CLINICAL REPORT

Treating Spider Phobia with Eye-movement Desensitization and Reprocessing: Two Case Reports

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Abstract — Two spider phobics were first treated with Eye-Movement Desensitization and Reprocessing (EMDR) and then received an exposure in vivo session. Results showed positive effects of EMDR, but also suggest that it is especially self-report measures that are sensitive to EMDR. Improvement on a behavioral measure was less pronounced and exposure was necessary to eliminate residual avoidance behavior. This observation confirms the position of those EMDR critics who point out that EMDR effects should be documented with objective and standardized evaluation instruments.

INTRODUCTION

Fear of spiders, blood, enclosed places, and so forth frequently occur in the general population (e.g., Agras, Sylvester, & Oliveau, 1969; Regier et al., 1988). In a minority of the cases, the fear becomes excessive and the person avoids the phobic stimulus to such a degree that it interferes with his daily routine and social activities. In these cases, the diagnosis of specific phobia is made (DSM-IV; American Psychiatric Association, 1994). Prolonged confrontation with the feared stimulus, i.e., exposure in vivo, is considered as the treatment of choice for specific phobias. Öst (1989), for example, reported that a one-session exposure in vivo results in 90% of the specific phobia patients showing significant improvement. Similar results were found by

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Merckelbach, de Jong, and Arntz (1991) and Muris, de Jong, Merckelbach, and van Zuuren (1993). Recently, eye-movement desensitization (EMD) has been recommended as an alternative treatment method for specific phobias (e.g., Marquis, 1991). In EMD, patients imaginatively expose themselves to a traumatic or aversive memory, while simultaneously engaging in rhythmic, lateral eye movements that are induced by the therapist. The idea is that through the eye movements, negative memories lose their pathogenetic character and will be assimilated (e.g., Shapiro, 1989a). Originally, EMD was introduced as a treatment method for post-traumatic stress disorder (PTSD; Shapiro, 1989a, 1989b; Puk, 1991; Kleinknecht & Morgan, 1992). Yet, in more recent literature, Shapiro (1994) and other EMD therapists (Marquis, 1991) claim that EMD can be successfully applied to a wide range of psychopathological conditions, one of them being specific phobia.

The few studies that examined the success of EMD in treating specific phobias have yielded mixed results. On the one hand, there is an uncontrolled study by Marquis (1991), which relied on self-report and nonstandardized therapist ratings. This author claimed that specific phobias can be effectively treated with EMD. His conclusion was supported by Kleinknecht (1993) who described a case study of a woman with injection and blood phobias treated with EMD. In this study, both self-report and physiological measures (i.e., pulse rate and blood pressure) suggested that EMD had a positive effect.

Furthermore, although no standardized behavioral avoidance test was employed, Kleinknecht reported that the patient eventually succeeded in receiving injections and having blood drawn. On the other hand, two studies found no support for the effectiveness of EMD in treating specific phobias. In a controlled study, Sanderson and Carpenter (1992) compared the effects of EMD with those of imaginal exposure. Fifty-eight phobic subjects were asked to concentrate on the most disturbing image related to their fear; they received a short EMD or imaginal exposure intervention (each procedure was given for seven sets of 20 s) in a single session crossover design. No superior effects of EMD over imaginal exposure were found. Likewise, a controlled case study of Acierno, Tremont, Last, and Montgomery (1994) concerning a woman with multiple specific phobias (i.e., fear of dead bodies and the dark) indicated that EMD failed to produce improvement beyond a control treatment (i.e., imaginal exposure). Furthermore, it was demonstrated that only exposure in vivo resulted in clinically significant improvement.

With respect to the above-mentioned studies, at least two critical remarks are in order. First, given the fact that avoidance behavior is a key symptom of specific phobia (DSM-IV; American Psychiatric Association, 1994), studies evaluating the effects of a new treatment intervention for this condition should include behavioral measures (Hugdahl, 1981; Rachman, 1976). With the exception of the case report by Acierno, Tremont et al. (1994), none of the studies examining EMD effects on specific phobia employed such behavioral measures. Therefore, findings that indicate positive effects of EMD in the
treatment of specific phobia should be interpreted with caution (see for extensive reviews Acierno, Hersen, van Hasselt, Tremont, & Mueser, 1994; Herbert & Mueser, 1992; Lohr, Kleinknecht, Conley, Dal Cerro, Schmidt, & Sonntag, 1992). Second, some years ago Shapiro (1991) emphasized the role of cognitive restructuring during EMD interventions. As a matter of fact, the name of EMD was changed to EMDR (eye-movement desensitization and reprocessing). In short, the reprocessing component is carried out after the negative memory has been desensitized with eye movements. During reprocessing, patients rehearse a positive cognition while simultaneously thinking about the aversive memory and carrying out eye movements. From the method sections in the above-mentioned treatment studies, it can be inferred that all of them employed EMD rather than EMDR.

The present article describes the treatment of two patients with spider phobia. In both cases, patients were first treated with EMDR and then received a one-session exposure in vivo therapy. Treatment outcome was evaluated not only with self-report, but also with a behavioral measure of spider phobia.

METHOD

Subjects

Both patients were women who met the DSM-IV criteria for specific phobia (animal type). Patient 1 (24 years old) had been fearful of spiders since the age of 8. Her fear gradually increased and eventually became invalidating: she avoided gardens and wanted to have toilets, bathrooms, and cars checked for spiders. She could not walk through a door without intense fear, because a spider might fall down on her. Her answers on the Phobic Origin Questionnaire (POQ; Öst & Hugdahl, 1981) revealed that several conditioning experiences (e.g., being teased with spiders) as well as modeling (e.g., her schoolfriends were afraid of spiders) and negative information (e.g., having seen a threatening movie about spiders) played a role in the etiology of her phobia.

Patient 2 (26 years old) had feared spiders since the age of 7. She did not dare to clean up the house and totally avoided the cellar and the attic. The POQ indicated that her phobia was associated with a conditioning incident: when she was 7, she was lying in bed and discovered a large spider that crawled on the wall above her head. She was terrified by this incident, also because her sister was extremely fearful of spiders. Apparently, modeling experiences contributed to the development of her fear.

ASSESSMENT

The patients first underwent an EMDR treatment and then received an exposure in vivo therapy. At three points of time (i.e., before treatment, after EMDR treatment, and after exposure in vivo), subjects completed the Spider Phobia Questionnaire (SPQ; Klorman, Weerts, Hastings, Melamed, & Lang, 1974) and carried out a Behavioral Avoidance Test (BAT).
The SPQ is a reliable and valid 31-item true/false questionnaire that measures fear of spiders (e.g., Frederikson, 1983). SPQ scores range from 0 (not at all fearful of spiders) to 31 (extremely fearful of spiders). The BAT was used to assess actual avoidance of spiders. The BAT procedure was as follows: patients entered a room in which a table was located approximately 3 m in front of them. A closed jar containing a (medium-size) living spider was placed on the table. The patients were asked to approach the spider in a stepwise manner. There were eight steps, ranging from 1, walk towards the spider, to 8, let the spider walk on your hand. Each step was introduced by the experimenter. The experimenter remained in a corner of the room and neither encouraged nor praised the patients for approach behavior. In passing, it should be noted that the experimenter was not involved in the treatment procedures.

**Treatment**

The EMDR treatment followed the protocol that Shapiro (1994) has designed for specific phobias. According to this protocol, treatment should address the following aversive experiences: (a) the first aversive confrontation with the phobic object (i.e., spider) that can be remembered, (b) the most aversive confrontation with the phobic object, (c) the most recent aversive experience with the phobic object, and (d) a future confrontation with the phobic object. Because only 1 hr was available, only the last three experiences were subjected to the EMDR procedure. For each experience, the procedure was as follows: first, patients formulated a negative and a positive cognition related to that particular experience (e.g., "I am weaker than the spider"; "I am somebody who is able to control the spider"). Next, the patient rated the credibility of the positive cognition (i.e., Validity of Cognitions; VOC) on a 7-point Likert scale (1 = not at all credible; 7 = very credible). Then, the patient described her physical anxiety response during the experience and rated the level of disturbance on a 10-point Subjective Units of Disturbance Scale (SUDS; 1 = no disturbance at all; 10 = highest disturbance possible). Finally, the patient was asked to imagine the negative experience and to generate the accompanying negative cognition and physical anxiety response. When the patient signalled that she had succeeded in doing so, the first set of horizontal eye movements was carried out (24 saccades). Following this, the patient was instructed to blank the image and to relax. After a brief pause, the patient was asked to describe shortly her image, feelings, or thoughts. As long as the descriptions had a negative content, new sets of eye movements were initiated. When the reported image, thought, or feeling had a neutral content, the patient was instructed to reimage the negative experience and to rate the level of disturbance on a SUDS. The eye movements procedure was repeated until the patient reported a SUDS score that was (according to the patient) the lowest possible score. Then, the positive cognition was installed (the reprocessing procedure), i.e., patients reimagined the negative experience, and simultane-
ously generated the positive cognition. While doing so, eye movements were again initiated. After each set, the patient rated the credibility of the positive cognition (VOC). This procedure was repeated until (according to the patient) the highest score was reached.

The exposure in vivo was conducted following the procedure described by Öst (1989). This treatment consists of one session (of about 2.5 h) of hierarchically structured confrontation with real-life spiders in combination with modeling by the therapist.

EMDR and exposure in vivo were carried out by different therapists. The time between both interventions was half an hour.

RESULTS

As Figs. 1 and 2 show, the EMDR procedure resulted in decreased SUDS and heightened VOC scores in both patients. These results indicate that the negative experiences became less disturbing and were easier to relate to positive cognitions.

SPQ and BAT data are presented in Figs. 3 and 4. With respect to the SPQ, both patients showed a decline of self-reported spider fear after the EMDR treatment. In Patient 1, exposure in vivo resulted in a further decrease of the SPQ score. On the pretreatment BAT, Patient 1 reached Step 5, i.e., touch the spider with a pencil. After EMDR, she came one step further (Step 6), i.e., let the spider out of the glass jar. Only after the exposure, she actually touched the spider (Step 8, let the spider walk on your hand). A similar pattern of BAT results was found in patient 2. Before treatment, she was unable to complete step 1 (i.e., approach the spider on the table. After EMDR, she reached Step 4, i.e., open the jar, and only after the exposure in vivo therapy she really touched the spider (Step 7, touch the spider with your finger).

DISCUSSION

The present cases illustrate three important points. To begin with, EMDR produces a sharp decrease in SUDS and a concomitant increase in VOC scores. Previous case reports have taken such changes as evidence for the efficacy of EMDR (e.g., Marquis, 1991; Shapiro, 1989b). However, as critical authors as Acierno, Hersen et al. (1994) and Herbert and Mueser (1992) point out, there is a tautological component in this line of reasoning. That is to say, during EMDR, eye movements are induced until low SUDS and high VOC scores are attained. Second, to a certain extent, the changes in SUDS and VOC scores were accompanied by a decline on the SPQ. The SPQ is a standardized instrument, and consequently one might attribute the SPQ changes to the

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1The EMDR therapist (P.M.) was trained in the EMDR procedure by Shapiro and her associates during a Level 1 workshop given in Amsterdam, the Netherlands (October, 1994).
Fig. 1. Subjective Units of Disturbance Scale (SUDS) scores of both patients measured before and after the EMDR procedure.
FIG. 2. VALIDITY OF COGNITIONS (VOC) SCORES OF BOTH PATIENTS MEASURED BEFORE AND AFTER THE EMDR PROCEDURE.
efficacy of EMDR. A strong argument against such an interpretation is that the SPQ measures self-reported fear. The possibility that self-report measures are sensitive to demand characteristics can not be ruled out (see also Acierno, Hersen et al., 1994; Lohr et al., 1992; Herbert & Mueser, 1992). Alternatively, patients may score low on the post-EMDR SPQ precisely because they would like to bring their SPQ scores in agreement with SUDS and VOC ratings. Third, and most important, the dramatic SUDS and VOC changes were not translated into substantial BAT improvements. In other words, EMDR affected subjective indices rather than avoidance behavior. One could, of course, counter that phobic fear consists of three loosely coupled systems (i.e., subjective fear, avoidance behavior, physiological arousal) that do not always covary (Hugdahl, 1981; Hodgson & Rachman, 1974). Given this state of affairs, it is
conceivable that treatment methods affect one system (e.g., subjective fear), but not the other (e.g., avoidance behavior). In the present context, this line of reasoning is hardly convincing because avoidance behavior is a key symptom of specific phobias. Thus, when a new treatment method for specific phobias is proposed, it is reasonable to require that it eliminate phobic avoidance to a substantial degree. The cases described above suggest the possibility that EMDR does not meet this requirement. Admittedly, the present case study suffers from several shortcomings. To begin with, in both patients EMDR preceded exposure and therefore one could argue that the EMDR procedure sensitized the effects of exposure. Second, the present study failed to employ multiple baseline and phase measurements (Barlow & Hersen, 1984). Consequently, the extent to which improvements or lack thereof were due to chance cannot be
firmly established. Third, different therapists were involved in EMDR and exposure in vivo, and this might have mediated nonspecific treatment effects. Of course, only well-controlled studies with large samples can more definitely determine whether exposure in vivo is indeed superior to EMDR in treating specific phobias. However, what the present study clearly shows is that SUDS and VOC changes during EMDR are not necessarily accompanied by behavioral improvements.

Thus far, controlled experiments evaluating the effects of EMDR(R) have focused on PTSD patients (e.g., Boudewyns, Stwerka, Hyer, Albrecht, & Sperr, 1993; Fitman, Orr, Altman, Longpre, Poire, & Lasko, 1993) and negative imagery in normal subjects (Tallis & Smith, 1994; Merckelbach, Hogervorst, Kampman, & de Jongh, 1994). By and large, these studies have found little support for the alleged efficacy of EMDR. It remains to be seen whether the same holds for specific phobia. The case reports described in the current study illustrate the point made by those EMDR critics who emphasize that EMDR effects should be evaluated with objective and behavioral measures (Acierno, Hersen et al., 1994; Herbert & Mueser, 1992).

REFERENCES


