stand for minutes, and minutes, and minutes and see that somebody is not going well, not at all and to accept that, you do not have to do the changes. It’s not your job to change things, it’s the patient’s job to try.

**Nature of Change**

The change process involved patients’ giving context to their trauma which was through improving their understanding of the circumstances and their role in the events, and helping them to develop a new perspective about their experiences and themselves. This process led to greater self-acceptance, hope for a future, and patients feeling strong and in control of their life.

**Trauma in Context**

Therapists suggested that patient change was about them gaining a new understanding of their experiences and how this has impacted them:

Therapist 9: Well, I do think that they very often recognise what they missed and it’s however painful ... So instead of thinking, they were the dirty child or the guilty child, they see that they were a child in very bad circumstances and that of course
when you face that and you really feel something about it then afterwards you get more mild towards yourself.

For patients gaining a new perspective or insight was about them learning that what happened was not their fault and they were not to blame:

Participant 21: How I look at myself in those situations has definitely changed... I can now honestly say that I did what I could as a child ... there was nothing I should have done to begin with, so I didn’t fail to do anything. Or neglect to do anything. That I’m less hard on myself, in that sense. I am less critical of myself.

By developing an understanding of their role in their trauma it facilitates a changes in their relationship with the trauma or how patients view themselves:

Participant 16: I do think differently about myself. I don’t see myself as this monster, Frankenstein, this massively damaged and broken thing. I still see the injuries I sustained but now I know they can heal, at least to a certain degree, and they can even have positive effects. I would surely not be the artist I am today without those experiences ... I did see it before therapy but now I believe it.

Participant 11: I think after the treatment I felt more empowered and like even though I couldn't do anything I could do something now to help myself. So, it really made me feel like in control of what happened, if that makes sense, in a weird way.

**Seeing the Possibilities and Making Changes**

Learning to accept themselves enabled patients to starting considering the potential for a future with a sense of hope that things could be different for them:

Participant 23: Let’s just say, it wasn’t in my nature. The possibility of a future ... I didn’t see any possibilities. Because there weren’t any possibilities. And now I think differently. The possibilities are different.
The Changed Self

Most therapists reported that patients gaining a sense of empowerment and autonomy was crucial for therapeutic change to occur. This change related to patients’ drawing on their inner strength and resilience by taking control of themselves and their future:

Therapist 5: They find a lot that they are able to look at that they are strong enough ... are able to experience the feelings, able to experience the ideas and the pictures and the thoughts and ... their role changes and they're not a victim anymore.

Patients discussed how treatment had given them the strength and the ability to change. This led patients to start taking control, asserting themselves, and embracing a life that they had never thought possible:

Participant 25: I am stronger, I think more clearly, I’m not afraid anymore ... I can enjoy things more, I have a less internal battles ... almost none, and if there is one then I can handle it well.

Participant 19: I don’t put up with everything ... I just say: ‘Hey, I’m a human being as well with feelings and I’m valuable.’ And I don’t have to be there for others all the time ... A lot of times I said ‘The most important thing is that the others feel fine, I don’t matter.’ But now ...’ I won’t do that. I don’t want to do that.

Key Considerations

Key considerations were only discussed by the therapists in the study and were factors specific to trauma-focused treatment. Sub-ordinate themes included therapist confidence, supervision, avoidance, and adherence.

Therapist Confidence

Confidence was a theme which all therapists acknowledged impacted on treatment. Therapists talked about having confidence in themselves and their ability:
Therapist 14: I think that it’s important that the therapist is not afraid and can give patients a feeling of confidence ... like a doctor, ... it’s important that the doctor gives you the idea that he knows what he or she knows what he does and that it’s ok and that he is in control.

Therapists also identified the importance of having confidence in the ability of the patient to tolerate the treatment:

Therapist 3: Don’t be afraid to kind of push your client ... I think there is a lot of possibility going on and look I think, ... if you give the client that option, they can do it.

**Figure 8. 2**

*Superordinate and Sub-ordinated themes on the Key Considerations for Treatment*


**Avoidance**

Avoidance was a theme that arose in all of the therapist interviews and was relevant to both patients and therapists. For patients, therapists commented on their avoidance of trauma memories and the feelings associated with them:

Therapist 11: I think that is one of the most important part that they are not running away from it and not putting it away in their mind.

Some therapists acknowledged their own avoidance of treatment, which was related to fear of symptom exacerbation:

Therapist 13: What I really felt in our centre is that therapists are very reluctant to do trauma-focused therapy with these patients that they feel that you need to protect them ... They're afraid to de-stabilise this patient.

**Adherence**

Adherence was discussed by most of the therapists. Most therapists commented on how having to adhere to the treatment protocol actually facilitated treatment:

Therapist 16: The really good thing about it is that it was really structured and it forced us to get going much sooner than we normally would. You had to do processing in every session which has been great because I know that outside of it I get far too easily side tracked and we are distracted by crisis and stuff and avoid it.

Some therapists however did struggle with adherence and felt that it impacted on their ability to provide treatment.

Therapist 5: Well you have to stick to the protocol, but you are not allowed to use them [strategies], what I feel that there's something missing and I cannot do it, that's unhelpful for me.
Therapist 10: That we are used to calm down the client or do some relaxation exercise, but the protocol says, well, you should go on ... We are used to taking care ... [patients] can take time out. But afterward, I see well, it was right ... Just to keep going.

**Improving treatment for Ch-PTSD**

IREM treatment format involved 12 sessions, twice a week for a period of up to eight weeks. Both patients and therapists were positive about the actual treatments however they did offer some insights and suggestions for improving the overall treatment format

**Number of Sessions**

For some of the patients, they felt that 12 sessions were not enough for them:

Participant 8: I think if there was a two or four more to just see me through, just to help me just get through the last few doors you know, because I still struggle with things.

Participant 28: Maybe 8 weeks wasn’t enough time for me ... Maybe it should have been 10-12 weeks. It can be intense, those treatments, you need some time to let it sink in. And everyone is a little bit different in that aspect ... because I process things a bit slower.

However not all agreed that more than 12 sessions were needed.

Therapist 13: I’m not sure. I thought it was okay. With the patient I treated, it was really okay. We almost didn’t know what to address at the end. We almost had sessions open. With the other patient, ... She was in process but it was just she needed more.

While no patients specifically commented that they felt they needed less sessions, there were 18 participants who finished treatment early.
**Frequency of Sessions**

Some of the patients and therapists preferred the twice weekly session approach used in IREM:

Participant 31: I didn’t experience anything negative about it. It’s hard, twice a week, but not uhm... it’s very effective, a lot has happened.

Therapist 14: I didn’t know the concept of twice a week so I’m very enthusiastic about that and I think maybe that’s better than once a week.

Therapist 7: I think it’s good. I think it’s good because yeah, it is, everything is so fresh in the patient’s memory. You can easily come back to what you have done in the session before ... And I think it’s good for patients to have a short intense of treatment. I think it’s more effective than just feeling it really. To me it feels more effective than 12 sessions and 12 weeks. Yeah, but at the same time I found it pretty intense for me too and its very time consuming.

However, not all agreed that twice weekly sessions were better.

Therapist 5: The one who stopped after eight sessions. She said that it was much too heavy ... she got too much information, too much inputs in short time and when I did the six supplementary sessions, she asked me to do it only once a week. We did that and this was better for the patient.

Therapist 15: Sometimes it’s too busy for us but I think it’s very good that they come twice a week but there are sometimes for whom it would be better to come once a week I think. That are clients who have emotionally not that much control and they need few days’ rest.

**Discussion**

In this study patients and therapists were asked their perspectives on trauma-focused treatment for Ch-PTSD. Treatment components included preparation and going back to the source of the trauma. Key
aspects of the change process were also described which included patients gaining new understanding of their trauma and how this has impacted them, developing their inner strength and gaining a sense of hope for their future, all of which lead to improved self-efficacy and self-worth. Both therapists and patients whilst commenting on the benefits of directly processing trauma memories, also reported that the process itself was challenging. Patients and therapists offered some suggestions for improving treatments such as more intensive interventions. Key considerations for treatment related to therapist factors that could affect treatment such as their lack of confidence or doubt over their ability to effectively treat patients, all of which lead to fear and avoidance of treatment, specifically, trauma processing.

The qualitative findings supported the benefits of trauma-focused treatment and the results are consistent with the observer rated quantitative findings and self-reported symptom improvement for patients in the IREM study (Boterhoven de Haan et al., 2020). IREM findings identified significant reduction in PTSD symptoms post-treatment with 68% no longer meeting PTSD criteria at the 8-week follow-up assessment. A range of secondary measures also found a significant reduction in patients’ symptoms including self-reported PTSD, depression, dissociation, anger, and trauma related cognitions and feelings such as shame and guilt.

Of interest, the results of this study were similar to that of other studies which included treatments with a stabilisation phase or as part of a group program, suggesting that the same treatment components and difficulties exist regardless of the inclusion of a phase-based approach (Harper, Stalker, Palmer, & Gadbois, 2008; Stige, Binder, Rosenvinge, & TraeEen, 2013). One argument for phase-based treatments is that they help reduce patients’ fears and promote their receptivity to trauma processing (Harned & Schmidt, 2019). In IREM, we had a dropout rate of 7.7% suggesting that the treatment was acceptable and patients were able to tolerate trauma processing without any prior stabilisation (Boterhoven de Haan et al., 2020). While IREM patients did report some fear or difficulty in addressing their childhood trauma, they acknowledged that it was necessary for their treatment. Regardless, neither the interviews or the quantitative results from IREM, indicated that stabilisation is necessary for treatment engagement or positive patient outcomes. In terms of clinical implications, when therapists present a rationale for
treatment and decide with their patient on the intervention plan, it would be useful to acknowledge not only the difficulty of trauma processing, but also how patients can benefit from a trauma-focused approach; Thus, opening a discourse to allow the opportunity to alleviate any patient fears or concerns and to help promote their treatment engagement.

Preparation was a theme identified by our patients and therapists. The therapists emphasised the therapeutic relationship as being important in preparing patients for treatment by providing a safe environment where they are supported and in control. Patients and therapists both discussed the willingness of the patient for treatment which was more specific to the internal characteristics of the patient. Overcoming patient ambivalence for trauma processing and having a safe and trusting environment during treatment was discussed by Shearing and colleagues (2011) who investigated patient views on reliving as part of their PTSD treatment. To that end, it suggests that therapists’ role is to create an environment for the patient where they feel safe enough to engage in treatment to address their childhood trauma experiences however, the willingness comes from the patient themselves (Arias & Johnson, 2013; Lowe & Murray, 2014). To create this environment, therapists should take an interest in patients and their treatment goals, be open and honest in regards to treatment, and empower patients to take control of their treatment by encouraging them to be involved in the decision making and planning.

Patients and therapists considered that exposure to, and reprocessing of, trauma memories was crucial for change. Patients recognised that trauma processing was difficult but that there was no way to move forward without processing the thoughts, feelings, and experiences of their past. Several studies that have explored treatment preferences have found that patients are willing to brave the effects of trauma-focused treatment as confronting their memories was needed before they could successfully move on (Simiola et al., 2015; Zoellner, Feeny, Cochran, & Pruitt, 2003). There were some differing views about when to start treatment. Granted, IREM participants began trauma processing from session two and some felt they needed more familiarity with their therapist or understanding of what to expect from treatment. However, there were others that felt delaying treatment would have impacted their engagement. Nevertheless, the importance and need for confronting past trauma experiences has been consistently
identified across the research investigating patients’ treatment perspectives. This suggests that the benefit of addressing their past experiences far outweighs patients’ fear of reliving their trauma and is encouraging for promoting trauma-focused interventions (Chouliara et al., 2017; Shearing et al., 2011).

Similar to other research, our patients and therapists viewed the experience of dealing with their trauma helped to provide a context for understanding feelings and patterns of behaviour; to change patient’s perspective, particularly of themselves; and as a result, they felt stronger and more in control of their lives (Chouliara et al., 2014; Lynch, Keasler, Reaves, Channer, & Bukowski, 2007). In particular, our patients’ talked about gaining a sense of hope for their future, learning to accept themselves, starting to consider their own needs, and being more assertive. Key themes identified in other studies describe a process of healing and recovery where patients take an active role in their treatment, draw on internal resources, and develop a sense of agency (Arias & Johnson, 2013; Stige, Rosenvinge, & Traeen, 2013). Together, there is a clear recognition that therapists should actively consider how to enhance engagement in way that promotes a sense of agency within a safe and trusting environment.

Relatively novel in this study was the exploration of therapists’ perspectives, in particular we were able to identify key considerations for treatment implementation. Sub-themes of confidence, avoidance, and adherence highlight the role of the therapist and the impact their behaviour can have on treatment efficacy. For example, many therapists acknowledged that in the past they would have been guided by patients’ presentation at each session, including their avoidance, or that they might have stopped treatment when they could see their patients were particularly distressed. However, having to adhere to the research protocol, served therapists in reducing avoidance and in “staying the course” during therapy thus, not changing the way treatment delivery is intended. Although not all therapists found adhering to the protocol as beneficial, in particular some found it interfered with meeting the needs of the patients. Therapists also acknowledged that gaining confidence in their own ability made them feel more competent to manage any issues that arose from trauma processing. In IREM, the therapists had comprehensive training and peer supervision throughout the trial which may have contributed to increased confidence in their ability and the effectiveness of the treatment. Our findings did not present any significant differences
between level of confidence and therapists’ level of experience. Research has shown that novice clinicians can effectively implement PTSD treatments and produce good treatment outcomes (Eftekhar et al., 2013). Taken together, it suggests that therapist experience does not impact treatment outcomes but highlights the effect of their level of confidence, avoidance, and adherence on treatment.

IREM incorporated an intensive short-term trauma-focused approach to treatment. Most of the IREM patients and therapists were supportive of this intensive approach, in particular twice weekly sessions. More recently there has been increased research on these intensive approaches to help overcome patient avoidance and facilitate quicker reductions in symptoms (Hendriks, de Kleine, Broekman, Hendriks, & van Minnen, 2018; Hurley, 2018). Studies have found that the majority of patient dropouts occur before mid-treatment and hence, intensive treatment approaches potentially increase the likelihood of early symptom improvements which may contribute to better attrition rates (Gutner, Gallagher, Baker, Sloan, & Resick, 2016). It is possible that the intensive format contributed to the low IREM dropout rate however, more research is needed.

**Study Limitations**

Irrespective of the interesting findings arising from this study, it is not without its limitations. In relation to the patients in the IREM trial, they had already been through the screening process and initial assessments before they began treatment. Therefore, the experiences our patients and therapists had towards the trauma-focused approaches may not generalise to other Ch-PTSD patients. Despite this, it is possible that their level of motivation or readiness for treatment had developed as a result of this process. As such, these procedures could be implemented in regular practice, to stimulate patients’ commitment and readiness for change. Apart from the Australian participants, all spoke English as a second language. The patient interviews were conducted in the language of the site and then translated to English and the therapist interviews were conducted in English. As a result, there may have been language or cultural nuances lost in translation. A further note, the focus of this article was on Ch-PTSD. However, due to the amount and depth of data resulting from these studies, it was decided to divide them into two separate
manuscripts; This article is focused on treatment for Ch-PTSD, and the other manuscript, focused on identifying the specific treatment mechanisms of EMDR and imagery rescripting.

**Conclusion**

This is the first study that directly integrates and synthesises patient and therapists’ views of trauma-focused approaches for treating adults with PTSD from childhood trauma experiences. This research makes a valuable contribution to improving our understanding of important components of trauma-focused interventions, the nature of change, and treatment related issues and possible ways for improving their effectiveness. Patients and therapists from three different countries identified several shared views on components of trauma-focused treatments important for treating Ch-PTSD. Treatment mechanisms identified by both patients and therapists’ emphasised the importance of addressing trauma experiences so that patients can gain a new perspective about their trauma and how this has impacted them, to develop a sense of agency and have hope for their future. Therapists acknowledged that their confidence can impact the effectiveness of treatment which can contribute to greater avoidance.

While there is growing evidence that supports the use of trauma-focused treatments, these approaches are underutilised. Future research would benefit from more investigation on ways of improving therapists’ confidence and overcoming barriers to treatment, and the impact of intensive trauma interventions to find out how this can effect patients’ treatment engagement and outcomes.
References


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Chapter 9: General Discussion
The circumscribed nature of previous understandings of post-traumatic stress disorder (PTSD) has been acknowledged as not reflecting the impact of repeated and prolonged trauma experiences (Resick et al., 2012). The aetiology of adults with PTSD from childhood trauma experiences (Ch-PTSD) is further influenced by the often interpersonal nature of the trauma and the developmental age of the child at the time it occurred. Childhood trauma experiences can impact on the neurobiological development and lifetime functioning of an individual including increasing vulnerability to harm and likelihood of further trauma experiences later in life (Courtois, 2008; Herman, 1992; van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005). Not only is there a significant effect for individuals and their life trajectory, but childhood trauma has a substantial impact on the ongoing burden on health and mental health services worldwide (Larkin, Shields, & Anda, 2012).

It is now accepted that the psychopathology of Ch-PTSD encompasses disturbances in the domains of affect regulation, interpersonal functioning, and sense of self in addition to PTSD symptomatology (Maercker et al., 2013; Resick et al., 2012). The impact of childhood trauma has been hypothesised to moderate the effectiveness of current treatments and is therefore seen as more difficult to treat (Karatzias et al., 2019; Maercker et al., 2013; Resick et al., 2012; van der Kolk et al., 2005).

The complex symptom presentation of Ch-PTSD and how best to treat this condition has caused much controversy for several reasons. First, it is not clear if the recommended individual trauma-focused approaches can adequately treat the sequela of childhood trauma experiences (Bryant, 2010; Dorrepaal et al., 2014). Second, some researchers propose that patients do not have the ability to tolerate increased distress associated with directly processing their trauma memories while remaining psychologically, emotionally, and physiologically intact (Karatzias & Cloitre, 2019; Wolfsdorf & Zlotnick, 2001). In conjunction with these issues, there is also a well-documented translational gap that exists between empirical research and clinical practice with the recommended treatments not being utilised in everyday real-world settings (Cook, Schnurr, & Foa, 2004; van
Minnen, Hendriks, & Olff, 2010). With this in mind, the focus of this thesis was to explore the issues with trauma-focused approaches for treating Ch-PTSD and to identify how we can improve treatments for this population.

**Overview of the Research**

This research adopted a threefold approach to explore current issues with treatments and to identify how we can treat Ch-PTSD more effectively.

**Schema Therapy for Treating PTSD**

First, this research focused on identifying issues with the current recommended trauma-focused treatments for PTSD. Study one (chapter 3) described a case study of a man named Bob who presented for treatment following a workplace trauma. Here, a schema therapy (ST) approach was used to treat Bob’s PTSD when he did not respond to the recommended trauma-focused cognitive behaviour therapy (Tf-CBT) approach. Adopting a developmental perspective as part of a ST approach helped identify the aetiology of Bob’s PTSD; specifically, core negative beliefs which were traced back to childhood experiences of Bob’s mother not protecting him or intervening when he was physically and verbally abused by his step-father. Imagery rescripting (ImRs), an experiential technique, was used to process Bob’s adverse childhood experiences. This was then combined with other ST components including limited re-parenting, empathic confrontation, and behaviour-pattern breaking - all of which contributed to a significant reduction in PTSD symptoms. All things considered, exploring other treatment approaches (particularly those where childhood experiences are a central feature) can help improve Ch-PTSD interventions.

**ImRs and EMDR for Treating Ch-PTSD**

Another component of this thesis was to investigate alternative trauma-focused treatments for treating Ch-PTSD. Study two (chapters 5 and 6) outlined the design and outcome data of IREM, a multi-centre international clinical trial which was conducted at sites across Australia, Germany, and the Netherlands. The purpose of the IREM trial was to investigate the effectiveness of two trauma-focused approaches, ImRs and eye movement desensitisation and reprocessing (EMDR), for the
treatment of Ch-PTSD. The treatment rationale was based on theoretical reasons specifically relating to the nature of childhood trauma and the symptom complexity associated with Ch-PTSD presentations (Arntz, 2012; Korn, 2009). In addition, ImRs and EMDR have had limited research focus despite some preliminary findings demonstrating their efficacy for Ch-PTSD populations (Chen et al., 2018; Morina, Lancee, & Arntz, 2017).

Findings from IREM included a significant reduction in patients’ PTSD and other symptoms associated with Ch-PTSD including depression, dissociation, anger, trauma-related cognitions, and feelings such as shame and guilt. IREM treatment gains were also maintained following treatment with 68% of patients no longer meeting PTSD criteria 8 weeks after treatment, and this increased to just over 80% at the 1-year post-treatment assessment. In addition, IREM had a low dropout rate of 7.7% and only a small number of adverse events (four) were reported, with only two being directly related to the study. The findings of a low dropout rate and a substantial decrease in symptoms support the use of ImRs and EMDR for treatment of Ch-PTSD. Further, these findings suggest that patients were able to tolerate trauma-focused treatment without any prior stabilisation.

**Understanding Processes and Issues in Treating Ch-PTSD**

The last component of this thesis explored the trauma-focused treatment experience using a sample of IREM patients and therapists. Study three (chapter 8) involved a qualitative analysis of patients’ and therapists’ experiences during the IREM trial. The purpose of study three was to conduct an in-depth analysis of the trauma-focused treatment experience to identify important components of the treatments, possible barriers to treatment, and potentially identify ways to facilitate improvements in patient outcomes and treatment effectiveness.

Patients and therapists reported that willingness was a key factor in patient treatment engagement and that the therapist can help develop this through the therapeutic relationship. Confronting past trauma experiences, while difficult for both patients and therapists, was identified as a necessary component of treatment. Views on timing for trauma-focused approaches differed however, most patients and therapists felt that it was important to begin direct trauma processing
sooner rather than later. Core features of the treatment process were exposure to past experiences, gaining insights or new perspectives, and developing inner resources or capabilities - all of which cultivate the patients’ sense of agency. Therapists reported that their confidence could impact on treatment avoidance and adherence and that supervision was important when working with Ch-PTSD populations. Suggestions offered by patients and therapists for improving treatments included consideration of different intervention formats such as intensive approaches and also the duration of interventions with respect to the needs of patients.

**Conclusions from this research**

There are several conclusions that can be drawn from this research.

**Trauma-Focused Treatment for Ch-PTSD**

This thesis provides evidence to support the effectiveness of trauma-focused treatments without prior stabilisation for individuals with Ch-PTSD. In this thesis, patients were able tolerate the trauma-focused approach of ImRs and EMDR with good treatment outcomes. This is consistent with other research which has found that complex symptomatology did not exacerbate symptoms nor impact the benefit of trauma-focused treatment (Powers, Halpern, Ferenschak, Gillihan, & Foa, 2010; van den Berg et al., 2016; Walter, Buckley, Simpson, & Chard, 2014). Indeed, some studies have reported that affect dysregulation improved after trauma-focused treatment (Jerud, Zoellner, Pruitt, & Feeny, 2014). These findings are in direct contrast to research that advocates for phase-based treatment approaches (Bohus et al., 2013; Karatzias & Cloitre, 2019).

The IREM trial found that patients were able to tolerate treatment which was demonstrated in the low dropout rate and the small number of adverse events recorded. The IREM dropout rate of 7.7% would be considered low in comparison to other studies with patients with childhood abuse such as McDonagh et al. (2005) who reported a drop out of 41% using a TF-CBT approach; Cloitre et al. (2010) with 15.2% for the Skills Training and Affect Regulation phase-based treatment; or the average rate of 22% as reported by Ehring et al. (2014) in the meta-analysis of treatments for childhood abuse.
The conclusion that trauma-focused approaches are effective and can be tolerated by patients is also supported by the qualitative findings where both patients and therapists emphasised the importance of “going back to the source” i.e. their childhood trauma experiences. The difficulty and discomfort of trauma processing was acknowledged, the predominant view shared by patients and therapists was that there is no other way to recover and move forward without addressing past experiences. While there were varied opinions on when to commence trauma work, the majority of participants felt that it was important to start as soon as possible. In the words of one therapist:

Therapist 4: Well, I think that they are traumatised, they suffer from it. The way they suffer from it is they have .... these symptoms like nightmares, like dissociations, like reliving the moment. Also, that everything that happens could happen with therapy, which could be stressful for the patient, kind of happens every night with them. So, why should I think that the therapy is so more stressful for them than the rest of their life?

*Childhood Trauma Impacts on Treatment*

As was demonstrated in the case study of Bob (chapter 3), and consistent with other research, childhood trauma can adversely impact the effectiveness of treatment (Dorrepaal et al., 2014; Karatzias et al., 2019). In the case study, the impact of pre-existing schemas from adverse childhood experiences impaired Bob’s ability to process his work-related trauma and contributed to his maladaptive coping (Brewin & Holmes, 2003; Young, Klosko, & Weishaar, 2003). In this example, Tf-CBT, an evidence-based treatment for PTSD, was unable to effectively meet the needs of a patient. As such, to overcome treatment-related issues for Bob’s chronic PTSD presentation with childhood origins, treatment benefited from adopting a developmental focus and specifically targeting his childhood trauma.

Not only are adverse childhood experiences central to Ch-PTSD psychopathology but the behaviours that developed because of these experiences which serve to maintain patient symptoms are important. Therefore, it is imperative to treat the trauma and also the associated behaviours
(Karatzias et al., 2019). It has been suggested that Tf-CBT approaches may not adequately treat symptoms associated with Ch-PTSD. Lonergan (2014) conducted a review regarding the role of complex PTSD on treatment outcomes. This review concluded that residual functional impairment was found in many patients and that, more often, they had a poorer response to treatment. Indeed, these issues are the foundation of phase-based approaches which focus on stabilisation and improving patient functioning prior to trauma processing. Phase-based treatments usually include skills training in affect regulation and interpersonal functioning; however, it is not clear how they address disturbances in self-perception which has been found to be central to complex presentations such as Ch-PTSD (see Karatzias & Cloitre, 2019). Moreover, the majority of the phase-based approaches use skills training as preparation for trauma processing rather than focusing on long-term behavioural change (Cloitre et al., 2010; Dorrepaal et al., 2012; Steil et al., 2018).

**ImRs and EMDR are Effective for Treating Ch-PTSD**

In this thesis, ImRs and EMDR were found to be effective treatments for treating PTSD and the sequelae of symptoms associated with Ch-PTSD. To date, there has been limited research on the efficacy of ImRs and EMDR treatment of Ch-PTSD. These two trauma-focused treatments showed significant reductions across all measures and gains were maintained 1-year post-treatment. These treatments were also discussed by both therapists and patients with most reporting a positive experience of these interventions. This suggests that these approaches may be acceptable to therapists as well as patients and this may help to improve implementation in everyday clinical practice (Arntz, Tiesema, & Kindt, 2007; Jeffries & Davis, 2013).

There were several reasons for using ImRs and EMDR to treat Ch-PTSD. Both treatments limit exposure to traumatic material (Arntz, 2012; Jeffries & Davis, 2013). In ImRs, the patient begins by describing the trauma experience so that their memory is activated and then the therapist or patient steps into the scene which is then rescripted into a more desirable ending (Arntz, 2011; Arntz & Weertman, 1999). In EMDR, the role of bilateral stimulation helps to remove distress and vividness of trauma memories by creating distance. Furthermore, patients are encouraged to focus
on new information as it arises rather than prolonged reliving of traumatic material (Jeffries & Davis, 2013; Lee, 2008). These two therapies were chosen because therapists had identified them as less aversive than other trauma-focused approaches such as prolonged exposure. However, it would be useful to explore this further in future research such as comparing prolonged exposure with ImRs and EMDR in a larger sample and testing the palatability of the three treatments including dropout rates. Also, the mechanisms and experiences of each of these approaches could be explored to identify how to improve the clinical translation.

Although different in their overall intervention approach, both ImRs and EMDR help develop patients’ capacity to understand and manage their emotions. In ImRs, patients are repeatedly asked to identify their feelings and needs during the rescripting. Consequently, patients learn how to engage with their emotions and are, therefore, better able to manage them (Arntz, 2011, 2012). In EMDR, the preparation component of the intervention includes a focus on developing patients’ affect tolerance capacity through teaching relaxation or resource development and installation strategies (Korn, 2009; Shapiro, 2001). Further, during processing the client is asked to identify physical sensations as they arise. This process helps create more awareness of the relationship between affect and body sensations and thus develops patients’ capacity to self-regulate (Shapiro & Maxfield, 2002).

ImRs and EMDR appear suited to addressing the other additional symptoms associated with Ch-PTSD presentations. The process of ImRs helps patients have a corrective emotional experience which leads to fundamental changes in belief systems and behaviours (Arntz & Weertman, 1999; Holmes, Arntz, & Smucker, 2007). ImRs focuses on meeting the patients’ unmet needs which is initially done by the therapist and then, further into treatment, the patient does this for themselves (Arntz, 2012; Arntz et al., 2007). This experience of a secure adult meeting the child’s needs such as protection and nurturing helps to change how patients view themselves and others and is understood to lead to healthier relationships. Further, this process of the therapist meeting the patients’ needs (initially), models behavioural responses to the patient helping them to learn more
appropriate and acceptable ways of interacting with others to get their needs met (Arntz, 2011; Prasko, Grambal, Ociskova, Kamaradova, & Latalova, 2012).

EMDR may help with addressing the additional symptoms of Ch-PTSD because treatment focuses on addressing negative beliefs rather than just habituation of distress and in that sense, it may help address a number of behaviours and feelings (Solomon & Shapiro, 2008). For EMDR, it has been described as processing on a deeper level which is consistent with the adaptive information processing model. By focusing on sensory, affective, and belief systems, it enables patients to make connections with past experiences in their memory network thus allowing them to gain new insights and new perspectives (Solomon & Shapiro, 2008). EMDR specifically addresses behaviours associated with Ch-PTSD during treatment. After processing the past trauma, the next stage of treatment targets current pathological reactions or behaviours and future events where the patient learns new ways of reacting in particular situations (Shapiro, 2001).

Given that there are some differences between ImRs and EMDR and their treatment approaches, it raises the issue that some patients may benefit more from one type of treatment over the other. Future research should investigate whether it is possible to predict these; for example, the nature of the trauma experience or the childhood environment. The unique approach of ImRs may be particularly suited to childhood environments that were depriving and neglectful by helping to address past trauma through meeting the needs of the child such as providing nurturance, comfort, or protection (Arntz, 2011; Arntz & Weertman, 1999). In contrast, EMDR works to process incorrectly stored physiological perceptions i.e. sensations, emotions, beliefs, thoughts, and sensory material and, therefore, it could more effective for patients who report a strong physiological or sensory component associated with their trauma (Solomon & Shapiro, 2008).

**Clinical Implications of this Research**

This thesis has presented interesting findings to better improve how we approach treatment for Ch-PTSD. The question now should be focused on how we can use this research to improve treatments and outcomes for individuals affected by PTSD from childhood trauma.
Clinical translation should be a key consideration in any empirical research. Dissemination, implementation, and adherence of treatment for Ch-PTSD and even PTSD has been largely ineffective as therapists try to overcome issues with attrition and patient dropout (Najavits, 2015). Therapist confidence in the treatments was identified as key in the IREM study. Moreover, many therapists recommended that clinical supervision, either individual or in a group, was a useful tool for them to help build their own confidence and to have access to other clinicians with who they could problem solve or work through difficult cases. Of particular interest in the IREM Study was that supervision was carried out mostly by peers using formal fidelity rating scales as a guide and supervision by “experts” was actually rarely provided. Nonetheless, peer supervision in this context was highly valued by the therapist participants.

One very clear message from this thesis is that patients and therapists believe that it is important to treat the trauma. The predominant view was that trauma processing should be a top priority for treatment. During the qualitative interviews, the intensive treatment approach of 12 sessions twice a week for up to 8 weeks was often referred to. Patients discussed making a commitment to treatment for the duration of the trial; essentially, they put their life on hold while in treatment for their childhood trauma. Conversely, therapists discussed how the IREM format helped them maintain focus and adhere to the trauma-focused approach. In addition, many therapists discussed continuing to use this treatment approach once their involvement in IREM had finished. Taken together, treatment may be facilitated by offering patients a “treatment package” where they commit to a block of sessions over a period of time. This would allow patients to commit to their treatment and may facilitate their willingness for this type of approach. Further, it would help therapists be more focused on achieving intervention goals due to the time-sensitive nature of the treatment approach.

One thing that came from IREM, which has since been written in a book chapter, was developing a method for enhancing case conceptualisation and formulation. The chapter included in the Appendix A of this thesis describes how the use of trauma maps early in treatment aids case
formulation and promotes patient engagement in treatment. The trauma-mapping process is a useful strategy that can be used by therapists to assist in identifying pertinent details of trauma memories, choosing the most appropriate targets for processing, and providing psychoeducation for patients on schema development and coping styles.

It is important for treatment to address the impact of childhood trauma for patients in a way that is acceptable for them. Patient needs should be foremost when considering treatment approach, and patients should be involved in the decision-making process. As presented in the IREM results, EMDR was found initially to have a quicker reduction in symptoms at mid-treatment. For example, using a <0.01 significance level, EMDR was seen to have a quicker effect on measures such as self-reported PTSD, shame, and hostility. Further, with a significance level of <0.05, EMDR showed reductions on measures of anger, trauma-related cognitions, and single-item scores on anger, guilt, shame, and disgust. Taken together, EMDR may be more beneficial initially to reduce PTSD and associated Ch-PTSD symptoms which would be particularly suited to patients experiencing more distress as a result of their trauma. In addition, EMDR may be a useful approach to promote patient engagement and reduce dropouts through patients experiencing a quicker treatment response (Gutner, Gallagher, Baker, Sloan, & Resick, 2016).

In contrast, ImRs focuses on emotional processing of past trauma rather than cognitively which may be more suitable for some Ch-PTSD patients. For example, this would be appropriate for presentations where there are strong feelings of shame or guilt. While patients may understand things rationally, they may still experience those feelings on an emotional level (Arntz & Weertman, 1999; Prasko et al., 2012). Another group is patients with strong mental imagery. Previous research has identified the relationship between emotions and mental imagery; therefore, treatment would be more effective with emotional processing compared to just verbally processing material (Hackmann & Holmes, 2004; Holmes et al., 2007).

Future research may also focus on the different mechanisms of each treatment. The most accepted theory to account for treatment affects in EMDR is that of working memory, so future
research could include a task to assess working memory and see whether it differentially indicates which patients do better with one treatment over the other. Similarly, ImRs focuses on the person having a visual memory of the incident so, therefore, perhaps capacity for imagery may also differentiate between the two treatments and this should be tested in a subsequent study.

**Limitations of this Research**

While it should be noted that all participants were subject to a screening and assessment process prior to the commencement of treatment, this may have facilitated their willingness or engagement in treatment. However, this would also be a component of research trials investigating the effectiveness of phase-based treatments. Nonetheless, this could potentially limit the generalisability of the findings of this thesis.

Another possible limitation of this thesis is the inclusion criteria which, consistent with many other research studies, could be considered as restrictive. In particular, complex presentations often seen in Ch-PTSD presentations such as alcohol or drug abuse or dependence, psychosis, or bipolar disorder. Indeed, there are studies that support the use of trauma-focused approaches for such presentations which have found that these treatments did not contribute to symptom exacerbation or revictimisation (Marich, 2009; van den Berg et al., 2016). Future research would benefit from including these populations to see if they can benefit from ImRs and EMDR treatment.

A further limitation of this thesis is the lack of control or non-active treatment group as this study was the first of its kind and set out to investigate the effectiveness of these treatments. The naturalistic waitlist period for some participants found no significant changes during the waitlist. Given the findings of the IREM study, more research is needed on the efficacy of these treatments for Ch-PTSD.

**Future Research Directions**

So far, a number of important research directions have been outlined. These include:

- Investigating possible factors that might influence suitability of ImRs vs EMDR.
- Comparing prolonged exposure to these other two trauma treatments.
Below are additional future research directions.

**Comparison Clinical Trials**

To date, the predominant research focus has been on Tf-CBT approaches for the treatment of Ch-PTSD whereas EMDR, a recommended PTSD treatment, has been largely overlooked despite evidence regarding its efficacy (Chen et al., 2018). It is possible that the primary focus on Tf-CBT has been to the exclusion of other treatments such as ImRs and EMDR which may be particularly suited to meeting the needs of individuals with Ch-PTSD (Arntz, 2012; Najavits, 2015).

IREM was the first trial to compare ImRs and EMDR and the findings indicate that these two treatments are effective in treating Ch-PTSD. More research, particularly randomised clinical trials, are needed to provide further evidence of the effectiveness of these interventions for the treatment of Ch-PTSD. Further, trials comparing ImRs and EMDR with Tf-CBT would be beneficial to identify key differences between the treatments in effectively addressing the sequelae of Ch-PTSD (Dorrepaal et al., 2014).

**Intensive Interventions**

IREM adopted a unique intervention approach, that being of an intensive format of 12 biweekly sessions over 6 to 8 weeks. Most therapists and patients were positive about this format and this is supported in other studies (Ehlers et al., 2014; Hendriks, de Kleine, Broekman, Hendriks, & van Minnen, 2018; Oprel et al., 2018; Wagenmans, van Minnen, Sleijpen, & de Jongh, 2018). There are several reasons that have been proposed for more intensive trauma-focused approaches including that it might help reduce patients’ avoidance resulting in less treatment dropouts, faster improvements in patient symptoms, and potentially better outcomes. However, more research is needed to explore the impact of treatment intensity (Gutner et al., 2016; Hendriks et al., 2018). Future research would benefit from exploring the effectiveness of intensive treatment approaches with the standard weekly approach. Further, there may be benefit in combining treatments and approaches to better meet the needs of patients similar to other studies that have combined prolonged exposure with EMDR (Oprel et al., 2018; Wagenmans et al., 2018).
Exploring the Underlying Mechanisms of ImRs and EMDR

Learning about the mechanisms for treatment can help identify key processes to treatment and ways to improve implementation (Holmes et al., 2018). Preliminary research on the effectiveness of these treatments has found that therapists believe that EMDR facilitates deeper-level processing to enable patients to make connections with all aspects of trauma experiences including physical, emotional, and psychological (Edmond & Rubin, 2004); additionally, it is empowering for patients as they are encouraged to go into their own process thus leading them to produce their own insights (Korn & Leeds, 2002). Whereas, ImRs helps patients gain control of themselves and their experiences and learn appropriate behavioural responses which are indirectly modelled to patients during processing with therapists meeting their needs which leads to improvements in functioning (Arntz, 2011; Arntz & Weertman, 1999). Therapists in this study were particularly positive about ImRs and EMDR and therefore further investigation into therapists’ views on the treatment processes may help improve our understanding of the underlying mechanisms that contribute to the effectiveness of these approaches. Furthermore, given the somewhat different approach of these treatments, there may be benefit in identifying which treatment may be better suited to particular individuals.

Improving Clinical Translation

This thesis has discussed the issues with empirical research and everyday practice and, thus, a focus was to investigate ways to bridge the clinical translation gap. Therapists in IREM emphasised the importance of supervision when treating patients with Ch-PTSD. Future research could focus on identifying the impact of supervision, either individually or group, to determine its impact on utilisation of such approaches. Research into therapist preferences for treatment would be beneficial for understanding their decision-making processes.

There may be some need to tailor interventions to meet the unique needs of each patient including preparation, treatment format and duration, and when to engage them in trauma
processing. As such, it would be beneficial to develop an assessment or screening tool that may be used to determine the nature and course of individual therapy.

Conclusion

Childhood trauma experiences make a significant impact on the wellbeing and lifelong functioning of individuals. While there is agreement on the symptom characteristics of more complex forms of PTSD such as Ch-PTSD, there is substantial diversity over treatment approaches. This thesis aimed to understand the issues with treating Ch-PTSD and explore ways that treatments could be improved. Key findings from this research support the use of trauma-focused approaches, specifically ImRs and EMDR, for treatment of Ch-PTSD, it was found that patients were able to tolerate trauma work and were largely supportive of the trauma-focused approach despite the difficulty in addressing their childhood experiences and that therapist-related issues can play a significant role in effectiveness of treatments. All things considered, clinical translation is about applying what has been learnt in the research to everyday settings. These findings can make a significant contribution to improving treatments and could help reduce the burden on health services. This thesis has identified treatments that are effective and acceptable to both patients and therapists. More importantly, most patients understand that for them to move forward in their life, that they need to confront their past. If a patient is willing to engage in trauma processing, it is difficult to understand why attempts wouldn’t be made to help them overcome their adverse early-life experiences so that they can improve their daily functioning and lead more fulfilling lives.

Participant 17: And I think that’s important because... this may sound silly but... I always felt like there was something wrong with me. I often had lots of limitations in all my areas of life and I never knew why I reacted in such a weird way. Now I know why. I became aware of what it did to me and what is happening now... how much I suffer... and there are reasons for that but I am still the person I am or always was.
Participant 1: If you want me to be completely honest, I can’t see any other way of efficiently and effectively dealing with it. You have to go to the core of the issue to deal with it otherwise you are just going around it and not really changing what’s causing the underlying problems.
References


Appendix A: Working with Trauma Memories and Complex Post-Traumatic Stress Disorder

Abstract

This chapter provides an overview of how the schema model can facilitate our understanding of the issues confronting people with simple and complex post-traumatic stress disorder. It details strategies to facilitate effective formulation via a ‘trauma map’ and underscores how this process, based on schemas and modes, improves treatment outcomes. Recommendations are made on how to share this understanding with patients to improve their motivation for trauma processing and set up better generalisation of trauma treatment through the patient’s schema-related experiences. Preliminary evidence in support of this approach is reviewed.
Complex post-traumatic stress disorder (PTSD) is understood to be the result of trauma experiences which are often prolonged, repeated and with a childhood onset. It is typically associated with traumas that are interpersonal in nature, such as childhood abuse or torture (Herman, 1992), whereas simple PTSD is associated with single event traumas, such as an industrial accident or one-off physical assault.

While the concept of complex PTSD has attracted much discussion and debate (see Bisson, Roberts, Andrew, Cooper & Lewis, 2013), there remains a lack of consensus in regard to what is considered the ‘gold standard’ evidence-based psychological treatment. Perhaps unsurprisingly, a recent meta-analysis of psychological interventions for PTSD in those who had endured childhood abuse reported that individual trauma-focused interventions (such as trauma-focused cognitive-behavioural therapy (CBT) and eye movement desensitisation and reprocessing (EMDR)) were more effective than non-trauma-focused approaches (such as CBT adapted treatments that focus on coping, safety and anxiety management; Ehring et al., 2014). Thus, there is support for interventions that directly address the processing of the trauma.

**Key Components of Trauma Processing Interventions**

There is further debate regarding the necessary components of these trauma-focused approaches. The International Society for Traumatic Stress Studies advocated a phase-based approach to working with complex trauma that identifies the importance of an initial phase of stabilisation to improve patients’ distress tolerance, prior to engaging in trauma processing (Cloitre et al., 2012). However, it is unclear whether this phased approach improves outcomes and is a necessary component of trauma-focused therapy (de Jongh et al., 2016).

Imagery rescripting (IR) has been proposed as an effective technique within the treatment of childhood traumas or more complex PTSD presentations. There is growing evidence to support IR as an effective intervention for treating complex PTSD presentations (Morina, Lancee & Arntz, 2017). IR involves rescripting of the patient’s aversive experiences in childhood to provide a corrective emotional experience.
where the patient’s needs, as their child-self, are met. The key component of IR is not only that it changes the trauma meaning, but also that the experiential nature of the treatment allows patients to truly experience the new meaning as enacted in the rescripting, thus further integrating changes to core beliefs (Arntz & Weertman, 1999).

Models for the treatment of PTSD have long emphasised the importance of addressing cognitive processes during interventions (Brewin & Holmes, 2003) and a range of studies support a possible link between trauma, schema severity and PTSD. Researchers have found that elevated levels of Early Maladaptive Schemas (EMS) are associated with higher PTSD scores for women sexually abused as children (Harding, Burns & Jackson, 2011). Similarly, Ahmadian and colleagues (2015) reported on the difference in schema severity between acute and chronic PTSD patients. In particular, they found an increased impairment in cognitive–emotional processes (schemas) in individuals with chronic PTSD. Schemas have also been found to be more acute in war veterans with PTSD than in those without it (Cockram, Drummond & Lee, 2010). Interestingly, while adverse childhood events have been found in prospective studies to increase the risk of PTSD for soldiers entering war zones (Berntsen et al., 2012), EMS have been found to mediate the relationship between adverse child events and whether a war veteran develops PTSD (Cockram, 2009). PTSD treatment programmes that use a schema approach were found, in one study, to lead to more symptom reduction than a traditional CBT approach (Cockram, Drummond & Lee, 2010). Taken together, there are reasons for applying the schema model when working with individuals with complex forms of PTSD.

The IREM Trial

In this chapter, we describe the methods used in a recently conducted randomised controlled trial incorporating some novel adaptations to the treatment of complex PTSD (Boterhoven de Haan et al., 2017). The data for the trial is to be published elsewhere and so is not reported within this chapter. However, there are points of clinical learning that were captured from the trial experience that we share here. In the study, we compared two types of trauma-focused therapies, IR and eye movement desensitisation and reprocessing (EMDR), for people with PTSD from childhood trauma experiences. Both treatments were
delivered without prior stabilisation. This trial, named IREM, recruited participants via mental health and specialised trauma services across Australia, Germany and the Netherlands who had experienced childhood trauma prior to age 16 years and had a primary diagnosis of PTSD. Participants were randomly allocated to treatment condition where they attended 12 sessions on a twice-weekly basis over a period of between six and eight weeks. The majority of participants had extensive trauma histories with co-morbid diagnoses such as depression and anxiety. Assessment was conducted at several time points from pre-treatment, mid and post treatment, with two follow-up assessments at eight weeks and one-year post treatment. The EMDR treatment was based on the protocol developed by Shapiro (2001) and IR was based on the model proposed by Arntz and Weertman (1999). Therapists were assessed on adherence to treatment protocol. Qualitative interviews were conducted with the therapists and participants in the trial to investigate their experience of the trauma-focused treatments (Boterhoven de Haan, 2018). Interviews were conducted at each of the treatment sites and a thematic analysis approach was used to explore the data. This chapter focuses on describing and reviewing some of the key clinical methods and techniques used successfully within this trial to hone trauma reprocessing.

Clinical Implications of the IREM Trial

We suggest that processing of traumatic experiences for complex PTSD can be improved by sharing a broad schema-based model with the patient. Providing patients with a clear rationale helps to facilitate treatment engagement and willingness to address traumatic material. Research has shown that when patients are given a rationale for how schemas and related coping styles contribute to various symptoms, they are more likely to experience the therapist as attuned to them and to feel understood. Furthermore, they report a greater sense of being able to understand themselves. This greater self-understanding was related to an improved optimism which, in turn, was associated with better treatment outcomes (Hoffart, Versland & Sexton, 2002).

In this chapter, we highlight the use of a trauma map as a form of a case conceptualisation that was developed from information processing models of trauma and informed by schema theory. We describe the IR approach for treating complex PTSD, including how to prepare patients, and strategies for enhancing
trauma processing. This approach is illustrated with a case example (Jane) who was treated with IR as part of the IREM study.

**Case example**

Jane is a 54-year-old bank teller, self-referred for therapy to address her history of childhood abuse. Jane presented with mood swings ranging from low mood to outbursts of ‘extreme anger’. She felt distant from others and had difficulty trusting people. In addition, Jane reported hypervigilance to threat and difficulties sleeping. Jane acknowledged that she had endured these symptoms for a long time; however, they had increased 18 months ago when her husband left her after he had an affair. She described strong negative beliefs about herself and the world such as ‘I am worthless’, ‘I am broken’ and ‘no one can be trusted’.

Jane described a significant trauma history which began when she was put into foster care at age four. Trauma events included physical, sexual and emotional abuse which she suffered almost daily and continued until she ran away at 15 years of age.

Jane and Frank had been married for 36 years and they had one child, Tanner, 34. Jane described Frank as supportive; however, she felt that both Frank and Tanner had turned on her since the separation, in particular, Tanner blaming Jane for Frank having an affair. Jane had recently spoken with Frank about reconciling although she was unsure how she felt about this and whether it was what she wanted.

Jane had a group of friends that she would see socially but she stated that they were not close friends as she did not like talking about herself because it made her feel exposed. Jane said she’d not been in close contact with anyone since her separation as she did not want to bother anyone.

**Mapping Traumas: Implications of Information Processing Models of Trauma for Schema Case Conceptualisation**

An important part of trauma processing is to share a case conceptualisation with the patient. For this, we suggest the use of a trauma map, which can be used to help identify specific trauma memories. The map can consist of a series of events that resulted in PTSD; and/or emotional experiences that would not, on their own, result in PTSD but their cumulative effect have contributed to EMS development, such as
being continually put down by a parent. The mapping process helps to build a shared understanding of how
the trauma experiences shaped both the individual's thought processes and behavioural patterns. In
drawing the trauma map, the patient typically sits beside the therapist and the diagram is constructed on
paper placed on a coffee table. The patient is metaphorically and literally working side by side with the
therapist to compile the list of these core experiences. This process is necessarily led by the patient's
experience; however, sometimes the therapist is more directive in acknowledging traumas that may have
been minimised or dismissed and will add these to the map: for example, sexual abuse or bullying at
school. Adding these events to the map needs to be sensitively timed and potentially revisited when the
patient has a greater sense of their relevance.

While there are different information processing models of traumas, they also share common
features (Schubert & Lee, 2009). A key common feature of various models is that each memory is encoded
with three distinct components: information about the stimulus; information about the associated
emotional response, which includes affect, physiological sensations and behaviours, and information about
its meaning. The meaning component for someone with a complex trauma presentation will mostly be an
EMS. It is these three components that need to be assessed for each memory that is the basis of the
trauma map.

In the case of Jane, presented above, she described the sexual abuse by her foster father as the
most distressing of her trauma experiences. Jane was able to identify a specific memory related to the
sexual abuse and the image associated with this was of being in the main bedroom of her foster home.
When recalling this memory, Jane was able to describe the sensory aspects, including seeing the light
through the crack in the door and hearing footsteps coming up the stairs. In describing this event, she
reported feelings of shame and disgust and a tightness in her chest. She added that these feelings of shame
also went with the response of wanting to hide. When asked about her thoughts related to this scene and
those feelings, she described the sense of worthlessness and being broken, which is indicative of a
Defectiveness schema. To help Jane understand her trauma experience, we drew this event and its
components as pieces of a pie; the left-hand portion represents the details of the episode, the bottom
portion represents the feelings and the responses, and the right-hand portion is the meaning associated with the event, see middle circle of Figure 1.

For complex PTSD presentations, due to the nature and severity of the trauma experiences, we find that some patients have difficulty identifying specific memories due to the similarities across experiences. In these situations, we ask the patient to identify the memories that are the most distressing or the images of their trauma memories that most frequently intrude into their everyday life. As such, it is not necessary for the patient to recall every trauma experience; rather, it is about identifying possible representative targets for processing later in the treatment. In some cases, we find that for patients who have trauma histories but struggle to identify specific memories of major traumas, focusing on memories of other acknowledged schema-related experiences that are less distressing might be better tolerated. When these patients experience a good outcome targeting these lesser traumas, they then may feel ready to progress to targeting the more significant traumas or more distressing events.

The second shared feature of information processing models of trauma is that trauma memories are associative and linked to other experiences in the memory network. During the process of mapping a patient’s trauma, we illustrate the links between the person’s traumatic experiences, because they either involve similar events, similar feeling states or similar meanings. At this point, the therapist may draw attention to other memories on the map which previously the patient may not have viewed as relevant. In Jane’s case, links were made between memories that were similar in nature, such as when she did not have her needs met (i.e., not being given food or presents on her birthday), or because they involved similar schemas such as believing herself defective or worthless. These links can be seen by the connecting lines in Figure 1.
Figure A. 1

An Example of Trauma Mapping with Lines Indicating Similarities in the Components of Jane’s Traumatic Experiences
After making connections between the content of trauma memories, we then make links between a patient’s symptoms and their trauma experiences. The patient’s accumulated negative experiences are the etiological foundation of the schema and, in theory, we assume that the person’s symptoms result from an interaction between their coping style and their schema (Figure 2). Questions that may facilitate this process include: How did your experiences affect the way you thought about yourself (or others, or the world)? Is the way you think now, influenced by what happened to you in the past? How have your experiences shaped the way you live your life now? This type of linking is very similar to the trauma impact statements used in cognitive processing therapy (Resick, Monson & Chard, 2017).

The extent to which the patient responds with the coping styles of surrender, avoidance or overcompensation further entrenches these beliefs through ongoing experiences, see Figure 2. This, in turn, interferes with the patient reaching appropriate healthy adult goals and gaining a positive sense of self. This includes that they are competent/capable, have a stable sense of connection (loveable/likeable) and a basic sense of safety. So, in Jane’s case, she tended to surrender to her Defectiveness schema by allowing her
husband and son to verbally abuse and mistreat her, including her son blaming her for his father cheating on her and the marriage separation. She also used avoidance strategies which prevented her from receiving incompatible information. For example, when Jane did choose to go out socially, she went out dancing with a group of people where she could easily get away with not talking, therefore not giving her the opportunity to share any personal information and to learn that she was valuable and could be listened to. An example of Jane’s over-compensation was her reacting with extreme anger when she felt criticised or rejected.

Subjugation was another schema relevant to Jane. Some of her experiences consistent with this schema included being beaten when she tried to speak up for herself or the other foster children. Through her experiences in her foster home, Jane learnt that if she submitted to her abusers, she could avoid further punishments or beatings. In surrendering to this schema, Jane allowed her husband to make all the decisions in their relationship. In the case of the recent separation, it had been her husband who had cheated on her and his decision to leave, yet he had recently been talking about reconciling. Jane reported worrying that she would not be able to say no to him. Her avoidance of the subjugation schema meant that Jane would not answer phone calls or would hide from people so as to avoid conflict.

The effect of the schema and defensive styles is that they also interfere with gaining a positive sense of self. So, while Jane continues to repeat any one of the above behaviours, her chances of experiencing herself as truly worthwhile are decreased. A further example, in Jane’s case, is that she continued to speak with her husband on a regular basis despite having separated eighteen months prior. During these phone calls, he would often criticise her and put her down.

A trauma map is something that we implement in clinical practice outside of IREM. We believe that the drawing of the associated experiences helps prime the individual for schema change. In the first instance, the creation of a trauma map provides visual recognition of a patient’s trauma experiences and how these have had an impact on them. In some cases, while it can be challenging for patients, the map also appears to help patients develop a distance from their experiences and, therefore, facilitates understanding of the origins of their schema. Additionally, by making a map that explicitly shows the
connections between different events, it incidentally primes the patient for trauma processing, as the information is more readily accessible.

It is often useful to conclude the trauma map session by making links between the individual’s past trauma experiences, the process of therapy and their current ways of thinking, feeling and being in the world. In explaining how schemas drive current difficulties and reminding the individual that schemas develop because of events largely in childhood and beyond their control, there is a normalised and non-blaming rationale for their current struggles. Furthermore, hope is instilled that new schemas can bring new ways of thinking, feeling and being in the world.

Due to these experiences, you started to believe that [insert schema] was true. Although you may know that logically this is not true, on an emotional level, it can still feel true. While we cannot change what happened, we can change how these experiences are stored in your mind and how you think about those events. This in turn may help to change how you feel. So, the idea is that [insert positive belief opposite to schema] will start to feel more true and therefore it’s easier for you to behave in ways that will get your needs met.’ (Then give the patient a specific example relevant to their mental health goal.)

**Preparation for Treatment**

In any trauma-focused treatment preparation is important. Our impression is that the process of trauma mapping helps to provide patients with a rationale for treatment through the linking of their past experiences, negative self-beliefs and current behaviours. Thus, even at this early stage of conceptualisation, patients are primed to begin to address their trauma memories. We suggest that the mapping process typically takes one or two sessions, following which the trauma work begins.

Important to preparation is also providing a rationale for the use of IR, such as, this treatment works to help people change the meaning of their childhood trauma experiences by rescripting the event with a different ending so that they learn to feel differently about themselves. In IREM, we used the model proposed by Arntz and Weertman (1999), where the therapist first rescripts and then the patient rescripts. In the first stage of the rescripting, the therapist is able to model a corrective response to the child part of the traumatised patient. Often, patients with childhood trauma experiences or complex PTSD come from
backgrounds that are depriving so that they rarely had their needs met, and thus (understandably) don’t know how to do this for themselves as adults. The second stage of the rescripting is important for building self-efficacy. The therapist helps direct the patient to enter the image as their adult-self and does what is necessary to meet the needs of the child in that memory. This is then followed by the patient going back into the image as their child-self, with their adult-self by their side responding in ways that meets their needs. This third stage helps integrate corrective information enabling the patient to begin to meet their own needs in the present (Arntz, 2011).

**Imagery Rescripting: Reprocessing Trauma Memories**

In order to build a sense of safety and motivation for the methods, a useful early exercise can be a pilot rescript with a less aversive memory. Where possible, the pilot memory should be unrelated to the main trauma so that there is no risk of activating traumatic material through associated memory networks before the patient feels ready.

After the trauma memories have been mapped and the patient is sufficiently prepared for treatment, a schema formulation can help determine the target memory for processing. A memory that is prototypical of the schema or the most distressing make the best targets. In general, it is also better to choose early memories linked to the schema rather than later experiences where the schema was reinforced. This is sometimes described as choosing the first or worst trauma experience. In the case of Jane, the worst memory she identified was that of sexual abuse depicted by an image of being in her foster parent’s bed. The belief she had attached to this memory was worthlessness. Jane was asked to focus on all aspects of the experience in order to activate the trauma memory which was then reprocessed with IR.

A key ingredient of information processing models of trauma intervention is that the individual is connected with information that is incompatible with the trauma meaning (Brewin & Holmes, 2003). In IR, this is done by superimposing the trauma content with a new relational image of their needs being met. These new relational memories are incompatible with the negative messages encoded at the time of the trauma. For example, in working with a patient with a Defectiveness schema, in a scene where the child was punished for having made a mistake, the therapist instead enters the scene and shows compassion for
the child and, therefore, facilitates the patient developing more compassion for their Vulnerable Child mode. This work also includes targeting schema related behaviours or coping responses. For example, Jane, during her trauma work, was provided with a corrective emotional experience that reinforced the positive belief that she was worthwhile and important. During Jane’s trauma processing, she wanted to run away in the imagery. To address her avoidant behaviour, Jane was encouraged, during the rescripting, to confront the perpetrators and stand up for herself, which was linked back to her treatment goals of wanting to learn to deal with her problems head on and not to run away from difficult situations.

During treatment, the therapist should be mindful that IR can trigger the patient’s Punitive Parent mode, where punishing messages internalised from the original abuse or trauma resurface. This mode often relates to schemas such as Defectiveness and Punitiveness where the patient feels they are fundamentally flawed or ‘bad’ and they deserved what happened in the original trauma memory. The therapist will need to engage with the mode, or a representation of it, to ensure that the patient feels safe and protected and to reattribute any punishing messages to the Punitive Parent mode, rather than being left with these messages as negative ‘facts’ about their character.

If the patient’s sense of their Punitive Parent mode is closely associated with the actual parent or abuser it can be addressed in normal rescripting. In other cases, imagery can be used to manipulate the punitive mode in a manner that reduces its power for the patient. This could be putting a muzzle on a dog or, in Jane’s case, shrinking the punitive mode to the size of an ant and blowing it away from her. Depending on the severity of the mode, the therapist may have to guide the patient out of the image and use other techniques, such as chair work, limited reparenting, or psychoeducation as a way of helping the patient become aware of how this punitive mode relates to their ongoing difficulties.

Once a particular memory has been reprocessed, the therapist and the patient review the trauma map and the patient is invited to consider which of the other experiences continue to be associated with distress. This memory then becomes the next target for trauma processing. In the IREM study, we typically process four or five trauma memories in a 12-session programme. It is not often possible to process all of the memories on the map, which is why it is important to target the ones producing the most distress. Also,
because of the associated nature of the trauma network, four or five targeted memories seems sufficient for schema change.

**Case example: treatment progress and outcome**

Jane scored 55 on the Impact of Events Scale–Revised (IES–R; Weiss & Marmar, 1997) prior to beginning therapy. Scores on the IES–R range from 0–88; a score of 55 would be in the severe clinical range for PTSD. She was initially hard to engage in treatment. She reported difficulties in making her scheduled appointments and would often try to avoid engaging in the therapeutic process. Jane’s difficulties were explored, and she acknowledged that she was worried that she would get it wrong, ‘just like everything else’. Her difficulties were explained in the context of her schema formulation linking them to her problem behaviour and her treatment goals. Jane also struggled to express her feelings and needs in the rescripting: in particular, she struggled to express anger. To help her learn to express herself, Jane was encouraged to think about all the things she would want to include in a statement to explain how her trauma experiences impacted her and her life. It was at this point in her treatment that Jane was given the task to intervene in her own rescripting of the trauma memory. She was encouraged to think about the statement she had written and then to imagine what she would say or do to her foster parents to let them know how much they had hurt her. It was after the sixth session, where Jane allowed herself to express her anger towards her foster parents, that saw her IES–R scores drop to 39, which would indicate that she would be in the moderate range and would still meet criteria for PTSD.

During the course of the treatment, Jane and her husband decided to finalise their separation; however, weeks later she reported that her husband had called and wanted to reconcile. During this conversation Jane reported anger at her husband for ‘trying to bully me into changing my mind’. She acknowledged that, in the past, she would have felt pressured and would have eventually complied with her husband’s wishes. However, for the first time in a long time, Jane stood up for herself and put her needs first. Experiences like this directly contributed to her evolving sense that she was important and worthwhile. This experience of speaking up for herself was reflected in Jane’s IES-R score of 14 at session 10 which would suggest that Jane was in the mild range and no longer met criteria for PTSD. Following this,
Jane came to the realisation that she wanted to remain single and was feeling free for the first time in her life. Jane’s score at her last session was 5, meaning she was in the subclinical range for PTSD. Although she was scheduled for 12 sessions, Jane felt that after 11 sessions she had adequately addressed her trauma history. The therapist decided that, as part of reparenting her Subjugation schema, it was important to reward her for expressing her needs, so it was agreed that treatment would be terminated at this point.

**Summary**

Recent studies have demonstrated that it is possible to treat complex PTSD with trauma-focused interventions (Ehring et al., 2014; Van Woudenberg et al., 2018). Simultaneously, there has also been a greater recognition of the importance of treating trauma as a first-line intervention approach. In IREM, we interviewed 16 therapists who participated in the study. One of the emerging themes from the qualitative interviews was that since their involvement in the study, and regardless of what treatment approach, the majority would treat PTSD first and then address other issues as necessary.

A limitation of the generalisability from the study was that all participants had to report PTSD symptoms from childhood, agree to want to try a trauma treatment and be prepared to commit to the 12 sessions. We find, in our clinical practice, that those patients who have trauma history but are vague on whether they experience PTSD symptoms and/or are unwilling to commit to treating their trauma memories do not benefit from a trauma approach initially and need more emphasis on developing the therapeutic relationship and a capacity to tolerate negative emotions.

We have presented a rationale for understanding of the impact of trauma on a patient’s schemas using a trauma map and how this can facilitate their engagement in a trauma-focused treatment. This includes drawing links between a patient’s various trauma experiences, schemas, current behaviours and coping styles of surrender, avoidance and overcompensation. We then identify positive schemas and relate this to the patient’s treatment goals. Once all of this information is collected, the schema formulation is then used to help determine the memory to be targeted for treatment.

Once trauma reprocessing begins, we recommend that the initial memory targeted is either the *first memory* related to the schema (for example, the first time abuse occurred) or the *worst memory* (the...
memory associated with the highest distress, or the memory that is most representative of the schema. The reasons for using these memories is that they are the most critical to the schema network and, therefore, once treated, produce the most emotional change. Furthermore, they also increase the chance that the treatment effects from the initial sessions generalise to other memories related to the schema. Occasionally, the initial memory chosen may not be the first or worst, but one that seems to best encapsulate the schema. After initial processing of a memory, the map is useful in guiding the therapy to the next most relevant trauma memory to be processed. This can enhance the effectiveness of trauma-focused interventions such as EMDR and IR.

In sum, the trauma map operates as a framework for patient and therapist to understand the impact of trauma on many areas of the patient’s life and sense of self (their schemas, their coping strategies and their current struggles). The map illustrates why the patient is affected as deeply and pervasively as they are and why their schemas continue to be triggered and perpetuated in their current life. It also makes sense of how imagery re-scripting can help to heal the patient’s schemas in a containing and purposeful manner, allowing both patient and therapist to feel more courageous in their endeavours to face, rather than avoid, painful and distressing memories. In imagery rescripting, initially the therapist and later the patient, have the opportunity to give the traumatised child what they needed but never had, and, as such, start a process of much needed schema healing. The map then allows the therapist and patient to regroup after each rescripting and for the patient to integrate emotionally corrective experiences into a broader understanding of themselves and their schemas. Once key developmental experiences have been rescripted, the patient is less likely to be triggered and has a stronger internalised Healthy Adult to meet their needs in everyday life.

Therapist tips

- A schema case conceptualisation provides an important early foundation for preparing patients with complex trauma for intervention work. This shared case conceptualisation identifies trauma memories that are to be targeted and so effectively guides treatment.
• It is recommended that, in general, the first memory, the worst memory or one that is most representative of the schema be used as the target for rescripting.

• However, therapists need to be sensitive to the patient’s window of tolerance and reluctance to address some memories. Non-core memories are, therefore, occasionally chosen as practice targets, before addressing core trauma memories.

• We encourage a developmental and stepped model for complex patients. The therapist models the appropriate reparenting response for patients before the patient uses their adult-self to provide for their needs.

• During processing, therapists should be mindful of the schema that is being targeted and the antidote messages that will be needed to provide schema healing.
References


