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The Roles of Popularised Distraction During Exposure and Researcher Allegiance During Outcome
Trials.

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Abstract

This paper presents the argument that distraction techniques utilised during exposure frequently lead to a dissipation of therapeutic gains over time. Such dissolution particularly affects anxiety and depressive symptomatology and becomes more pronounced over time. It is argued that such a pattern is beginning to emerge in the case of Eye Movement Desensitisation and Reprocessing (EMDR). It is hypothesised that extinction of a fear response requires exposure to a functionally absorbing affective and sensory cue set. However, it is suggested that eye movements have an interference effect on this exposure with an initial reduction in anxiety common to exposure tasks coupled with avoidance strategies followed by a general deterioration in gains. It is further hypothesised that demand characteristics placed upon the treated research participant and experimenter expectancy and therapist allegiance may play prominent roles where similar studies obtain differing results.

The utility of distraction during exposure is a hotly debated topic and research into its utility for the treatment of Post Traumatic Stress Disorder (PTSD) has been unyielding. This paper aims to briefly present an explanation for a trend that has become apparent in the outcome data of some studies investigating Eye Movement Desensitisation and Reprocessing (EMDR) and, generalising from this example, caution against the use of distraction during other exposure based treatments.

EMDR is a treatment technique that was initially proposed as a stand alone and discrete therapeutic approach which could desensitise a traumatic memory and promote more adaptive and realistic cognitions in “a single [90 minute] session” (Shapiro, 1989). Up until recently many of the comparison conditions to EMDR have been waitlist controls (e.g. Wilson, Becker and Tinker, 1995; Rothbaum, 1997), dismantling procedures controlling for eye movements (e.g. Devilly, Spence and Rapee, 1998; Renfrey and Spates, 1994) or single, unvalidated, interventions with poor effect sizes (e.g. Carlson, Chemtob, Rusnak, Hedlund and Muraoka, 1998). However, the two studies comparing EMDR to full CBT treatment packages / interventions have found CBT to be superior (Deville and Spence, 1999; Muris, Merckelbach, Holdrinet and Sijsehaar, 1998). But why should this be so? This article hypothesises that there exists a poor long-term outcome for EMDR when patient demand and therapist biasing effects are reduced and that the comparative inefficacy to exposure-based interventions is due to distraction during exposure impeding extinction of the fear response. Furthermore, it is the purpose of this article to argue for a method of reducing the demand effects inherent in treatment-outcome research so that the validity of the results are increased. It is suggested that this second point, together with researcher allegiance effects, is partly responsible for the lack of outcome conformity in similar studies which utilise distracted exposure.

The Poor Long-Term Outcome of EMDR

Pitman, Orr, Altman, Longpre, Poiré, and Macklin (1996) utilised a cross-over design with 17 Vietnam veterans with chronic PTSD, who received either an eye-fixed or eye-movement condition in a fidelity controlled outcome study. Outcome measures comprised validated clinician administered and self-report questionnaires and a host of psychophysiological measures. The results displayed only moderate improvements in both conditions and the only significant interactions were in favour of the eyes fixed condition. These authors suggested that eye movements may not be the therapeutic mechanism of the EMDR procedure when positive treatment effects are found. However, of yet further importance to the current article is the 5 year follow-up of the EMDR

treated participants by Macklin, Metzger, Lasko, Berry, Orr and Pitman (2000). These authors found that the modest beneficial effects of EMDR with these veterans were lost by follow-up, with a deterioration in symptoms even from pre-treatment. In fact, compared to matched controls who did not receive the intervention five years previously, the EMDR treated veterans were worse-off on 3 of the 5 outcome measures.

These results are congruent with those of Devilly, Spence and Rapee (1998). These authors randomly allocated fifty one war veterans with PTSD to one of three conditions: two sessions of EMDR, an equivalent procedure without the eye movements using a flashing light (Rapid Eye Dilation Desensitisation and Reprocessing), or a Standard Psychiatric Support control condition. A battery of standardised assessment instruments were utilised at pre- and post-treatment, including an assessment controlling for treatment credibility, and a 3 month follow-up was conducted by mail to reduce possible demand effects. Furthermore, psychophysiological assessment was performed by taking blood pressure and heart rate readings when the participants were relaxed and when imagining their trauma pre, post and during treatment.

The results showed that there was an overall significant main effect of time from pre- to post-treatment, with a reduction in symptomatology for all groups. However, no statistically significant differences were found between the groups, although participants in the two treatment conditions were more likely to display reliable improvement (Jacobson and Traux, 1991) in trauma symptomatology than subjects in the control group. By six month follow-up, reductions in symptomatology had dissipated and also there were neither statistical nor reliable differences between the two treatment groups. It is suggested that this dissipation in gains is similar to Macklin et al. (2000), yet was obtained over a shorter time period due to the method of data collection. In this study, as with the Devilly and Spence (1999) study presented below, data collection was obtained via postal mail. It is suggested that a shorter term postal follow-up and a much longer term follow-up (5 years), particularly one where the assessments were mainly self-reported measures, may increase the veracity of responses by increased anonymity, decreased demand characteristics generally and less experimenter bias.

This dissipation of gains was also particularly evident in the Devilly and Spence (1999) investigation. This research compared nine sessions of EMDR against a cognitive behavioural trauma treatment protocol (TTP). TTP was based on and extended from the work of Foa,

Rothbaum, Riggs, and Murdoch (1991) and comprised of imaginal and in vivo exposure, stress inoculation techniques and cognitive therapy. Thirty one participants (twenty three treatment completers) with PTSD from a range of traumatic experiences were randomly allocated to the two treatments. These participants were treated by therapists trained in both techniques and outcome was measured at post-treatment and 2 week and 3 month follow-up using a full range of validated, clinician administered interviews (at post-treatment only) and self-report questionnaires, which enabled comparison to the past research of both protocols. It should, however, be noted that the follow-up assessments were again administered via the postal service to decrease the demand effects inherent in face-to-face assessment. Sessions were also rated for treatment fidelity by an independent assessor.

It was found that compared to EMDR, TTP was both statistically and clinically more effective in reducing pathology related to PTSD and that this superiority was maintained and, in fact, became more evident by three month follow-up. This superiority was evident in all assessment measures and also translated into more TTP participants not meeting criteria for PTSD following treatment. Ratings of treatment distress displayed both approaches to be equally taxing, although it was noted that the attrition rate was higher within the EMDR condition. However yet again, when using assessment methods at follow-up which reduce demand characteristics, the benefits of EMDR dissipated over time. Also this intervention was not as effective as an intervention which predominantly used exposure methods, a factor noted in other research.

Muris, Merckelbach, Holdrinet and Sijsenaar (1998) compared EMDR, in vivo exposure, and computerised exposure in the treatment of 26 spider phobic children. The children were randomly assigned to one of the three conditions for 2.5 hours treatment in the first phase of the study and in the second phase of treatment all subjects received 1.5 hours of exposure in vivo. Assessments were carried out at all time points and included standardised measurement instruments and a behavioural avoidance test. Results indicated that exposure in vivo significantly decreased anxiety symptoms within all domains, while the EMDR group improved on only self-reported arachnophobia. The improvement rate of the exposure procedure was also found to be superior to that of EMDR. It was also further concluded that EMDR did not potentiate the efficacy of a subsequent treatment and computerised exposure did not display any significant improvement in symptomatology. Unfortunately, as all participants were eventually treated with exposure in vivo, a

long-term follow-up of EMDR efficacy was not possible.

Dissipation of effect sizes from post-treatment to follow-up are also apparent from the EMDR literature in many other outcome trials on some measures, and in particular on self-report measures and measures of depression (Deville, in submission). Studies which display a lowering of effect size over time for treated participants (participant type and domain of reduction in effect size) include Forbes, Creamer and Rycroft (1994; veteran PTSD; global distress, depression); Vaughan, Armstrong, Gold, O'Connor, Jenneke and Tarrier (1994; generic PTSD; anxiety, depression); Feske and Goldstein (1997; panic disorder; anxiety, depression, distress, social adjustment); Rothbaum (1997; rape PTSD; depression, anxiety) Carlson, Chemtob, Rusnak, Hedlund, and Muraoka (1998; veteran PTSD; anxiety, depression); Largo-Marsh and Spates (in submission; generic PTSD; anxiety).

The Role Of Distraction on Anxiety Reduction

All the above evidence tends to suggest two hypotheses, namely that when demand characteristics are reduced the beneficial effects of EMDR appear to dissipate over time, and EMDR is incommensurate in effect to approaches using ostensibly classical exposure methods. This brings us back to the question originally posed: But why should this be so?

One possibility is that eye movements may simply act as a distraction task during exposure, and it is this very exposure to feared, conditioned, stimuli which is imperative should the fear response be extinguished. Foa and Kozak (1986) proposed (and elaborated in Foa, Steketee and Rothbaum, 1989) that PTSD sufferers differ from ordinary phobic responses in that their sense of a safe world has been violated during the trauma and their responses to associated stimuli are heightened (intensity of fear structure). This change in safety leads to the inclusion of many stimuli (size of structure), and the threshold for fear activation is low (accessibility of structure). Foa and Kozak proposed that to alter this fear structure incompatible new evidence that is both cognitive and affective must be incorporated into the structure "so that a new memory can be formed" (p. 22). Once this new information has been integrated into the old experience through exposure that accesses both cognitive and affective modalities, a change in emotion attached to the event and associated stimuli can occur.

From this perspective, activating and modifying the fear structure is critical to the treatment of PTSD sufferers in exposure therapy. A task which enables avoidance of a comprehensive

affective cue set during exposure or one where comparatively elevated anxiety still exists in the absence of distraction and at the cessation of exposure, may well provide short-term lowering of subjective anxiety but lead to a return of symptoms at follow-up (see Devilly and Foa, in press). At the extreme, rather than desensitising individuals one may even be sensitising them. This is consistent with, amongst others, the study by Solomon, Shalev, Spiro, Dolev, Bleich, Waysman and Cooper (1992), as well as that by Haw and Dickerson (1998). Solomon et al., (1992) reporting upon the unsuccessful attempt to treat PTSD within a military setting, found that at 2 year follow-up subjects had predominantly not returned to pre-trauma functioning. In explanation of why the exposure had not produced treatment gains the authors stated that whilst the subjects were exposed to fear inducing cues, they were still highly anxious during these periods and hence extinction is unlikely to have occurred before termination of the exposure. Likewise, Haw and Dickerson (1998) found that EMDR reduced anxiety equally well as a focussed exposure task within sessions, but by follow-up the gains in the EMDR condition had dissipated to a greater degree than in the exposure condition. In the case of Solomon et al the participants were in fact sensitised rather than desensitised, while Haw and Dickerson suggested that distraction of this sort does not expose patients to the anxiety inherent to the feared situation in the first place.

The results of Haw and Dickerson (1998) are also commensurate with Craske, Street and Barlow (1989), in their study on patients with panic disorder and agoraphobia. These authors found that although both distracted and focussed exposure elicited similar treatment gains by post-treatment, at 6 month follow-up there was more deterioration of gains in the distraction condition. This was also found by Grayson, Foa and Steketee (1982), who investigated the role of distraction during exposure to aversive stimuli in obsessive-compulsives. It was found that while being distracted during early sessions of exposure produced lower subjective anxiety than being focussed on the aversive stimuli, heart rate displayed greater improvement for the focussed condition than after the distraction condition. This result was not entirely replicated in 1986 when these same authors found that both conditions led to a return of fear.

However, even further support for this idea can be found in Rodriguez and Craske (1995). Looking at animal specific phobias they found that distraction impeded improvements in behavioural approach tests as compared to no distraction during exposure, and suggested that this and other results support “conceptualisations of distraction as an inhibitor of exposure effects” and, moreover,

they found that the effect required high intensity exposure and suggested that “distraction is not effective unless a threshold of fear intensity is reached (Rodriguez and Craske, 1993)” (p.347).

Building upon this notion of a required threshold of fear for the effect of distraction to be established is the evidence from Andrade, Kavanagh, and Baddeley (1997). These authors found that a distraction task, such as eye movements, during exposure produced a larger effect (interfered) on subjects ratings of vividness than on emotional response. However, the authors found that an emotional reduction was more obvious when the stimuli were of a personal nature. They suggest that, therefore, EMDR’s best application may be as a form of distraction during exposure with patients who are too anxious to initially expose themselves to the feared stimuli. A process that would then, presumably, be faded out until imaginal and in vivo exposure, as advocated for the treatment of PTSD (Foa et al., 1991 and 1999), was possible and habituation to fear-provoking stimuli obtained.

Researcher Allegiance

It has become common within the social sciences to find different results between research groups, and some studies did not find a deterioration of gains following EMDR within all domains of functioning as noted above. Until now it has been a popular claim within the promotional materials of the EMDR International Association that only the effective studies trialed EMDR with acceptable levels of fidelity, while studies which failed to obtain a high degree of success failed to implement the procedure correctly (see Rosen, 1999). Putting aside the scientific standing of this argument, there is another possible explanation for this phenomena. Extended from the ‘Rosenthal effect’ as discussed below, this explanation is related to what is known as researcher allegiance.

Gaffan, Tsaousis and Kemp-Wheeler (1995) amongst others (see Luborsky, Diguier, Seligman, Rosenthal, Krause, Johnson, et al., 1999 for an investigation and discussion of the phenomenon) have demonstrated that apparent researchers’ preference for a type of treatment can account for nearly half the difference between the preferred treatment and the non-preferred treatment. In effect, Gaffan et al. note that therapists with a preference for cognitive therapy tended to obtain better results for that treatment than they did for non-preferred therapies. Whether this is a “pygmalion effect” or the result of the increased power of therapeutic deliverance is hard to conclude. Amongst other methods of accounting for some of this variance as proposed by Luborsky et al (1999) would be the use of treatment fidelity ratings by assessors who are

independent of the research team and who are neither known advocates of the particular intervention nor especially agnostic. However, for example, Shapiro (1989) used no treatment fidelity ratings and those by Wilson et al (1995, 1997) and Carlson et al (1998), both of whom reported maintenance of gains, were not obtained by researchers independent of their own research programme, hence increasing the likelihood of rating fidelity based on outcome instead of faithfulness to the actual process (Rosen, 1999). Using the researcher allegiance coding method presented by Gaffan et al (1995) all three of these research groups meet the criteria of strong allegiance to EMDR, and it is therefore possible, if not likely, that demand and the biasing effects of face-to-face interviews were likely to have been important factors on the outcome of these studies.

While a blind assessor appears to be conceptually expedient for most treatment-outcome studies, this brings its own dangers. Rosenthal and Lawson (1964) demonstrated that experimenter bias affected the rated outcome of experiments where the experimenter had a pre-conceived notion of the expected outcome. Further to this, the bias was behaviourally noticeable to human subjects whereby more highly biassed experimenters were rated by subjects as “significantly more likeable, personal, interested, slower speaking, and more given to using gestures and movements” (p. 325; Rosenthal, Fode, Friedman, and Vikan, 1960). In light of this ‘Rosenthal effect’ many treatment-outcome studies utilise experimenters who are “blind” to participants’ treatment conditions.

However, in some studies, such as where the two treatment conditions are considerably different in procedure, this “blindness” can lose the methodological advantage it was designed for. Whether solicited or not, participants invariably make comments to the rater regarding the procedure they have undergone which inherently identifies the experimental condition (e.g. “Those eye movements really helped at the time, but things are back”, “the breathing really helped, but I keep forgetting to do the relaxation when I get stressed out”). Such comments remove the blindfold from the rater and this ‘Rosenthal effect’ interacts with the rater’s bias and may influence his / her own interpretation of the participants’ responses and also directly influence the responses that are actually given. This ‘Rosenthal effect’ has also been shown to effect experimenter’s assistants even when the experimenter does not verbally communicate the nature and direction of the bias (Rosenthal, Persinger, Kline, and Mulry, 1963). In this 1963 study it was shown that, as well as experimenters biasing their subjects, the experimenter’s assistants “similarly biassed their subjects” (p. 313). Hence one can see that a blind, independent, rater is seldom blind and rarely

independent.

Summary

Packaged therapies predominantly utilising exposure techniques with high therapist expectancy and face-to-face demand characteristics are gaining popularity in the treatment of various subject populations (Rosen, Lohr, McNally and Herbert, 1999). With such a trend evident it was the intention of this article to present a brief review highlighting a growing trend in the clinical efficacy literature for EMDR treated samples to show a dissipation in treatment gains over time. This is in direct comparison to exposure based treatments for PTSD which have shown a tendency to maintain gains over time or to continue to improve the functioning of those treated (e.g. Foa et al., 1991 and 1999; Marks et al., 1998; Devilly and Spence, 1999). The explanation offered in this article for this phenomena was based predominantly on the effects of distraction on exposure and, specifically, it's interfering effects on habituation.

It was also noted that similar studies do not always derive the same long-term results with comparative populations and an explanation of why this phenomena may be occurring was presented. Overall, it was noted that participant demand effects, researcher allegiance and the biasing effects of experimenter expectation may be having effects on the results where face-to-face interviews were included as part of the follow-up.

Based upon the distraction hypothesis possibility, it is further suggested that practitioners utilising any method which employs exposure as a major component be versed in the theoretical tenets behind the procedure so as to gain maximum benefits from it's use. Shooting from the hip may be quick, but it's rarely accurate.

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