Behavioural and Cognitive Psychotherapy, 2001, 29, 57–70
Cambridge University Press. Printed in the United Kingdom

Clinical Section

THE SUCCESSFUL TREATMENT OF PTSD THROUGH OVERT COGNITIVE BEHAVIORAL THERAPY IN NON-RESPONDERS TO EMDR

Grant J. Devilly

University of Melbourne, Australia

Abstract. This research investigated the efficacy of an operantly cognitive-behavioural trauma treatment protocol (TTP) in two cases that had previously been treated unsuccessfully with EMDR. In line with previous research, both participants improved following TTP, to the extent where one of the participants was asymptomatic at post-treatment and 3 month follow-up. These cases also demonstrate the ability of a cognitive-behavioural intervention to successfully treat childhood sexual abuse victims later in life.

Keywords: PTSD, trauma, treatment, CBT, EMDR, outcome.

Introduction

Recent advancement in the controlled research of Cognitive Behaviour Therapy (CBT) for Post Traumatic Stress Disorder (PTSD) has led to the prominence of imaginal and *in vivo* exposure as a treatment option. This therapeutic intervention was found in 1989 to display utility with cases of combat PTSD (e.g., Keane, Fairbank, Cadell, & Zimmering, 1989; Cooper & Clum, 1989), female sexual and non-sexual assault victims (Foa, Rothbaum, Riggs, & Murdoch, 1991; Foa et al., 1999), childhood sexual abuse (Dancu, Foa, & Smucker, 1993), and generic trauma groups (Marks, Lovell, Noshirvani, Livanou, & Thrasher, 1998; Devilly & Spence, 1999).

The year 1989 also saw the introduction of another technique that utilizes imaginal exposure, which became known as Eye Movement Desensitization and Reprocessing (EMDR; Shapiro, 1989). In this article the investigator claimed that ''enough information has been given here to achieve compete desensitization of 75–80% of any individually treated trauma-related memory in a single 50-min session'' (page 221). The promise of a curative treatment led to the research of its efficacy with trauma cases (e.g., Shapiro, 1989; Forbes, Creamer, & Rycroft, 1994; Rothbaum, 1997; Carlson, Chemtob, Rusnak, Hedlund, & Muraoka, 1998; Devilly, Spence, & Rapee, 1998), as well as for phobic type responses (e.g., Feske & Goldstein, 1997; Muris, Merckelbach, Holdrinet, & Sijsenaar, 1998). Unfortunately, the

Reprint requests to Dr Grant J. Devilly, Department of Criminology, University of Melbourne, Victoria 3010, Australia. E-mail: dev@crim.unimelb.edu.au

results of some of these investigations were limited by their methodology (see Lohr, Tolin, & Lilienfield, 1998, for a critical review of the EMDR literature) and a lack of agreement on the interpretation of these results (see Shapiro, 1996, for a review of the EMDR literature as a comparison to the Lohr et al., 1998, review). However, two things have become clear over this decade of research: the eye movements appear superfluous to the procedure (e.g., Renfrey & Spates, 1994; Foley & Spates, 1995; Carrigan & Levis, 1999; Devilly et al., 1998), and no one has managed to replicate Shapiro's (1989) results.

Another picture beginning to emerge is that some treatment-outcome studies into EMDR have found the positive effects of EMDR to deteriorate over time (e.g., Feske & Goldstein, 1997; Devilly & Spence, 1999; Macklin et al., in press). Therefore, it is necessary at this time to begin to investigate whether this is a phenomenon due to such people being treatment-refractory or whether it is more related to the intervention type. This has been discussed at greater length by Devilly (2000a).

With two treatments for PTSD claiming such efficacy, it is surprising that until 1999 there was a dearth of research into their comparative efficacy. The research on EMDR had been largely limited to evaluating treatment components (e.g., Devilly et al., 1998; Foley & Spates, 1995) or comparing a specific treatment against wait-list controls or other unvalidated treatments (e.g., Shapiro, 1989; Rothbaum, 1997; Carlson et al., 1998). Muris et al. (1998) did compare exposure *in vivo* against EMDR in child spider phobics and found a distinct superiority for *in vivo* exposure. To address the deficiency in the area of PTSD, Devilly and Spence (1999) compared EMDR against a CBT trauma treatment protocol (TTP; prolonged imaginal exposure and *in vivo* exposure in combination with stress inoculation training and cognitive therapy) in a controlled research design utilizing generic trauma cases. It was found that the TTP was both statistically and clinically more effective in reducing pathology related to PTSD than EMDR and that this superiority was maintained and, in fact, became more evident by 3-month follow-up.

In fact, at the end of the Devilly and Spence (1999) trial, most of the EMDR participants still met criteria for PTSD. Therefore, once all the data had been collected and the results were known, these participants were offered the TTP treatment, a move ethically driven. This research, therefore, looks at two participants who firstly received EMDR and then received TTP. In accordance with the results from the major study, it was hypothesized that these participants would improve following the TTP and that these improvements would be maintained over time.

Method

Design

This research should be seen within the context of a larger study (Devilly & Spence, 1999) which allocated participants, using a stratified randomization technique, into two conditions; TTP or EMDR. Following the completion of this larger study, and the availability of the results, it became clear that TTP appeared more effective than EMDR in reducing PTSD symptomatology. As a result, those participants who had received EMDR and who were still significantly bothered by symptoms of trauma at the 3-month follow-up were offered the CBT trauma treatment protocol. Two participants accepted this offer and they provide the basis of this study. Nine of the initial eleven EMDR treated cases were classified as

failures (still meeting *all* criteria for PTSD as measured by the PSS-SR) and six of these were contacted at the end of the initial research study to be offered treatment. The other three participants could not be contacted due to moving house. Of the six contacted two were already receiving further therapy elsewhere, two did not reply to messages left and the two who did reply wished for further treatment.

Treatment was evaluated using a modified non-concurrent single subjects design, in which the same treatments were introduced to the two participants in the same order. Anna completed the 3-month follow-up after EMDR and, as the data from the larger study were not analysed until *all* treatment had ceased, was offered TTP a further 11 months later. Anna, therefore, was administered a new intake questionnaire battery at the beginning of the TTP. Jill was one of the participants who was treated towards the end of the larger research project and by the time we received her 3-month follow-up after EMDR, all treatment had ceased. Therefore, she was offered and began the TTP within 1 week of completing her EMDR, 3-month, follow-up battery and hence a new intake assessment was seen as redundant and unnecessarily burdensome. Thus, it should be noted that the TTP intake scores on all measures for Jill are in fact from her 3-month follow-up from EMDR. Due to the results of the larger study (Devilly & Spence, 1999) it was not possible to vary the order of treatments (i.e., one of the participants to have TTP first and then EMDR). Furthermore, it was deemed unethical to provide one of the participants with continued EMDR therapy to assess that any change was due to the specific regimen rather than ''extra treatment''.

Participants

Anna was a 46-year-old female who presented at the clinic following advertising for the larger research study by the author at a Victims of Homicide support group. This lady had been married for 27 years and lived with her husband in what had become a volatile relationship. Anna reported that the marriage had only deteriorated over the last 3 years, since the death of her son, yet was not an abusive relationship. Anna's symptomatology was related to her son's murder. Anna received a phone call from witnesses to the assault and immediately went to the hospital. On arrival she ran into the emergency room and saw Bill, surrounded in blood, being given open-heart massage by a doctor. The night progressed for the worse and Bill eventually died 1–2 hours later. During the first assessment session Anna described her main problems (from the Personal Problem Definition questionnaire; PPD) as experiencing nightmares, a lack of direction in her personal relationships, experiencing ''flashbacks'' everyday, and general sleep difficulties. She had also stopped paid employment since the incident, increased her alcohol intake and was taking psychotropic medication (sertraline and alprazolam) daily. She explained the deterioration of her marriage as being due to an inability to ''move-on'' when the rest of the family had and being generally ''angry with life''. During the course of therapy Anna related her most strident belief to be that she ''didn't do enough and let Bill down''.

Jill was a 25-year-old student who was referred to the research project by a local medical practitioner. At intake, she reported a severe history of physical and sexual abuse by her step-father from the age of 8 to 10 years old, and another incident of sexual abuse involving her step-father at the age of 12 years. Her step-father committed suicide when police became involved. She felt that these incidents had affected her life since the abuse began, but that it had become a more prominent and distressing issue for her over the last 6 years. During

the first assessment Jill described her main problems as being the degree to which she experienced anger outbursts, had low self-esteem, mistrusted people's intentions, felt isolated, and was generally anxious. During therapy Jill highlighted the beliefs that she ''should have done more to stop him'' and that she ''was dirty'' as the most pervasive negative tenets in her life related to the abuse. At intake she was taking no medication and drank only moderately (about 8 standard glasses of wine per week).

Measures

Severity of presenting complaints was assessed throughout the study (pre-, post-treatment, 2 week and 3-month follow-up) using the following measures; the trait measure of the Spielberger State-Trait Anxiety Inventory (STAI-Y2; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983), Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), Symptom Checklist-90-R (SCL; Derogatis, 1992), Subjective Units of Disturbance Scale (SUD; Wolpe, 1969), Personal Problem Definition (Questionnaire (PPD; Devilly & Gournay, work in progress), Civilian Mississippi scale for PTSD (CMS; Keane, Caddell, & Taylor, 1988), Impact of Events Scale (IES; Horowitz, Wilner, & Alvarez, 1979), PTSD Symptom Scale-Self Report (PSS-SR; Foa et al., 1993), PTSD Interview (PTSD-I; Watson, Juba, Manifold, Kucala, & Anderson, 1991), Credibility/Expectancy Questionnaire (CEQ; Devilly & Borkovec, in press), and the Distress/Endorsement Validation Scale (DEVS: Devilly, 2000b). These measures are discussed in greater detail in the larger study (Devilly & Spence, 1999). The PTSD-I is a DSM-III-R based, clinician administered interview and was administered at intake to clarify a PTSD diagnosis. Both participants met the criteria for a current diagnosis of PTSD.

Therapists

There were two therapists (A and B) who saw the participants in this study, both of whom were trained in EMDR to Level II by the EMDR Institute. Therapist A was also trained in prolonged exposure by Foa (1995), and this therapist conducted all TTP therapy. Therapist B initially saw Anna and delivered the EMDR therapy, yet was not available to continue and deliver the TTP to this participant 1 year later, having moved from the area. Therefore, therapist A delivered TTP to Anna and EMDR and TTP to Jill.

Procedures

EMDR: EMDR was administered as already adequately described by Devilly et al. (1998), and Shapiro (1989), amongst others. However, no matter how much detail is provided within a written research report, there will never be enough room to enable the author to fully insulate the paper against charges of ''lack of fidelity'' to the procedure. With this in mind it has been decided that, in addition to the above referenced descriptions of the EMDR procedure, a reproduction here of the fidelity checklist as used in this study would prove to be a beneficial addition to the available research on this topic. This checklist was initially produced in private consultation with Dr Howard Lipke (who has acted in previous studies as the primary fidelity rater for the EMDR Institute) for Pitman et al. (1996). The current author is grateful to these researchers for giving permission for this checklist to be used by

Devilly and Spence (1999). This checklist has had even more items added to the checklist than the one produced by Dr Lipke to make sure that there was no cross pollination between the treatment approaches of EMDR and TTP.

The checklist includes: instructions to the patient on proper 0–100 (or 0–10) rating of suds; obtains the name of the uncomfortable emotion; ascertains where in body uncomfortable emotion is felt; instructs patient in providing feedback; informs patient that if s/he objects, s/he doesn't have to give details of thoughts; obtains negative self-statement (unless patient has difficulty providing); obtains positive cognition (unless patient has difficulty providing); obtains rating of positive cognition (VoPC) (unless patient has difficulty providing); begins first treatment session by explaining EMDR process; instructs patient to attend to scene, negative feelings, and negative thoughts during finger movements; performs finger movements within described parameters if patient is following; if patient is not following, makes appropriate changes, e.g., changes speed, distance from face, or direction or slows progression of increase in number of movements or uses alternate finger raising; performs initial set of at least 24 back and forth movements, unless patient signals to stop; encourages eye movements if patient shows intense emotion; if patient stops moving eyes without signalling therapist, works to get eyes moving again and, if unable, works to prevent dissociation; if suds appear at lowest level, reintroduces original scene and rechecks suds; if desensitization is not complete, inquires as to reason and continues finger movements; when scene is desensitized, takes VoPC on current positive cognition; if VoPC has not reached 7, inquires as to reason and re-performs finger movements with current positive cognition; if discomfort persists, there is no change in experience, or experience ''loops'', attempts change in direction and/or speed of finger movements; performs one of the following interventions to deal with resistance (not necessarily in order) before moving to next item: changes focus of attention (e.g., visual to feeling), focuses on specific aspect of experience (e.g., a specific sound or part of the image), has patient imagine unspoken words, inquiries whether material is being excluded from awareness intentionally and if so, reminds patient to let experience unfold, has patient approach scene from a distance, uses positive thoughts with scene, addresses interfering motivations (e.g., avoidance of current life problems), performs finger movements with derived positive cognitions or projected fearful situations; avoids pursuing a line of material that will require longer than the 120 minute limit to complete; terminates session within 120 minutes; chooses an appropriate termination point; focuses on positive and distancing ideas when necessary to help conclude session; performs body scan and body scan protocol at termination; uses relaxation techniques when necessary to help conclude session; check that uses techniques not within EMDR protocol or uses too much cognitive intervention.

This checklist was marked both overall and for each item on a scale of 0 (unacceptable), 1 (marginal), and 2 (low) to 6 (high). This was completed by an independent rater who was experienced in treatment delivery, had been trained to EMDR level II, and was not aware of the research results.

TTP: The cognitive Behavioural Trauma Treatment Protocol was initially based upon the work of Foa et al. (1991). However, TTP did not strictly follow all of the Foa research group recommendations. As discussed in Devilly and Spence (1999), it was felt that Foa's original design could be improved by removing inert procedures from the stress inoculation training, increasing the time spent on more active components, changing the timing of therapeutic delivery to once a week instead of bi-weekly and introducing a much stronger

Table 1. Treatment Protocol for the TTP condition

Session 1:	Assessment and breathing (90 minutes)
Session 2:	Education and treatment planning (90 minutes)
Session 3:	Deep muscle relaxation and breathing retraining
	Cue controlled and differential relaxation
	Thought-stopping (90 minutes)
Session 4:	60 minute exposure to traumatic scene – Taped (90 minutes)
Session 5:	30–45 minute exposure to traumatic scene
	Beck/Ellis cognitive restructuring (120 minutes)
Session 6:	30–45 minute exposure to traumatic scene
	Guided self-dialogue (120 minutes)
Session 7:	30–45 minute exposure to traumatic scene
	Cognitive intervention
	– Discussion and behavioural experiment (90 minutes)
Session 8:	30–45 minute exposure to traumatic scene
	Cognitive intervention during exposure (90 minutes)
Session 9:	30–45 minute exposure to traumatic scene
	– Activate traumatic schema
	Review coping skills
	Termination (90 minutes)

and more integrative cognitive component. Table 1 outlines the TTP as used in this study and described further by Devilly and Spence (1999). However, whilst many agree that EMDR needs appropriate training to be delivered effectively, this same principle is not always applied to CBT techniques. The author would like to stress that traditional CBT is no less sensitive to lack of experience, inappropriate delivery or therapist variables than any other treatment approach, a point not taken into account by several other research designs.

Results

Phase 1 (EMDR)

As can be seen from Table 2, and demonstrated in Figures 1 and 2, Anna appeared to worsen over time following EMDR. Her scores on most measures display a gradual increase in severity and at post-treatment and 3-month follow-up she also still met the DSM-IV criteria for PTSD, as measured by the PSS-SR. A reliable change index was developed for each measure utilized (Jacobson & Traux, 1991) and between intake and 3-month follow-up Anna displayed a reliable deterioration on the STAI (trait), BDI, CMS and SCL-90-R Global Distress Scale. On the IES and PSS-SR there was not a reliable change in scores ($p < .05$). Anna also remained within the clinical range on all measures.

Anna was also still taking psychotrophic medication at 3-month follow-up (venlafaxine and alprazolam) and had also made an appointment to see ‘‘someone from Adult Mental Health’’. Upon intake for the TTP condition, Anna stated that she believed herself to be ‘‘a lost case’’, and that having been ‘‘treated at the University and still no better’’ became despondent and, at times, suicidal. This pattern of increased dysphoria was particularly evident in her escalating BDI scores over time. It should be noted that although Anna rated

https://doi.org/10.1017/S1352465801001072 Published online by Cambridge University Press

Table 2. Pre-, post-treatment, 2 week and 3-month follow-up scores for Anna and Jill

Measure	Group	Pre-treatment	Post-treatment	2-week follow-up	3-month follow-up
Spielberger Trait Anxiety	TTP	[a]62, [j]52	41, 21	—	44, 20
	EMDR	[a]55, [j]64	50, 27	—	69, 52
Beck Depression Inventory	TTP	[a]40, [j]33	9, 2	—	20, 0
	EMDR	[a]31, [j]47	21, 2	—	48, 33
SCL-90-R Global Distress	TTP	[a]2.49, [j]1.52	0.81, 0.02	1.10, 0.02	1.07, 0
	EMDR	[a]1.47, [j]2.25	1.91, 0.11	2.69, 0.18	2.89, 1.52
Subjective Units of Disturbance	TTP	[a]100, [j]10	50, 0	50, 0	50, 10
	EMDR	[a]90, [j]100	80, 5	90, 10	90, 10
Personal Problem Definition	TTP	[a]36, [j]23	21, 0	20, 2	18, 6
	EMDR	[a]32, [j]38	34, 6	37, 8	40, 23
Civilian Mississippi Scale	TTP	[a]141, [j]115	100, 47	—	105, 44
	EMDR	[a]127, [j]132	113, 56	—	159, 115
Impact of Events Scale	TTP	[a]57, [j]34	13, 1	—	36, 0
	EMDR	[a]59, [j]52	59, 4	—	61, 34
PTSD Symptom Scale	TTP	[a]38, [j]34	20, 0	—	19, 0
	EMDR	[a]42, [j]47	33, 4	—	43, 34

Note: [a] = Anna's Scores; [j] = Jill's Scores; PTSD = Post Traumatic Stress Disorder; SCL-90-R = Symptom Checklist – 90 – Revised.

SUDs as 80 in the questionnaire package at post-treatment, her within session SUDs scores dropped from 80–90 to 10–20.

Jill, on the other hand, appeared to respond to EMDR exceptionally well immediately following treatment, no longer meeting the criteria for PTSD and decreasing her scores on all assessment measures to being outside the clinical cut-offs. However, by 3-month follow-up Jill once again met the criteria for PTSD, and although not as extreme as at intake her scores had dramatically increased on all measures, with the exception of SUDs. Again, the change in scores was evaluated with respect to reliable change. Jill displayed reliable improvement (from pre-treatment to 3-month follow-up) on the BDI, CMS, IES and SCL-90-R Global Distress Scale. There was no reliable change in scores on the STAI(trait) and PSS-SR. However, while displaying reliable improvement from pre-treatment to 3-month follow-up, she continued to display symptomatology that was within the clinical domain on

https://doi.org/10.1017/S1352465801001072 Published online by Cambridge University Press

all measures. Therefore, while the improvement was psychometrically reliable, it did not introduce a change in clinical status.

During the first session of TTP Jill related that she had been feeling much improved until a ''family situation'' occurred, which triggered past memories and emotions and she felt that she had few personal skills to cope. She reported that the symptoms then started to return and she began to experience ''the same old problems''.

Phase 2 (TTP)

As can be seen from Table 2 and the representative graphs (Figures 1 and 2), by post-treatment Anna displayed a marked decrease on all measures and particularly those related to PTSD symptomatology and depression. By 2-week follow-up this decrease in symptomatology had been maintained, and indeed held reasonably constant until the 3-month follow-up. The only exception was a slight increase in her depression score (as measured by the BDI) at the 3-month follow-up. Looking again at reliable change, Anna reliably improved on all measures, although still met criteria for PTSD. However, using the PSS-SR as a diagnostic guide, Anna still met criteria for PTSD at both post-treatment and 3-month follow-up, yet it should be noted that she tended to score 1 out of a possible 3 for items that she did endorse. This is possibly a weakness of the PSS-SR, whereby any item endorsement (even those with a rating of ''once in a while'') is taken as a symptom to be counted towards a diagnosis. However, the Impact of Events Scale did show an increase again by 3-month follow-up, she had been medication free for 5 months, had nil alcohol intake for 2 months and had also stopped smoking cigarettes for 2.5 months.

During the course of treatment a large focus of therapy was on Anna's belief that she ''should have been with him'' when he died. During the imaginal exposure this belief was tested and it is thought by the author that the acceptance of her role in the incident was of particular importance to Anna's recovery. For instance, she decided that should she have stayed in the emergency room, she would have detracted from the Doctors' attendance to Bill and this may have decreased his changes of survival. It is believed that the use of imaginal exposure to create such cognitive shifts is so successful because it includes an affective component and not just an intellectual one, as in traditional cognitive therapy. This was further built upon through exposure *in vivo*, such as visiting a hospital. However, it is suggested that Anna's continuing problems are likely to be more related to marital stress and it is the author's belief that, for a full remission, couple therapy would be required. This has since been offered, yet her partner appeared to be unenthusiastic and the offer was declined.

Jill became asymptomatic with regard to PTSD by post-treatment and this was maintained to 3-month follow-up. Her scores on all measures dropped to below clinical cut-off and she displayed reliable improvement on all measures. Following treatment Jill divorced from her emotionally detached husband of 1 year and returned to University for study. She reported few personal problems and to have ''accepted'' herself and ''forgiven'' her mother.

Although at post-EMDR and 3-month follow-up Jill reported very low SUDs when imagining a representative image of the abuse, it became clear during the early stages of TTP that this was not the case. On the first session of prolonged imaginal exposure she reported her SUDs level to be 90, which decreased within the session to 20. The second session started at 80 and was 50 by the end. This pattern continued until the last session saw an

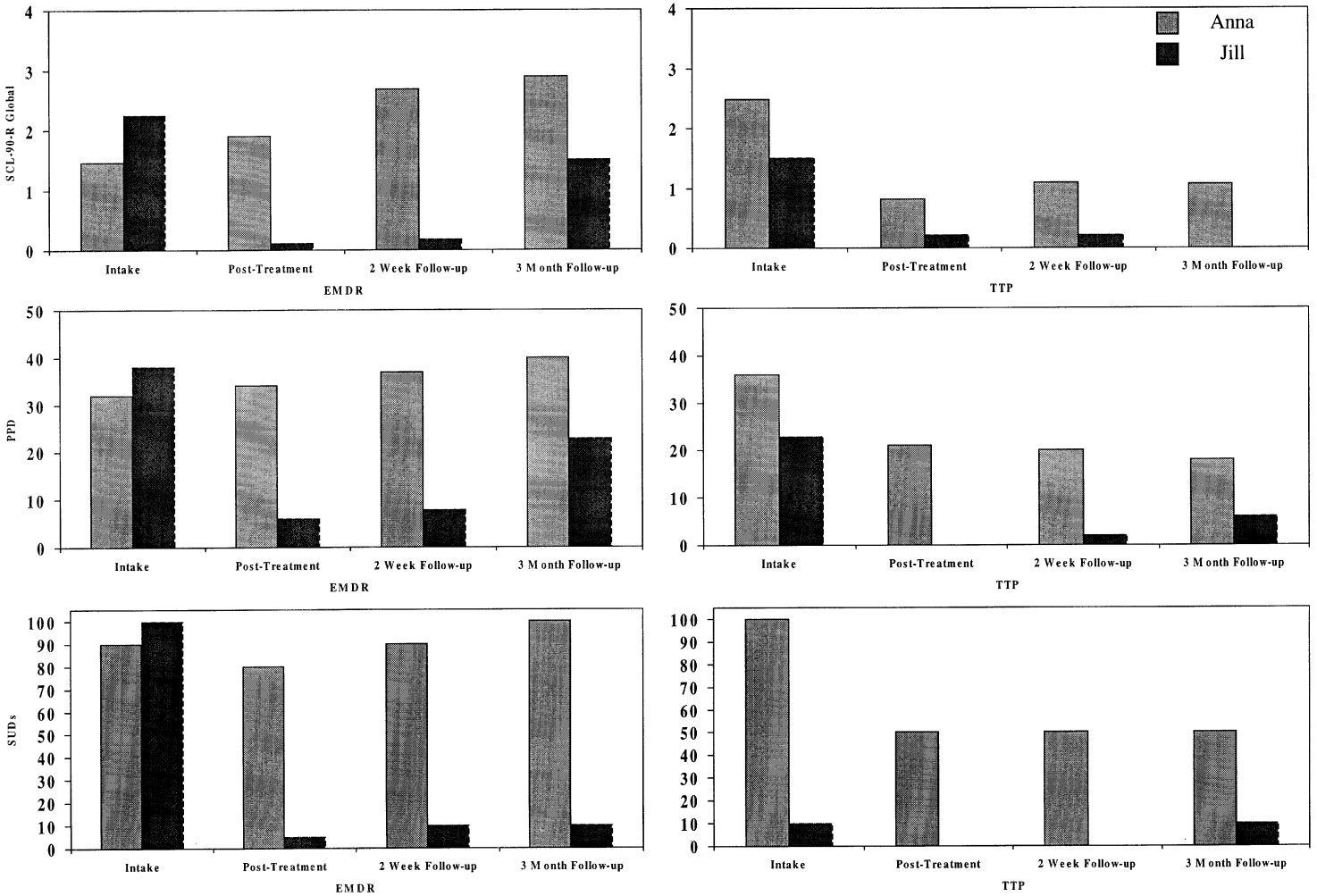

Figure 1. Representative treatment outcome for Anna and Jill, from pre-treatment, through post-treatment to 2-week and 3-month follow-up, for both EMDR and TTP. *Note:* SCL-90-R Global = Global distress rating of the Symptom Checklist-90-R; PPD = Personal Problem Definition Rating Scale; SUDs = Subjective Units of Distress.

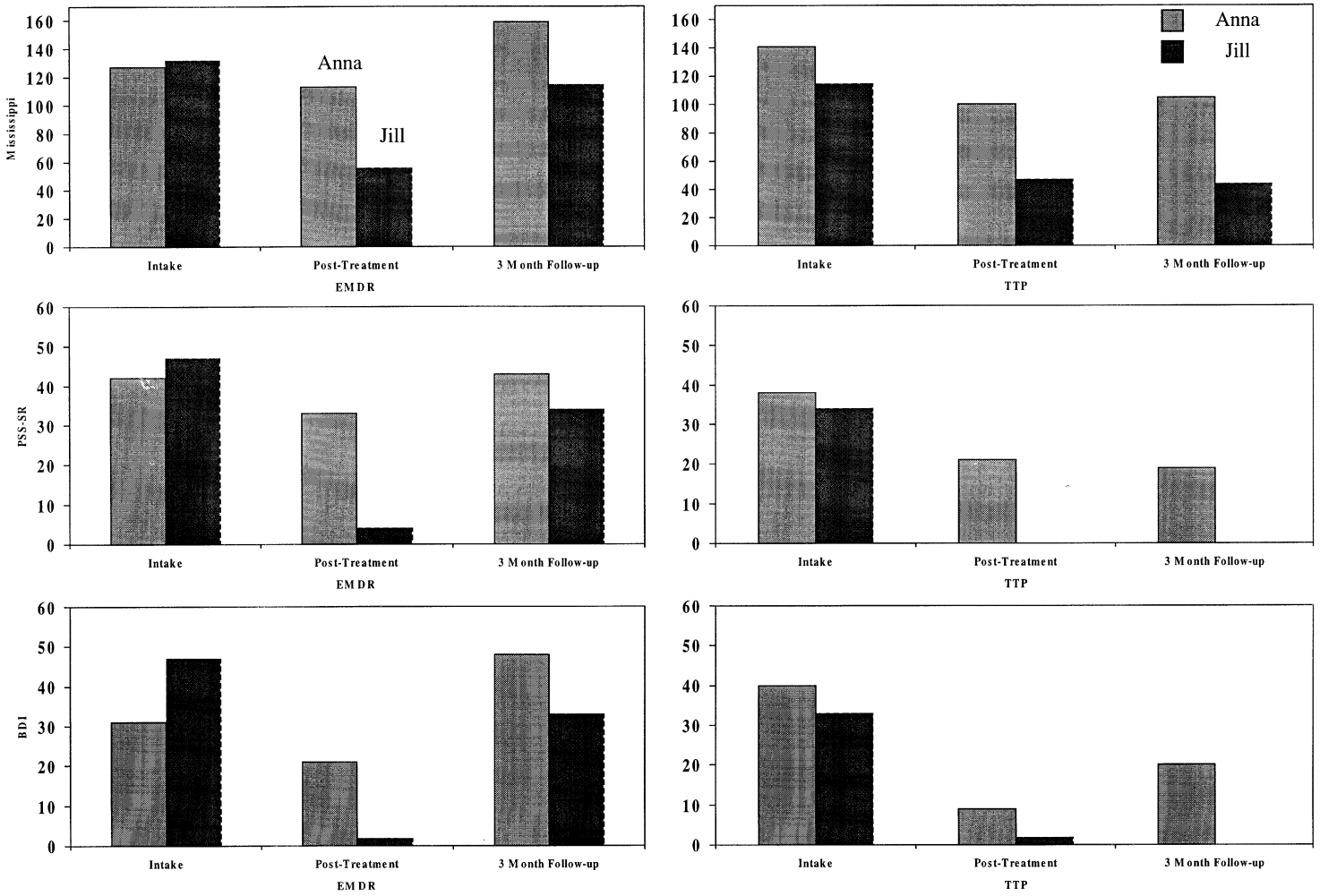

Figure 2. Representative treatment outcome for Anna and Jill, from pre-treatment, through post-treatment to 3-month follow-up, for both EMDR and TTP. *Note:* Mississippi = Civilian Mississippi scale for PTSD; PSS-SR = PTSD Symptom Scale – Self-Report; BDI = Beck Depression Inventory.

initial score of 15 and 5 by the end. Exposure *in vivo* homework included such tasks as looking in the mirror with her clothes on, in just her underwear and then fully naked, as well as other tasks such as talking to her mother and saying the abuser's name out loud. Jill reported to greatly benefit from these interventions, and while coping skills made the exposure *in vivo* tasks initially easier, these were quickly dispensed with and a change in belief regarding responsibility during the abuse and her current self-concept was fully realized.

Treatment fidelity

Jill agreed to be video taped during the EMDR for purposes of evaluating treatment integrity and in total five sessions were recorded and rated. All sessions were rated as a 5 (acceptable to high fidelity) overall. The mean ratings for each aspect of all the sessions, as described above, were also all above 5 with a small standard deviation (session 2 = 5.23 (.59); session 4 = 5.35 (.75); session 6 = 5.52 (.51); session 7 = 5.32 (0.55); session 8 = 5.41 (.51)) and no ratings of below 4 were given.

Treatment distress/endorsement

Both Anna and Jill gave higher endorsement ratings to the TTP than the EMDR (TTP = 15 and 14, EMDR = 8 and 11, respectively), but Jill rated the TTP (39) as more distressing than the EMDR (29). Conversely, Anna rated the TTP (27) as substantially less distressing than the EMDR (44). It is, however, acknowledged that both participants received the TTP after the EMDR and without a cross-over design the significance of these results is somewhat diminished.

Discussion

This research aimed to investigate the utility of providing an overtly CBT based intervention (TTP) for PTSD to two, EMDR, treatment-refractory patients. It was found that the participants considerably improved following TTP and that this improvement was predominantly maintained to 3-month follow-up. One of the participants was asymptomatic at both post-treatment and follow-up, while the other participant still just met criteria, although rated most of the PTSD symptoms as ''once per week or less/a little bit/once in a while.'' Further to psychometric measures, both participants reported a positive change in their quality of life and became more involved in and reported greater success in fulfilling self-directed goals.

Considering the results, it is hypothesized that the poor long-term effect of EMDR with these non-responders is likely to be due to the nature of the intervention rather than the participants being treatment-refractory. It is suggested that the TTP was predominantly effective in these two individuals due to the imaginal and *in vivo* exposure extinguishing the fear response and facilitating a change in perspective (or meaning) with regards to the individuals' responsibility in their respective situations (Foa & Kozac, 1986; Davey, 1993). However, the EMDR seemed to externalize any of the benefits of therapy, and any benefits that did arise from the technique tended to be short-term. This is consistent with Haw and Dickerson (1998), who used EMDR as a distraction task during exposure and found that the positive effects dissipated over time. This result is also consistent with the overall results

https://doi.org/10.1017/S1352465801001072 Published online by Cambridge University Press

from the larger study (Devilly & Spence, 1999), which included these two participants, finding a deterioration of gains over time in the EMDR condition and maintenance or improvement of gains in the TTP condition. These results are also consistent with those of Pitman's research group (Pitman et al., 1996; Macklin et al., in press) who found that a 5-year follow-up of successfully EMDR-treated PTSD cases had returned to pre-intervention levels of functioning, and in some cases had become worse.

EMDR has many demand characteristics inherent in the procedure and the current author suggests that the use of a postal follow-up in this research significantly reduced the overall demand effects of the therapeutic research. The operation of such demand characteristics have been demonstrated by Rosenthal and Lawson (1964), Rosenthal, Fode, Friedman and Vikan (1960) and Rosenthal, Persinger, Kline, and Mulry (1963) and discussed in greater detail with relevance to EMDR by Devilly (2000a). Furthermore, EMDR treatment in one of the cases was rated by an ''independent'' trained therapist for fidelity to the procedure and was found to be generally high. This is also an improvement over past research where raters were used from the EMDR Institute (e.g., Jensen, 1994), and appear to have made the fatal error of confusing process with outcome (see Rosen, 1999, for a discussion of this issue).

This research was based upon treatment non-responders to EMDR and hence the usual single subject design methodology (Kazdin, 1982) was not able to be used for these cases. A better design would have used a multiple baseline, counterbalanced, cross-over design, an approach that future research may wish to address, particularly drawing on the research of past designs in this field (e.g. Acierno, Tremont, Last, & Montgomery, 1994). However, as mentioned above, it was deemed unethical to continue delivery of EMDR therapy to a research participant when TTP's superiority had already been concluded in a larger study. Therefore, there was no control for ''extra treatment'' during this research. However, in light of the larger study and having received nine treatment sessions of EMDR and still meeting *all* criteria of PTSD, it is deemed unlikely that another nine sessions of the same approach would have had the same impact as the TTP.

Overall, this study suggested that those participants with PTSD who failed treatment with EMDR in a larger outcome study improved after treatment from TTP, and hence it is suggested that it is the efficacy of the TTP that is responsible for differences between conditions and not an issue related to the subjects used or subject allocation.

References

Acierno, R., Tremont, G., Last, C., & Montgomery, G. (1994). Tripartite assessment of the efficacy of eye-movement desensitization in a multi-phobic patient. *Journal of Anxiety Disorders, 8,* 259–276.

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry, 4,* 561–571.

Carlson, J. G., Chemtob, C. M., Rusnak, K., Hedlund, N.L., & Muraoka, M.Y. (1998). Eye Movement Desensitization and Reprocessing (EMDR) treatment for combat-related posttraumatic stress disorder. *Journal of Traumatic Stress, 11,* 3–24.

Carrigan, M. H., & Levis, D. J. (1999). The contribution of eye movements to the efficacy of brief exposure treatment for reducing fear of public speaking. *Journal of Anxiety Disorders, 13,* 101–118.

https://doi.org/10.1017/S1352465801001072 Published online by Cambridge University Press

Cooper, N. A., & Clum, G. A. (1989). Imaginal flooding as a supplementary treatment for PTSD in combat veterans: A controlled study. *Behavior Therapy, 20,* 281–391.

Davey, G. C. L. (1993). Trauma revaluation, conditioning, and anxiety disorders. *Behaviour Change, 10,* 131–140.

Derogatis, L. R. (1992). *SCL-90: Administration, scoring and procedures manual-II.* Baltimore: Clinical Psychometric Research.

Devilly, G. J. (2000a). *The role of popularised distraction during exposure and countervailing demand effects during therapeutic research.* Manuscript submitted for publication.

Devilly, G. J. (2000b). *The Distress/Endorsement Validation Scale (DEVS) for clinical outcome studies.* Manuscript subbmitted for publication.

Devilly, G. J., & Borkovec, T. D. (in press). Psychometric properties of The Credibility/Expectancy Questionnaire. *Journal of Behavour Therapy and Experimental Psychiatry.*

Devilly, G. J., & Spence, S. H. (1999). The relative efficacy and treatment distress of EMDR and a cognitive behaviour Trauma Treatment Protocol in the amelioration of posttraumatic stress disorder. *Journal of Anxiety Disorders, 13,* 131–157.

Devilly, G. J., Spence, S. H., & Rapee, R. M. (1998). Statistical and reliable change with eye movement desensitization and reprocessing: Treating trauma within a veteran population. *Behavior Therapy, 29,* 435–455.

Dancu, C. V., Foa, E. B., & Smucker, M. R. (1993). *Cognitive behavioral treatment of survivors of childhood sexual abuse with PTSD.* Paper presented at the meeting of the International Society for Traumatic Stress Studies, San Antonio, Texas, USA.

Feske, U., & Goldstein, A. (1997). Eye movement desensitiztion and reprocessing treatment for panic disorders: A controlled outcome and partial dismantling study. *Journal of Consulting and Clinical Psychology, 65,* 1026–1035.

Foa, E. B. (1995). *PTSD workshop.* World Congress of Cognitive and Behavioural Therapies. Copenhagen, Denmark.

Foa, E. B., Dancu, C. V., Hembree, E. A., Jaycox, L. H., Meadows, E. A., & Street, G. P. (1999). A comparison of exposure therapy, stress inoculation training, and their combination for reducing posttraumatic stress disorder in female assault victims. *Journal of Consulting and Clinical Psychology, 67,* 194–200.

Foa, E. B., & Kozac, M. J. (1986). Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin, 99,* 20–35.

Foa, E. B., Riggs, D. S., Dancu, C. V., & Rothbaum, B. O. (1993). Reliability and validity of a brief instrument for assessing post-traumatic stress disorder. *Journal of Traumatic Stress, 6,* 459–473.

Foa, E. B., Rothbaum, B. O., Riggs, D. S., & Murdoch, T. B. (1991). Treatment of posttraumatic stress disorder in rape victims: A comparison between cognitive-behavioral procedures and counseling. *Journal of Consulting and Clinical Psychology, 59,* 715–723.

Foley, T., & Spates, C. R. (1995). Eye movement desensitization of public-speaking anxiety: A partial dismantling. *Journal of Behavior Therapy and Experimental Psychiatry, 26,* 321–329.

Forbes, D., Creamer, M., & Rycroft, P. (1994). Eye movement desensitization and reprocessing in posttraumatic stress disorder. A pilot study using assessment measures. *Journal of Behavior Therapy and Experimental Psychiatry, 25,* 113–120.

Haw, J., & Dickerson, M. (1998). The effects of distraction on desensitization and reprocessing. *Behaviour Research and Therapy, 36,* 765–769.

Horowitz, M., Wilner, M., & Alvarez, W. (1979). Impact of Event Scale: A measure of subjective stress. *Psychosomatic Medicine, 41,* 209–218.

Jacobson, N. S., & Traux, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Cinical Psychology, 59,* 12–19.

Jensen, J. A. (1994). An investigation of eye movement desensitization and reprocessing (EMD/R) as a treatment for posttraumatic stress disorder (PTSD) symptoms of Vietnam combat veterans. *Behavior Therapy, 25,* 311–325.

Kazdin, A. (1982). *Single-case research designs.* New York: Oxford University Press.

Keane, T. M., Caddell, J. M., & Taylor, K. L. (1988). Mississippi scale for combat-related PTSD: Three studies in reliability and validity. *Journal of Consulting and Clinical Psychology, 56,* 85–90.

Keane, T. M., Fairbank, J. A., Caddell, J. M., & Zimmering, R. T. (1989). Implosive (flooding) therapy reduces symptoms of PTSD in Vietnam combat veterans. *Behavior Therapy, 20,* 245–260.

Lohr, J. M., Tolin, D. F., & Lilienfield, S. O. (1998). Efficacy of Eye Movement Desensitization and Reprocessing: Implications for behavior therapy. *Behavior Therapy, 29,* 123–156.

Macklin, M. L., Metzger, L. J., Lasko, N. B., Berry, N. J., Orr, S. P., & Pitman, R. K. (in press). Five-year follow-up of Eye Movement Desensitization and Reprocessing (EMDR) therapy for combat-related post-traumatic stress disorder. *Comprehensive Psychiatry*.

Marks, I. M., Lovell, K., Noshirvani, H., Livanou, M., & Thrasher, S. (1998). Treatment of posttraumatic stress disorder by exposure and/or cognitive restructuring: A controlled study. *Archives of General Psychiatry, 55,* 317–325.

Muris, P., Merckelbach, H., Holdrinet, I., & Sijsenaar, M. (1998). Treating phobic children: Effects of EMDR versus exposure. *Journal of Consulting and Clinical Psychology, 66,* 193–198.

Pitman, R. K., Orr, S. P., Altman, B., Longpre, R. E., Poiré, R. E., & Macklin, M. L. (1996). Emotional processing during Eye Movement Desensitization and Reprocessing therapy of Vietnam veterans with chronic posttraumatic stress disorder. *Comprehensive Psychiatry, 37,* 419–429.

Renfrey, G., & Spates, C. G. (1994). Eye Movement Desensitization: A partial dismantling study. *Journal of Behavior Therapy and Experimental Psychiatry, 25,* 231–239.

Rosen, G. M. (1999). Treatment fidelity and research on Eye Movement Desensitization and Reprocessing (EMDR). *Journal of Anxiety Disorders, 13,* 173–184.

Rosenthal, R., Fode, K. L., Friedman, C. J., & Vikan, L. L. (1960). Subjects' perception of their experimenter under conditions of experimenter bias. *Perceptual and Motor Skills, 11,* 325–331.

Rosenthal, R., & Lawson, R. (1964). A longitudinal study of the effects of experimental bias on the operant learning of laboratory rats. *Journal of Psychiatric Research, 2,* 61–72.

Rosenthal, R., Persinger, G. W., Kline, L. V., & Mulry, R. C. (1963). The role of the research assistant in the mediation of experimenter bias. *Journal of Personality, 31,* 313–335.

Rothbaum, B. O. (1997). A controlled study of eye movement desensitization and reprocessing in the treatment of posttraumatic stress disordered sexual assault victims. *Bulletin of the Menninger Clinic, 61,* 317–334.

Shapiro, F. (1989). Efficacy of the eye movement desensitization procedure in the treatment of traumatic memories. *Journal of Traumatic Stress, 2,* 199–223.

Shapiro, F. (1996). Eye movement desensitization and reprocessing (EMDR): Evaluation of controlled PTSD research. *Journal of Behavior Therapy and Experimental Psychiatry, 27,* 209–218.

Spielberger, C. G., Gorsuch, R. L., Lushene, R. D., Vagg, P. R., & Jacobs, G. A. (1983). *Manual for the State-Trait Anxiety Inventory.* Palo Alto: Consulting Psychologists Press.

Watson, C.G., Juba, M., Manifold, V., Kucala, T., & Anderson, P. E. D. (1991). The PTSD Interview: Rationale, description, reliability, and concurrent validity of a DSM-111-based technique. *Journal of Clinical Psychology, 47,* 179–188.

Wolpe, J. (1969). *The practice of behavior therapy.* New York: Pergamon Press.