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Treating Phobic Children: Effects of EMDR Versus Exposure

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This study examined the efficacy of eye movement desensitization and reprocessing (EMDR) and exposure in the treatment of a specific phobia. Twenty-six spider phobic children were treated during 2 treatment phases. During the first phase, which lasted 2.5 hr, children were randomly assigned to either (a) an EMDR group ($n = 9$), (b) an exposure in vivo group ($n = 9$), or (c) a computerized exposure (control) group ($n = 8$). During the 2nd phase, all groups received a 1.5-hr session of exposure in vivo. Therapy outcome measures (i.e., self-reported fear and behavioral avoidance) were obtained before treatment, after Treatment Phase 1, and after Treatment Phase 2. Results showed that the 2.5-hr exposure in vivo session produced significant improvement on all outcome measures. In contrast, EMDR yielded a significant improvement on only self-reported spider fear. Computerized exposure produced nonsignificant improvement. Furthermore, no evidence was found to suggest that EMDR potentiates the efficacy of a subsequent exposure in vivo treatment. Exposure in vivo remains the treatment of choice for childhood spider phobia.

Shapiro (1989a, 1989b) has claimed that eye movement desensitization and reprocessing (EMDR) is an effective treatment for posttraumatic stress disorder (PTSD). During EMDR, the therapist induces rapid, lateral eye movements while the patient imaginally exposes him- or herself to an aversive memory. After each set of eye movements, the patient briefly reports his or her images, feelings, and/or thoughts. This procedure is repeated until the negative affect associated with the traumatic or aversive memory habituates. Furthermore, the therapist encourages cognitive restructuring. That is, the patient is prompted to change negative cognition about him- or herself or about the trauma into more functional cognition.

Case reports suggest that EMDR is successful in treating PTSD patients (e.g., Wolpe & Abrams, 1991), but there are only a few controlled studies evaluating the effects of EMDR in PTSD. Some of these studies failed to find a superior effect of EMDR (e.g., Boudewyns, Stwertka, Hyer, Albrecht, & Sperr, 1993), whereas others have reported positive findings. For example, Vaughan et al. (1994) compared EMDR, imaginal exposure, and applied relaxation. These authors found that EMDR was equally effective compared to imaginal exposure, and applied relaxation. Yet, on a standardized measure of intrusions, EMDR produced better results than the other two interventions. These and other encouraging research findings (e.g., Silver, Brooks, & Obenchain, 1995; Wilson, Becker, & Tinker, 1995) indicate that EMDR should be regarded as a serious option in the treatment of PTSD (but see Lohr, Kleinknecht, Tolin, & Barrett, 1995).

Some authors have argued that EMDR might also be effective in the treatment of specific phobias (e.g., Marquis, 1991; Shapiro, 1995). Yet, it is a well-established fact that this disorder responds extremely well to exposure in vivo therapy. Öst (e.g., 1989, 1996) has shown that even a single treatment session can be successful in about 90% of the patients. Only a few studies have compared the efficacy of EMDR to that of exposure in vivo. A case study by Acierno, Tremont, Last, and Montgomery (1994) failed to find evidence to suggest that specific phobias benefit from EMDR. In their study, only exposure in vivo was found to produce clinically significant improvement. Muris and Merckelbach (1995) described two spider phobic women who were first treated with EMDR and then received an exposure in vivo session. Results showed positive effects of EMDR on self-reported spider fear, but on a behavioral outcome measure results were less impressive. In a controlled study by Muris and Merckelbach (1997), spider phobics were treated during two treatment phases. During the first phase, patients were randomly assigned to either an EMDR group, an imaginal exposure group, or a waiting list control group. During the second phase, all groups received one exposure in vivo session. No evidence was found for EMDR being more effective than imaginal exposure or waiting list control. As a matter of fact, only exposure in vivo resulted in a significant reduction of phobic avoidance behavior.

The studies reviewed so far concerned EMDR as a treatment for anxiety disorders in adult patients. Research on treatment of specific phobias and other anxiety disorders in children has predominantly relied on single-case designs. Controlled outcome studies are sparse (e.g., Bernstein & Borchardt, 1991). One exception is Kendall (1994), who evaluated the effects of cognitive-behavioral treatment (CBT) in children suffering from overanxious disorder, separation anxiety disorder, or avoidant disorder. Results showed CBT to be superior to a waiting-list condition (see also Barrett, Dadds, & Rapee, 1996; Treadwell & Kendall, 1996). Another controlled study by Menzies and Clarke (1993) demonstrated that specific phobias in children can be effectively treated with exposure in vivo. These authors com-

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pared the effects of exposure in vivo, vicarious exposure, and waiting-list condition in a group of children with severe water phobia. Results showed that exposure in vivo produced superior effects with clinically significant improvements that generalized to other situations involving water.

There is only one controlled study evaluating the efficacy of EMDR in anxiety disordered children. In that study (Muris, Merckelbach, van Haaften, & Mayer, 1997), spider phobic children were treated with one session of EMDR and one session of exposure in vivo in a cross-over design. That is, one half of the children received EMDR prior to exposure in vivo, and the other half received treatments in the reverse order. Results showed positive effects of EMDR, but they also indicated that self-report measures are especially sensitive to EMDR. Behavioral improvement following EMDR was less pronounced and exposure was found to be superior in reducing avoidance behavior.

In sum, studies evaluating the efficacy of EMDR and exposure in vivo in the treatment of specific phobias have demonstrated no (Acierno et al., 1994; Muris & Merckelbach, 1997) or limited value of EMDR (Muris & Merckelbach, 1995; Muris et al., 1997), whereas exposure in vivo consistently produced the best effects. This is true for both adult and child samples. However, one could counter that these studies all involved within-subjects comparisons between EMDR and exposure in vivo (i.e., patients first received EMDR and then exposure in vivo or vice versa). Such a within-subjects approach is vulnerable to carry-over effects and hence might overshadow the unique contribution that EMDR makes. With this in mind, the present study relied on a between-subjects design. Spider phobic children were treated during two treatment phases. During the first phase, which lasted 2.5 hr, children were randomly assigned to either (a) an EMDR group, (b) an exposure in vivo group, or (c) a computerized exposure group. During the second phase, all groups received a 1.5-hr session of exposure in vivo. This design makes it possible (a) to compare the efficacy of EMDR, exposure in vivo, and computerized exposure, and (b) to examine whether EMDR potentiates the effects of a subsequent exposure in vivo treatment.

Method

Participants

Participants were 26 spider phobic children (all White girls of middle socioeconomic status) with a mean age of 12.58 years (SD = 2.53; range = 8–17 years). They applied for treatment after reading a newspaper article about the Spider Phobia Project for Children at the University of Maastricht. In this article, spider phobic children were invited to participate in research in return for "free" treatment. All children met the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., rev.; *DSM–III–R*, American Psychiatric Association, 1987) criteria for simple phobia. This diagnosis was made prior to treatment by a research assistant who interviewed one of the children's parents using the revised version of the Diagnostic Interview Schedule for Children (DISC–R; National Institute of Mental Health, 1992). Children with comorbid psychopathology and intellectual disabilities were excluded and referred to a Community Mental Health Center. The DISC–R diagnosis of simple phobia was checked by a senior researcher who interviewed the children and evaluated whether they fulfilled the *DSM–III–R* criteria. The diagnosis of spider phobia was confirmed in all children.

Assessment

Diagnostic Interview

The DISC–R (Version 2.3) is a highly structured lay-administered interview instrument designed to assess the more common *DSM–III–R* diagnoses found in children and adolescents. Previous research with the DISC–R has shown that the instrument possesses adequate test–retest reliability (Schwab-Stone et al., 1993), sufficient interrater reliability (Shaffer et al., 1993), and acceptable validity (Piacentini et al., 1993).

Treatment Outcome Measures

Subjective fear. The short version of the Spider Phobia Questionnaire for Children (SPQ-C; Kindt, Brosschot, & Muris, 1996) is a reliable 15-item true–false questionnaire that measures fear of spiders. SPQ-C scores range between 0 (*not at all fearful of spiders*) and 15 (*extremely fearful of spiders*). The Self Assessment Manikin (SAM; Hodes, Cook, & Lang, 1985) was used as a nonverbal self-report measure of spider fear. Using the SAM, children were asked to rate their current emotions (1 = *very positive*; 9 = *very negative*), their anxiety (1 = *not at all anxious;* 9 = *very anxious*), and their feelings of power (1 = *extremely powerful;* 9 = *not at all powerful*) when confronted with a spider. A total SAM score was computed, ranging from 3 to 27, with higher scores reflecting higher levels of spider fear.

Behavior. A Behavioral Avoidance Test (BAT) was used to assess actual avoidance of spiders. The BAT procedure was as follows: Children 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. Then, children were asked to approach the spider in a stepwise manner (i.e., in 10 steps). The experimenter demand during the BAT was low, that is, the experimenter did not encourage the children to carry out each step. BAT performance was scored on a 10-point scale, ranging from 1 (*spider at 2-m distance*) to 10 (*spider walking on the hand*). During the BAT, children were asked to complete the SAM once more, this time as a measure of state anxiety. This was done at the first step of the BAT (i.e., *spider at 2-m distance*).

Effectiveness of treatments. After each treatment phase, children were given a 3-point scale on which they indicated to what extent they thought that the treatment had been effective in reducing their fear of spiders (1 = *not at all helpful;* 2 = *somewhat helpful;* 3 = *very helpful*).

Treatment and Procedure

Children were treated individually at the University. In the first treatment phase, which lasted 2.5 hr, children were randomly assigned to either (a) the EMDR group (n = 9), (b) the exposure in vivo group (n = 9), or (c) the computerized exposure group (n = 8). During the second treatment phase of 1.5 hr, all groups received exposure in vivo. Children's level of spider fear was assessed on three occasions: before treatment, after Treatment Phase 1 (Posttreatment 1), and after Treatment Phase 2 (Posttreatment 2). The assessment procedure was always the same. That is, children first completed SPQ and SAM. Following this, the BAT was carried out. During the BAT, SAM scores were obtained for a second time. The therapists were not involved in the assessment procedure.

EMDR treatment closely followed the protocol recommended by Shapiro (1995) for specific phobias. During EMDR, the following aversive experiences were desensitized: (a) the most aversive confrontation with spiders, (b) the most recent aversive confrontation with spiders, and (c) a future confrontation with spiders. For each experience, the procedure was as follows. First children briefly described the aversive event and identified the most disturbing image of this event. Next, they formulated a negative as well as a positive cognition in relation to the aversive

experience. In order to help the children, experimenters offered a list of examples of negative and positive cognitions (see Shapiro, 1995, p. 362). Following this, children rated the credibility of the positive cognition (i.e., validity of cognition; VOC) on a 7-point Likert scale (1 = *not at all credible;* 7 = *very credible*). Then, children described their 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, children were asked to bring up the most disturbing image of the negative experience, to generate the accompanying negative cognition and the physical anxiety response. When children signaled that they had succeeded in this, the first set of horizontal eye movements was carried out (24 saccades). Following this, children were instructed to blank the image and to take a deep breath. After a brief pause, children were asked to describe their images, feelings, and/or thoughts. As long as descriptions had a negative content, new sets of eye movements were initiated. When the reported image, feeling, and/or thought had a neutral content, children were instructed to re-imagine the negative experience and to rate the level of disturbance on a SUDS. The eye movements procedure was repeated until children reported a SUDS score that was (according to the children) the lowest possible score. At this point, the positive cognition was installed, that is, children re-imagined the negative experience, and simultaneously generated the positive cognition. While doing so, eye movements were initiated again. After each set, children rated the credibility of the positive cognition (VOC). This was repeated until (according to the children) the highest possible score was reached.

Exposure in vivo was given along the lines of Öst (1989). To begin with, the rationale behind exposure was explained, children's questions about the treatment were answered, and the main dimensions of the children's fear were clarified. Children were told that they would not be forced to do things against their will. Next, the treatment started. More than 20 spiders of various types and sizes were available to match the specific fears of the children and to guarantee a hierarchical exposure procedure. Exposure exercises ranged from looking at the spider from a distance to letting the spider walk on the arm. If necessary, the therapist modeled the exercises.

The computerized exposure treatment (Whitby & Allcock, 1994) consisted of hierarchically structured confrontation with spiders that were presented on a computer screen. The program involved four types of spiders: a harmless looking cartoon spider, a spider that goes up and down a string, a black housespider, and a tarantula. The spiders could be changed with regard to size (small, medium, large, and huge) and movement (static, controlled, and free). The hierarchy started with the small, static cartoon spider, and eventually ended with a huge, free-moving tarantula. The computerized exposure should be considered as a placebo treatment because there is no evidence to suggest that this intervention is effective in reducing spider fear (Nelissen, Muris, & Merckelbach, 1995).

EMDR and exposure treatments were given by different therapists. The EMDR therapist had clinical experience in treating child psychopathology. This therapist was trained in EMDR during a Level 1 and a Level 2 workshop given by Shapiro and her associates in Amsterdam, The Netherlands (October 1994; May 1996). The exposure therapist was a behavioral scientist who had not been working with children before and who had received a 5-hr training course on the behavioral treatment of phobic disorders. She not only carried out the exposure in vivo procedure, but also supervised the computerized exposure.

Results

Pretreatment Comparisons

One-way analyses of variance (ANOVAs) showed that there were no significant differences between the three groups with respect to age: means were 13.33 (SD = 2.69), 12.33 (SD = 2.74), and 12.00 (SD = 2.20) years for the EMDR, exposure in vivo, and computerized exposure group, respectively. Furthermore, groups did not differ on pretreatment levels of spider fear, SPQ: $F(2, 23) = 1.40$, $p = .27$; SAM: $F(2, 23) < 1.00$; BAT: $F(2, 23) < 1.00$.

SUDS and VOC Scores

EMDR was followed by a steep reduction in SUDS scores. SUDS scores before and after EMDR were, respectively, 7.67 (SD = 2.06) and 2.44 (SD = 1.88) for the most aversive confrontation, $t(8) = 7.23$, $p < .001$. For the most recent confrontation, these means were 7.78 (SD = 1.72) and 2.56 (SD = 1.51), $t(8) = 7.43$, $p < .001$. For the future confrontation, these means were 7.33 (SD = 1.12) and 2.89 (SD = 1.45), $t(8) = 6.45$, $p < .001$. In agreement with this, VOC scores showed a marked increase from pre- to post-EMDR treatment: For the most aversive confrontation, mean scores were 2.11 (SD = 1.36) and 5.44 (SD = 0.73), respectively, $t(8) = -7.07$, $p < .001$. For the most recent confrontation, means were 2.11 (SD = 1.54) and 5.64 (SD = 0.78), respectively, $t(8) = -6.67$, $p < .001$. For the future confrontation, these means were 2.78 (SD = 1.48) and 5.67 (SD = 1.23), respectively, $t(8) = -5.36$, $p < .001$. Taken together, these results suggest that children in the EMDR group rated the aversive target experiences as less disturbing and achieved greater belief in the positive cognition related to these experiences.

Treatment Effects

Subjective Fear

A 3 (groups: EMDR, exposure in vivo, or computerized exposure) × 3 (occasions: pretreatment, Posttreatment 1, or Posttreatment 2) omnibus ANOVA, with the last variable being a repeated measure, performed on the SPQ and SAM data revealed significant effects of occasions, $F(2, 22) = 39.19$, $p < .001$, and $F(2, 22) = 28.34$, $p < .001$, respectively, and significant interaction effects of groups and occasions, $F(4, 42) = 3.05$, $p < .05$, and $F(4, 42) = 3.20$, $p < .05$, respectively. Paired post hoc t tests (with a Bonferroni correction: $p < .05/6$, or .0083) were carried out separately for SPQ and SAM to evaluate pretreatment versus Posttreatment 1 and Posttreatment 1 versus Posttreatment 2 within each group. As can be seen in Table 1, the exposure in vivo group exhibited significant improvement on both SPQ, $t(8) = 3.77$, $p < .005$, and SAM, $t(8) = 4.15$, $p < .005$, from pretreatment to Posttreatment 1. The EMDR group only exhibited improvement on the SAM from pretreatment to Posttreatment 1, $t(8) = 4.40$, $p < .005$. No further effects occurred in any of the three groups from Posttreatment 1 to Posttreatment 2.

Behavior

A 3 (groups) × 3 (occasions) ANOVA carried out on the BAT data revealed a significant effect of occasions, $F(2, 22) = 17.27$, $p < .001$, and a marginally significant interaction effect of groups and occasions, $F(4, 42) = 2.41$, $p = .07$. Post hoc t tests revealed that, in particular, the exposure in vivo group

Table 1
Mean Scores of the Exposure In Vivo Group (n = 9), EMDR Group (n = 9), and Computerized Exposure Group (n = 8) on Subjective and Behavioral Therapy Outcome Measures

Outcome measure	Pretreatment			Posttreatment 1			Posttreatment 2	
	M	*SD*		*M*	*SD*		*M*	*SD*
Spider Phobia Questionnaire								
Exposure in vivo group	9.33	1.41	*	4.89	3.95		4.00	3.24
EMDR group	10.33	1.50		8.78	2.91		6.22	2.73
Computerized exposure group	9.50	1.41		8.75	2.12		5.25	3.28
Self-Assessment Manikin								
Exposure in vivo group	21.22	4.35	*	11.78	5.67		10.22	5.47
EMDR group	23.33	2.50	*	18.00	4.15		13.44	4.45
Computerized exposure group	21.50	3.96		19.38	5.42		12.13	7.49
Behavioural Avoidance Test (BAT)								
Exposure in vivo group	5.44	2.56	*	8.11	1.90		8.67	1.50
EMDR group	4.89	3.02		6.11	2.89	*	7.78	2.68
Computerized exposure group	5.00	1.69		6.25	1.39		7.50	2.14
State anxiety–BAT								
Exposure in vivo group	16.00	5.10	*	10.22	5.38		9.22	4.92
EMDR group	16.56	5.39		13.67	3.91		11.22	3.93
Computerized exposure group	15.38	7.46		16.75	8.08		11.63	8.23

Note. EMDR = eye movement desensitization and reprocessing. Asterisks between columns pertain to significant within-group improvement between assessment times at $p < .05/6$ ([or .0083] i.e., Bonferroni correction).

showed significant improvement on the BAT from pretreatment to Posttreatment 1, $t(8) = -5.66$, $p < .001$. Furthermore, the EMDR group improved significantly from Posttreatment 1 to Posttreatment 2 (i.e., after an additional 1.5-hr exposure in vivo session), $t(8) = -3.54$, $p = .008$.

An ANOVA of the SAM state anxiety data obtained during the first step of the BAT revealed a significant effect of occasions, $F(2, 22) = 10.22$, $p < .001$, and an interaction effect of groups and occasions, $F(4, 42) = 2.58$, $p = .05$. Post hoc t tests revealed that only in the exposure in vivo group was a significant decline of state anxiety observed from pretreatment to Posttreatment 1, $t(8) = 4.31$, $p < .005$. No such effects occurred in the EMDR or computerized exposure groups.

Direct Comparison Between EMDR and Exposure In Vivo

A series of 2 (groups: EMDR/exposure in vivo) × 2 (occasions: pretreatment/Posttreatment 1) ANOVAs, with the last variable being a repeated measure, was carried out to compare the effects between EMDR and exposure in vivo directly. The crucial interaction effect of groups and occasions (indicating that one treatment produces better effects than the other) was significant for SPQ, $F(1, 16) = 5.07$, $p < .05$, and state anxiety during the BAT, $F(1, 16) = 5.38$, $p < .05$. Marginally significant interaction effects were found for SAM, $F(1, 16) = 2.54$, $p = .10$, and BAT, $F(1, 16) = 3.16$, $p < .10$. As can be seen in Table 1, exposure in vivo resulted in greater improvement on all outcome measures than EMDR.

Direct Comparison Between EMDR and Computerized Exposure

A series of 2 (groups: EMDR/computerized exposure) × 2 (occasions: pretreatment/Posttreatment 1) ANOVAs was carried out to compare the efficacy of EMDR with that of a control intervention (i.e., computerized exposure). The crucial interaction effect of groups and occasions (indicating that EMDR was more effective than computerized exposure) was only significant for SAM, $F(1, 15) = 5.15$, $p < .05$. Furthermore, a marginally significant interaction effect was found for state anxiety at the first BAT step, $F(1, 15) = 3.45$, $p < .10$. On both variables, EMDR produced somewhat better effects than computerized exposure (see Table 1).

Does EMDR Potentiate a Subsequent Exposure In Vivo Treatment?

To investigate whether EMDR potentiates the efficacy of a subsequent exposure in vivo session, an additional series of 3 (groups) × 2 (occasions: pretreatment/Posttreatment 2) ANOVAs was carried out. Significant time effects were found for all variables. Yet, none of these analyses revealed the critical interaction effect of groups and occasions, all $Fs(2, 23) < 1.00$. This indicates that all treatment packages (i.e., exposure in vivo followed by exposure in vivo, EMDR followed by exposure in vivo, and computerized exposure followed by exposure in vivo) were equally effective.

Effectiveness of Treatments

A chi-square test performed on the effectiveness ratings obtained after Treatment Phase 1 revealed that the three groups evaluated the treatments differently, $\chi^2(4, N = 26) = 18.15$, $p < .005$. More specifically, 7 children (77.8%) rated exposure in vivo to be highly effective, 2 children (22.2%) rated exposure to be somewhat effective, and none of the children rated exposure in vivo to be not effective. For EMDR, these figures (percentages) were 1 (11.1%), 8 (88.9%), and 0 (0.0%), respec-

tively. For computerized exposure, the results were 0 (0.0%), 6 (75.0%), and 2 (25.0%), respectively. These data indicate that children regarded exposure in vivo to be more helpful in reducing their fear of spiders than either EMDR or computerized exposure. No differences were found with respect to the effectiveness ratings obtained after Treatment Phase 2, $\chi^2(4, N = 26) = 3.99, p = .41$.

Discussion

This study compared the effects of EMDR, exposure in vivo, and computerized exposure in a between-subjects design. First, EMDR was accompanied by a sharp decrease in SUDS and a concomitant increase in VOC scores. Second, exposure in vivo was found to produce superior treatment effects. That is, the 2.5-hr exposure in vivo session resulted in improvement on both subjective and behavioral outcome measures. In contrast, EMDR only produced improvement on a self-report index of spider fear, whereas computerized exposure produced nonsignificant improvement. Third, no evidence was found for the suggestion that EMDR potentiates the efficacy of a subsequent exposure in vivo treatment.

The significant changes in SUDS and VOC scores underline the integrity of the present EMDR treatment. Note that in previous research, changes in SUDS and VOC scores have been interpreted as evidence for the therapeutic value of EMDR (e.g., Shapiro, 1989a). However, several authors (e.g., Acierno, Hersen, van Hasselt, Tremont, & Mueser, 1994) have pointed out that there is a tautological component in this interpretation: During EMDR, eye movements are induced until low SUDS and high VOC scores are attained. Herbert and Mueser (1992) and Lohr et al. (1992) have rightly remarked that subjective indices like SUDS and VOC might be easily affected by demand characteristics.

The present findings are well in line with the results of previous studies in that EMDR was found to be of limited value in the treatment of specific phobias. Like these previous studies, the current results demonstrate that EMDR might change self-reports of phobic fear, but it is unable to reduce the key symptom of specific phobias, namely avoidance behavior. The question arises of why EMDR appears to be more effective in PTSD (e.g., Shapiro, 1996) than in specific phobias. Part of the answer might be that in PTSD, intrusive memories of a past trauma play a pivotal role. By definition, most PTSD symptoms are linked to a traumatic experience in the past (e.g., Foa, Riggs, & Gershuny, 1995). To the extent that EMDR encourages the restructuring of traumatic memories, it may have a beneficial effect in the treatment of PTSD. In contrast, specific phobias are dominated by avoidance behavior rather than aversive memories. Although it is true that aversive memories about the phobic stimulus accompany specific phobias (see Muris et al., 1997) and can be desensitized with EMDR, the core symptom of avoidance behavior is not an explicit target of EMDR. This may explain the suboptimal effects of EMDR in the treatment of specific phobias.

Two shortcomings of the present study deserve comment. First, a greater number of participants would have increased the power of the statistical analyses, and this may influence the possibility of detecting significant changes in the EMDR group. It remains to be seen whether inclusion of more children would alter the main conclusion of the current study, namely that EMDR treatment effects in specific phobias are suboptimal. The crucial point is that this disorder responds extremely well to exposure in vivo. A second limitation was that different therapists were involved in EMDR and exposure. One could argue that this might have mediated nonspecific treatment effects. However, it should be noted that the exposure was given by the least experienced therapist, while EMDR was carried out by a senior therapist. If anything, this situation would have favored the EMDR treatment.

This current study confirms that exposure in vivo is the treatment of choice for specific childhood phobias (see also Menzies & Clarke, 1993), and in more general terms provides further evidence for the efficacy of behavioral procedures with anxiety disordered children (see also Barrett et al., 1996; Kendall, 1994; Treadwell & Kendall, 1996).

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