With the Compliments of Springer Publishing Company, LLC

JOURNAL OF
EMDR
PRACTICE
AND RESEARCH

ARTICLES

EMDR and Cognitive Behavioral Therapy in the Treatment of Panic Disorder: A Comparison

Elisa Faretta

Psychologist, Psychotherapist, Manager of the P.I.I.E.C. Centre, Consultant Supervisor, EMDR Italy

A pilot comparison was made between two treatments for panic disorder, eye movement desensitization and reprocessing (EMDR) and cognitive behavioral therapy (CBT). Treatment was provided in the private practice settings of 7 credentialed therapists, whose treatment fidelity was monitored throughout the study. Five outcome measures were administered at pretreatment, posttreatment, and 1-year follow-up. There was significant improvement for participants in both groups ($N = 19$) after 12 sessions of treatment. No significant differences in outcome were seen between the 2 therapies, except for lower frequency of panic attacks reported by those in the EMDR group. The current study reanalyzed the data previously reported in Faretta (2012). Further research in this area is suggested.

Keywords: EMDR; cognitive behavioral therapy (CBT); panic disorder; psychotherapy

Panic disorder (PD; *Diagnostic and Statistical Manual of Mental Disorder*, Fourth Edition, Text Revision [*DSM-IV-TR*]; American Psychiatric Association [APA], 2000) is based on recurring severe anxiety states followed by concerns about their possible reappearance ("anticipatory anxiety"). Panic attacks generally occur after a highly stressful period of life, often linked to disease in oneself or death or disease in one's family, and separations or other difficulties in interpersonal relationships (Gordeev, 2008; Markowitz, Weissman, Ouellette, Lish, & Klerman, 1989). PD can be with or without agoraphobia (PDA), the fear of being in places or situations that are difficult to escape or embarrassing. The agoraphobic person avoids many situations and thereby limits his or her social and working life.

Treatment of Panic Disorder

Traditionally, treatments for PD, with or without agoraphobia, have consisted of pharmacological and cognitive behavioral therapy (CBT) approaches, both of which are considered effective (Sturpe & Weissman, 2002). According to the 2007 National Institute of Health and Clinical Excellence (NICE) guidelines, the most effective treatment for PD was CBT, with significant reduction of symptoms at posttreatment and maintenance of success at 6 months follow-up (Galassi, Quercioli, Charismas, Niccolai, & Barciulli, 2007). Moreover, symptoms were reported to totally remit in 75% of cases following 12 sessions of treatment, with greater effectiveness of CBT relative to long-term pharmacological treatment using the anxiolytic Alprazolam (Kahn, van Praag, Wetzler, Asnis, & Barr, 1988; Ost, Thulin, & Ramnerö, 2004).

Some studies (Gould, Otto, & Pollack, 1995; Otto & Whittal, 1995) showed that relatively "short" CBT treatment (12 sessions) may reduce symptoms totally in 75% of cases, and that the results obtained are better for patients using CBT than those undergoing long-term drug treatment. Results obtained from a study of 76 patients with PD, with or without agoraphobia, found that a combination of cognitive techniques (psychoeducation, cognitive restructuring, and problem solving) and behavioral methods (interoceptive and in vivo exposure) was effective in the remission of acute symptoms and maintenance of success up to 6 months following treatment (Galassi et al., 2007). However, Leeds (2012) in his review of weaknesses and limitations of the CBT approach to PDA provides

evidence that some medications may be associated with *poorer* outcomes when combined with CBT.

Research on treating PD is in some disarray. A recent meta-analysis (Sánchez-Meca, Rosa-Alcázar, Marín-Martínez, & Gómez-Conesa, 2010) found the most consistent evidence for treating PD included combining exposure, relaxation training, and breathing retraining. Craske and colleagues (2002) found that in vivo exposure reduced panic attacks. Similarly, Clark and colleagues (1999) reported that breath control treatment reduces panic attacks, while a more recent study (Deacon et al., 2012) found that the addition of cognitive reappraisal (CR) and diaphragmatic breathing (DB) did not enhance the benefits of interoceptive exposure (IE), and a review by Meuret, Wilhelm, Ritz, and Roth (2003) argued that studies of breathing retraining failed to provide a clear judgment of whether such techniques are beneficial. The long-term maintenance of treatment effects with CBT is still in doubt (Barlow, Gorman, Shear, & Woods, 2000; Svanborg, Wistedt, & Svanborg, 2008).

The CBT Conceptualization of Panic

According to the CBT model, panic attacks develop from a misinterpretation of bodily symptoms and related catastrophizing (Hofmann et al., 2007; Rovetto, 2003). In this model, the key feature to understanding panic disorder is the attribution of terrible consequences following bodily sensations, not the sensations themselves. Dizziness and tachycardia may be interpreted, for example, as an imminent myocardial infarction; theoretically, these thoughts increase the perception of bodily discomfort, confirming the impression of impending danger, and thus generating catastrophic interpretations ("I'm dying") and increased anxiety in a spiral of events. In particular, this "vicious cycle" model proposes that the panic attack is the result of a series of events in circular succession (Barlow, 1988; Clark et al., 1999). Importantly, the model proposes that altering this cognitive bias is critical for symptom reduction. Other factors are also important in the prediction of panic symptom reduction (e.g., thoughts regarding the likelihood of having a future panic attack; Cho, Smits, Powers, & Telch, 2007).

The CBT of panic attacks uses strategies aimed at overcoming symptoms through a process of deconditioning (relaxation, in vivo exposure) and promoting a more adaptive and cognitively adequate approach ("cognitive restructuring"). CBT interventions typically have included (a) education about the nature and physiology of anxiety and panic, (b) cognitive techniques in order to modify the tendency to catastrophically interpret bodily sensations, (c) exposure to bodily sensations, and (d) coping skills for the management of physical symptoms. CBT may be introduced at any stage of treatment: from primary prevention to use with individuals refractory to other types of treatment.

EMDR Research on Panic Disorder

It seems reasonable that eye movement desensitization and reprocessing (EMDR), as an evidence-based therapy for trauma treatment (Bisson, Brayne, Ochberg, & Everly, 2007), might also have effects on panic attacks (decreasing frequency, fear of future attacks, and related bodily sensations), which are often perceived as traumatic experiences (Faretta, 2012). The therapeutic possibilities for treating PD with EMDR were first raised by Goldstein and Feske (1994) who studied seven patients with PD. Standard EMDR was applied to targets such as the first and worst episodes of panic attacks, life events related to panic, and anticipated panic attacks. The results showed a significant decrease in the frequency of panic attacks, fear of having attacks (anticipatory anxiety), bodily sensations, and the extent of reported disease after only five sessions of EMDR relative to the control (waiting list) group (see also Goldstein, de-Beurs, Chambless, & Wilson, 2000).

This early report was followed by two controlled-comparison studies. Feske and Goldstein (1997) compared effects of five sessions of EMDR and a similar procedure using eye fixation exposure and reprocessing (EFER) rather than bilateral eye movement. At posttest, eight EMDR participants achieved medium to high end-state functioning compared to only one EFER participant and no wait-list participants. However, at 3-month follow-up, both treatments showed statistically equivalent effects. Goldstein and colleagues (2000) found less benefit for PD patients using EMDR as compared with a procedure termed "association and relaxation therapy." The limited findings of both of these studies have been questioned in terms of their research design and fidelity to EMDR treatment principles (see discussions in Fernandez & Faretta, 2007; Leeds, 2012). Fernandez and Faretta (2007) and Leeds (2012) have criticized this study, opining that the researchers failed to offer sufficient sessions for preparation and development of rapport, did not identify and reprocess memories of adverse childhood experiences or traumas, did not reprocess current cues and triggers such as unpleasant physical sensations associated with panic attacks and did not prepare participants for future situations.

To achieve stable treatment effects, these authors also suggested that research designs must take into account

the duration of therapy required by individual patients. In short, as recommended by Faretta and Fernandez (2003, 2006), further well-designed, controlled research is needed on the relative effectiveness of EMDR, CBT, and pharmacological interventions in treating PD.

EMDR Conceptualization of Panic as a Traumatic Event and Vulnerability to PD

A panic attack could be a traumatic experience in itself, as a person may feel so terrified by "unrestrained and uncontrollable fear" that he believes he is going to die (Faretta, 2001). Crucially in the EMDR approach, the Adaptive Information Processing (AIP) model proposes that maladaptively encoded early childhood experiences form the basis for impaired resiliency and misperceptions of later occurring stressful experiences (Shapiro, 2001). Therefore, the AIP model predicts that EMDR could be useful as a treatment for PD to (a) resolve earlier adverse and traumatic experiences that function as precipitating and predisposing factors that contribute to the emergence of symptoms during later periods of stress, (b) resolve the memory of panic attacks (the first, the worst, and the last), (c) resolve current triggers related to panic in the present, and (d) prepare for future experiences.

The EMDR approach allows a therapist to act both in the reconstruction of the elements that may have forged the beginning of the typical symptoms of panic attacks, and to directly intervene at a neurophysiological level to facilitate the reworking of the elements stored dysfunctionally in memory and recurrently expressed in panic attacks. Goldstein (1995) observed that patients with PD or PDA have often disconnected or disassociated formative experiences from the current affective component of the maladaptive memory network. When the network is triggered, patients can go into a state similar to a panic attack that lasts for hours. Sometimes these formative experiences can be found in early childhood memories. Accordingly, in the EMDR approach, it is important that a specific protocol for PD be used that facilitates the identification and elaboration of distressing experiences related to an individual patient's history and experiences that may have contributed to the development of the disorder and that can be resolved in the therapeutic context.

Both Faretta and Fernandez (2006) and Leeds (2009, 2012) have described specific kinds of childhood experiences that may contribute to PDA. In one case, traumatic events in a panic patient's history included having been sent to live with grandparents, being trapped in an elevator on the same day a brother was born, and an attempted robbery at age

9 years (Faretta & Fernandez, 2006). Leeds (2009) suggested that maladaptive formative experiences in early childhood—including parental separations, strict parenting, superficial parenting without "mindsight," parental illness, or neglect, among other experiences—may contribute to the emergence of PD or PDA and may need to be addressed as targets for EMDR reprocessing. Additional factors that can be related to anxiety states and panic include medical or lifestyle factors, sleep deprivation, and even excess consumption of caffeine (Leeds, 2012).

The Present Study

The present study was aimed at determining the relative effectiveness of EMDR using our specific protocol (described next) versus CBT in treating PD with or without agoraphobia. Treatment benefits were evaluated in terms of (a) temporal effectiveness (especially first improvements observed during treatment sessions), and especially (b) stability of change (absence of panic attacks and other symptoms after the end of the therapy and over time), as well as (c) stability of quality (strengthening of the skills obtained in order to prevent relapse). It was hypothesized that our EMDR protocol would enhance treatment effects for PD on multiple dimensions by comparison with a standardized CBT protocol.

Method

Participants

The original sample was made up of 20 participants of mixed gender (12 women and 8 men) and age (between 20 and 50 years). Ten subjects were treated with EMDR and the other 10 with CBT (with one dropout among the CBT subjects). The assignment to treatment condition was not random. The choice came from the training of therapists to whom patients spontaneously turned. Since this study was initiated as a pilot research and the choice to join the protocol was up to the individual therapist informed, it was possible to combine a small number of patients. Each participant was asked to sign an informed consent. With the exception of the dropout (owing to a work transfer), all patients completed the treatment. Demographic information for treatment completers is shown in Table 1.

Participants were selected who met the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition (*DSM-IV*) criteria for PD with or without agoraphobia and were excluded if they presented with comorbidity of other serious psychological disorders or serious somatic diseases. Specifically, inclusion/exclusion

TABLE 1. Demographic Information for Treatment Completers (*N* = 19)

Measure	Number	EMDR	CBT	TOTAL
Age	*M* (*SD*)	35.3 (8.78)	34.1 (5.99)	34.7 (7.34)
Gender	Male/Female	4/6	3/6	7/12
School	Primary school		1	1
	Junior high school	1	3	4
	Senior high school	4	3	7
	University	5	1	6
Marital status	Single	5		5
	Married	2	1	3
	Common-law wife/husband	3	4	7
	Separated/divorced		3	3
	Widow		1	1
Job	Unemployed	1	2	3
	Students	3	1	4
	Employed	2	6	8
	Freelance professional	4		
Agoraphobia	With	2	5	7
	Without	8	4	12

criteria were (a) a principal *DSM-IV* diagnosis of PD with or without agoraphobia; (b) age between 18 and 65 years; (c) no substance abuse or dependence within the last 6 months; (d) absence of active suicide potential within the last 6 months; (e) absence of any history of psychosis, bipolar I disorder, bipolar II disorder, or cyclothymia; (f) no current application pending or existing for a medical disability claim; (g) no significant cognitive impairment; (h) freedom from current uncontrolled general medical illness requiring intervention; and (i) absence of concurrent psychotherapeutic treatment for anxiety and panic.

At baseline, some of the participants (two in the EMDR group and four in the CBT group) were undergoing treatment with medication. Originally, the design called for a comparison between two groups in psychological treatment and a third group in drug treatment. Subsequently, it was decided to include those patients who were taking medications in the psychological treatment groups. Throughout the prolonged treatment with CBT or EMDR, all patients were monitored by a psychiatrist who took steps to reduce their medication intake. In EMDR group, one person stopped taking medication after 6 sessions and the other after 8 sessions; in CBT group, one patient stopped taking medication after 8 sessions, two after 10 sessions, and one after 13 sessions. By the end of

the study, all of the participants in both the EMDR and CBT groups had discontinued taking medication.

Measures

Assessments were administered by respective therapists under the supervision of the therapist responsible for the statistical analysis. A group of tests were selected in order to evaluate the process of PD with or without agoraphobia for the two treatments. For this report, the following were included:

- *State-Trait Anxiety Inventory (STAI-Y1; Spielberger, 1989)*: A paper and pencil instrument for the assessment of both trait and state anxiety; Form Y, its most popular version, has 20 items for assessing trait anxiety and 20 items for state anxiety. State anxiety items include "I am tensed; I am worried" and "I feel calm; I feel secure." Trait anxiety items include "I worry too much over something that really doesn't matter" and "I am content; I am a steady person." All items are rated on a 4-point scale (e.g., from *Almost Never* to *Almost Always*). Higher scores indicate greater anxiety.

  Internal consistency coefficients for the scale have ranged from .86 to .95; test–retest reliability coefficients have ranged from .65 to .75 over a 2-month interval (Spielberger, Gorsuch, Lushene, Vaag, & Jacobs, 1983). Test–retest coefficients for

this measure in this study ranged from .69 to .89. Considerable evidence attests to the construct and concurrent validity of the scale (Spielberger, 1989). In this study, we decided to measure only state anxiety because our interest was to track the level of anxiety felt by the patient at the time of panic attacks, at the beginning, during, and after therapy.

- *Panic-Associated Symptom Scale (PASS; Argyle et al., 1991)*: A 9-item, clinician-administered instrument that was designed to measure the severity of certain symptoms of PDA. This scale requires that the patient first receive psychoeducation about PDA and then complete a diary (to record daily details regarding their panic attack frequency) for a 1-week period. Then this instrument monitors the number of panic attacks both situational and unexpected, the duration and intensity of each attack, and the percentage of time spent with anticipatory anxiety. The PASS includes five rating scales: the first three scales (situational, unexpected, and limited symptom attacks) are rated on a 4-point scale, with regard to intensity and frequency of panic attacks. The other two scales (anticipatory anxiety related to panic and level of distress) measure the intensity and duration of these feelings. This scale has been evaluated at pretreatment, after 12 sessions of psychotherapy (12 weeks about), at posttreatment (24 weeks), and during the follow-up (after 3 months and 1 year).
- *Marks-Sheehan Phobia Scale (MSPS; Sheehan, 1983)*: Derived from the Fear Questionnaire (Marks & Matthews, 1979), the MSPS is oriented to clinical psychopharmacology research. The MSPS shows four phobias that are more disturbing for the patient, those for which he requires treatment; then it explores, through 13 items, different aspects of phobias, including agoraphobia symptoms (e.g., wide open spaces), fear of losing control and, finally, it provides an overall rating of phobic symptoms. The main feature of the scale is to investigate, for each item, the degree both of fear and avoidance through scales with "anchor point," the first to 11 points (0–10) and the second 5-point (0–4). The overall rating is expressed on an 11-point visual analogue scale. It is a commonly used scale in clinical psychopharmacological research on patients with phobias and panic disorder or agoraphobia.
- *Symptom Checklist-90-Revised (SCL-90-R; Derogatis, Lipman, & Covi, 1973)*: A 90-item paper and pencil assessment of the presence and severity of symptoms of psychological distress during the last week in different areas. Participants are required to respond to the 90 items in the *SCL-90-R* using a 5-point rating scale. Approximately 12–15 min is necessary for completion.

The *SCL-90-R* is an established instrument and has more than 1,000 independent studies supporting its reliability and validity. The internal consistency coefficient rating ranged from .90 for Depression and .77 for Psychoticism. Test–retest reliability has been reported at .80–.90 with a time interval of 1 week. All nine primary subscales are well correlated with the Minnesota Multiphasic Personality Inventory.

Procedures

The research was conducted over the period 2008–2012. The recruitment of participants (therapists and patients) was carried out with the help of some colleagues who were willing to provide their expertise to the creation of a first small sample for the pilot research.

It was organized in accordance with the prior professional training and experience (CBT or EMDR) of the therapists who were committed to following international guidelines of the respective treatments. There were four stages:

1. *Preliminary stage*: first diagnostic evaluation according to *DSM-IV* criteria, informed consent, baseline assessment conducted by the treating therapist.
2. *Treatment stage*: EMDR or CBT.
3. *Evaluation stage*: readministration of the assessments by the treating therapist at Weeks 12 and 24, and at 3-month and 12-month follow-up (in the therapist's office when possible or by phone or mail).
4. *Restitution stage*: discussion of all assessment results with participants at the end of treatment and after follow-up assessment.

Treatments

Assignment to EMDR treatment or CBT was not random because patients chose their respective therapists. Patients spontaneously selected therapists by using Internet searches (Google search or EMDR Italy Association Website or the Associazione Italiana di Analisi e Modificazione del Comportamento e Terapia Comportamentale e Cognitiva [AIAMC] Website) for professionals who could help them to solve their problem. Among the seven therapists involved, three used CBT and the other four used EMDR. All therapists were also available to patients during the week between therapy sessions if patients spontaneously turned to them to overcome their distress. In the EMDR group, only one patient requested therapist support on one occasion; in the CBT group, only one patient requested therapist support a total of three times. Each therapist in both treatment conditions had several years of experience. All therapists were overseen by an experienced supervisor (a CBT

or an EMDR supervisor) who was responsible for monitoring fidelity of treatment and in helping treating therapists to manage questions and issues that emerged during the assessment and treatment of the patients. Supervision meetings were regularly scheduled for discussion of developments in treatment.

EMDR Treatment. Patients requesting EMDR treatment from participating therapists were first screened to determine if they fulfilled inclusion and exclusion criteria. Those meeting these criteria completed informed consent to participate in this study. Then they were administered the baseline assessment tools by the treating therapist. EMDR therapy followed the 8-phase model described by Shapiro (1999, 2001; Leeds, 2009) with the following additions. During Phase 2 (psychoeducation), education on panic was included; and during Phase 3 (reprocessing of targets), past events included background stressors to first panic attack(s) if any were identified, first panic attack, worst panic attack, most recent panic attack, contributory childhood experiences of perceived abandonment, humiliation, fear, and early parent–child reversals. Current stimuli focused on external and internal cues associated with panic attacks, and future templates (for external and internal cues) in which patients rehearsed confronting these cues in the future. The complete protocol is available from the author.

Common predisposing factors (contributory experiences) in these patients included a history of separation from the family, prolonged illness of a parent, abuse by a relative, assault, surgery, or abandonment. The onset of PD appeared to be brought on by the appearance of triggers that would reactivate the past traumatic experiences, including separation, bereavement, illness, failure, and/or a period of prolonged stress. Situations where the patient believed he or she was going to die (e.g., by suffocation) were selected as targets for reprocessing. Each patient was asked to report their most common negative self-appraisal (negative cognition) associated with panic attacks. For each negative cognition, corresponding adverse or traumatic earlier life experiences were identified as targets to be reprocessed. For example, for targets related to illness or bereavement, a typical negative cognition was "I am going to die"; for separation, abuse and family arguments, "I have no control"; for experiences of threat or danger, "I am at the mercy of"; and for relatives with mental health problems, "I am going to go crazy."

EMDR patients were encouraged to keep a written log of their self-observations between treatment sessions, but other than completing the PASS, they were not required to complete EMDR specific homework.

CBT Treatment. Patients requesting CBT treatment from participating therapists were first screened to determine if they fulfilled inclusion and exclusion criteria. Those meeting these criteria completed informed consent to participate in this study. Then they were administered the baseline assessment tools by the treating therapist. For CBT patients, the specific guidelines for panic disorder (NICE) were followed. The protocol is made up of the following:

Diagnostic and assessment phase:

- Client history
- Analysis of client's panic history and of all feared and avoided situations
- Antecedent-behavior-consequence (ABC) functional analysis
- Preparation of an intervention hypothesis: therapeutic plan and definition of objectives, assessment tools

Psychoeducation phase:

- Psychoeducation on PD with reference to the physiological, behavioral, emotional, cognitive, and anticipatory anxiety-related issues
- Analysis of the dysfunctional cognitive components linked to panic situations
- Cognitive restructuring

Relaxation training and breathing techniques phase:

- Panic-related symptoms management training
- Hyperventilation management
- Breathing and relaxation techniques training (Jacobson methods; autogenic training)

Imaginal exposure phase:

- Use of imaginal exposure techniques for the actual feared situations
- Systematic desensitization (from the least to the most feared situation)
- Generalization to other feared situations
- Anticipatory anxiety management

Generalization phase:

- Evaluation of results phase and reinforcement of the subject's skills to meet different situations

Homework:

- Participants were asked to complete weekly homework in addition to completing the PASS, by keeping a diary of physical activity (PA) and thoughts, use of breathing retraining, and relaxation exercises. Homework was given on an individualized basis by therapist according to the condition of the patient and the progression of the therapy and symptoms present. The amount of time devoted to and the nature of the homework completed was not documented.

Results

This study reanalyzed the data previously reported in Faretta (2012) that have several limiting factors including a small, nonrandomized sample, unequal distribution of agoraphobia (56% in CBT group vs. 20% in EMDR group), and a wide range of ages (adolescent–adult). It is recognized that the use of multiple measures with such a small sample increases the error rate in analyses, prompting a need for conservative analysis (Wilson VanVoorhis & Morgan, 2007). As noted in the "Discussion" section in the following texts, given the limited findings from two prior controlled comparison studies of EMDR treatment of PDA (Feske & Goldstein, 1997; Goldstein et al., 2000), the results from this pilot study were still considered of sufficient interest as to merit further analysis. Results of this study were mainly in terms of performance of each of the groups, EMDR and CBT, on each of four assessment instruments. All related ANOVAs were conducted at the .05 level of significance. Comparisons between the groups in each treatment phase are reported with repeated measures analyses. Because it was never an assumable sphericity according to Mauchly's test, it has been used the Greenhouse-Geisser's correction.

Diagnosis

Before treatment, all participants met *DSM-IV* criteria for the diagnosis of PD. All participants were also assessed for *DSM-IV* PD criteria at the end of treatment (but not at follow-up). At the end of treatment, no subject in the EMDR group met criteria for PD and only one subject in the CBT group. At intake, two patients in the EMDR group met criteria for agoraphobia and as did five patients in the CBT group. After treatment, no patient in the EMDR group or the CBT group met criteria for agoraphobia, although some symptoms of agoraphobia were still reported in the CBT group after treatment (see Table 1).

Panic-Associated Symptom Scale

The PASS measured reported frequency and intensity of panic attacks over the last week (see Figure 1). For intensity of attack, the EMDR group showed improvement from pretreatment $M = 1.40$ (0.56) to posttreatment $M = 0.03$ (0.10) continuing at the 1-year follow-up $M = 0.00$ (0.00). The CBT group showed improvement in intensity from pretreatment $M = 1.26$ (0.81) to posttreatment $M = 0.48$ (0.58) also continuing at follow-up $M = 0.41$ (0.43). The repeated measures ANOVA showed a main effect for time, indicating that both treatments produced significant changes over the time period ($F[1.43, 24.35] = 53.486$, $p < .001$, $\eta_p^2 = .759$), but no effect for treatment, and no significant Time $\times$ Treatment interaction, indicating that both treatments produced similar patterns and size of change (see Figure 1).

For frequency of attacks, the EMDR group showed a decrease in the number of panic attacks from pretreatment $M = 1.47$ (0.59) to posttreatment $M = 0.10$
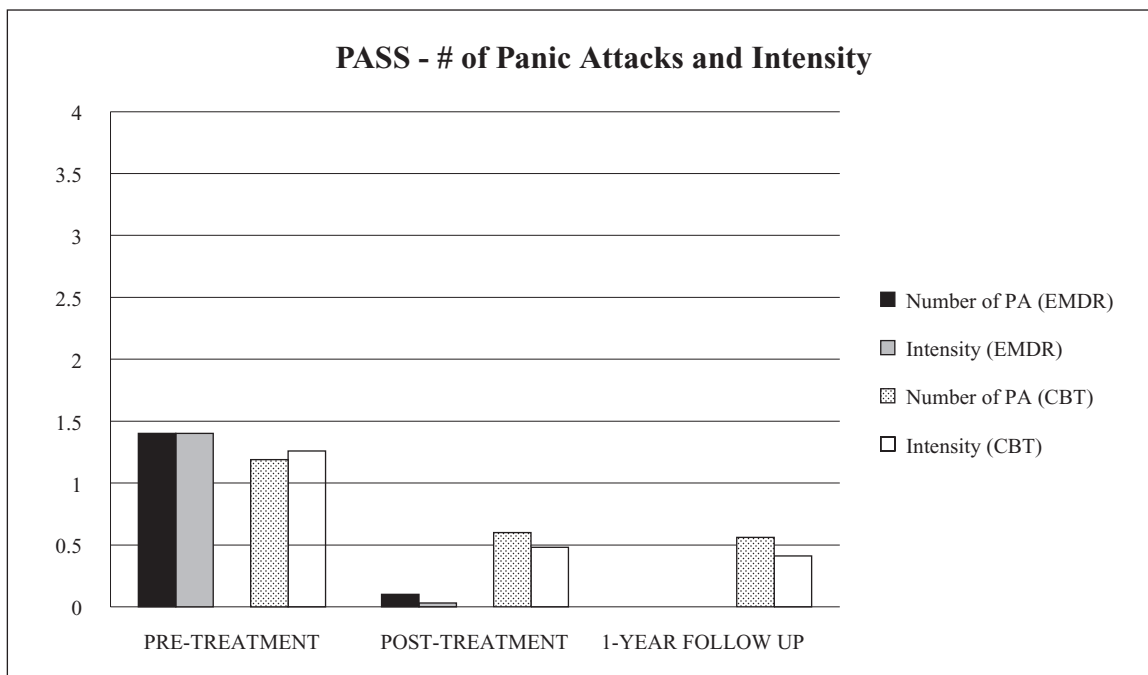
FIGURE 1. Mean scores of the EMDR and CBT groups on the PASS.

STAI Y1 - STATE ANXIETY
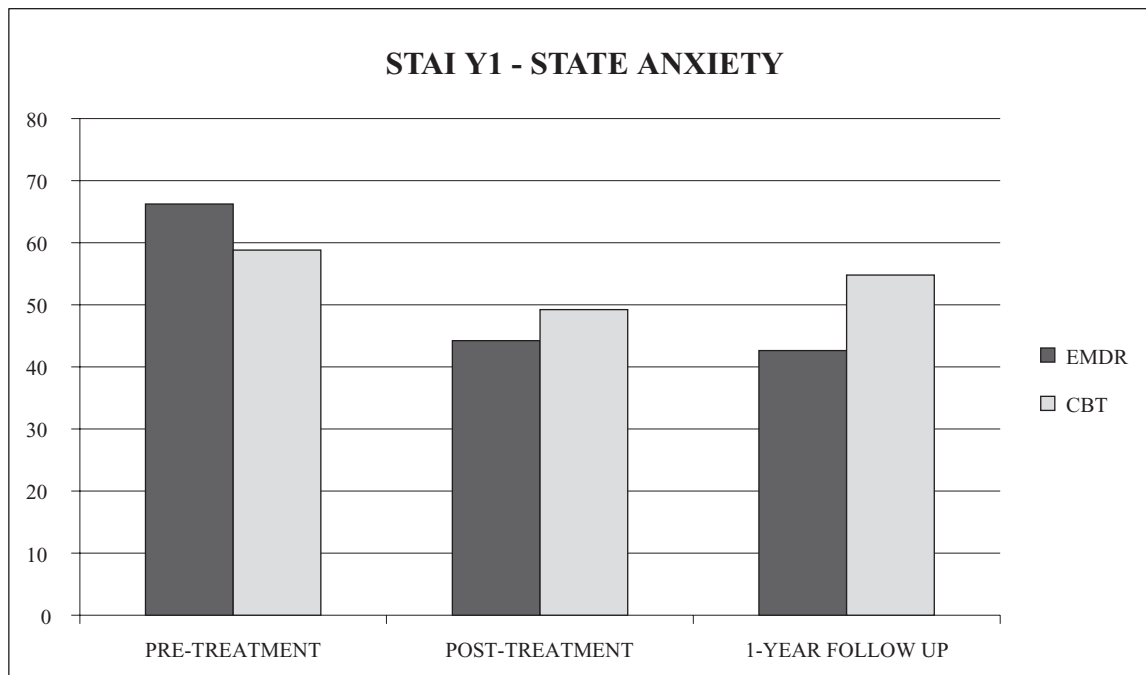
FIGURE 2. Comparisons between EMDR and CBT group means on the STAI-Y1.

(0.22), maintained at the 1-year follow-up $M = 0.00$ (0.00); similarly, the CBT group showed a decrease in numbers of attacks from pretreatment $M = 1.19$ (0.72) to posttreatment $M = 0.59$ (0.49) also maintained at follow-up $M = 0.56$ (0.47). A repeated measure ANOVA showed significant Time $\times$ Treatment interaction for PASS (frequency of panic attack), $F(1.217, 20.695) = 7.119$, $p = .011$, $\eta_p^2 = .295$), which indicated that EMDR group differed in how the frequency of panic attacks changed over time (T0, T1, T2). A one-way ANOVA on the overall means obtained in each treatment phase yielded nonsignificance for the comparison between the two groups at pretreatment $(F[1, 18] = 0.96, p = .34)$, significance at posttreatment $(F[1, 18] = 9.27, p = .01)$, and significance at 1-year follow-up $(F[1, 18] = 22.95, p < .001)$. Results indicate that participants in the EMDR group reported significantly fewer panic attacks following treatment.

STAI-Y1

On the STAI-Y1, a decrease of anxiety symptoms is evident for both groups, from pretreatment, EMDR $M = 66.20$ (15.27), CBT $M = 58.78$ (16.99); to posttreatment, EMDR $M = 44.20$ (3.85), CBT $M = 49.22$ (10.97); to follow-up, EMDR $M = 42.60$ (11.77), CBT $M = 54.78$ (7.67). The repeated measures ANOVA showed a significant main effect for time $(F[1.31, 22.33] = 11.413$, $p = .001$, $\eta_p^2 = .402)$, but no effect for treatment, and no significant Time $\times$ Treatment interaction,

indicating that both treatments produced similar patterns and size of change (see Figure 2).

### Marks-Sheehan Phobia Scale

Reductions on the Phobia Scale, as shown in Figure 3, for every kind of phobia assessed, are visually apparent in both groups. The repeated measures ANOVA showed a significant main effect for time $(F[1.23, 20.87] = 30.534$, $p < .001$, $\eta_p^2 = .642)$, but no effect for treatment, and no significant Time $\times$ Treatment interaction, indicating that both treatments produced similar patterns and size of change.

Symptom Checklist-90-Revised

This pattern of results was paralleled in the SCL-90-R, as shown in Figures 4, 5, and 6. Reductions on the Global Severity Index (GSI) and on the subscales for anticipatory anxiety and phobia anxiety are visually apparent. The repeated measures ANOVA showed a significant main effect for time $(F[1.09; 18.28] = 43.414$, $p < .001$, $\eta_p^2 = .719)$, but no effect for treatment, and no significant Time $\times$ Treatment interaction, indicating that both treatments produced similar patterns and size of change.

Discussion

In this pilot study, as few as 12 sessions of treatment with either EMDR or CBT were effective in the treatment of panic disorder with and without agoraphobia.
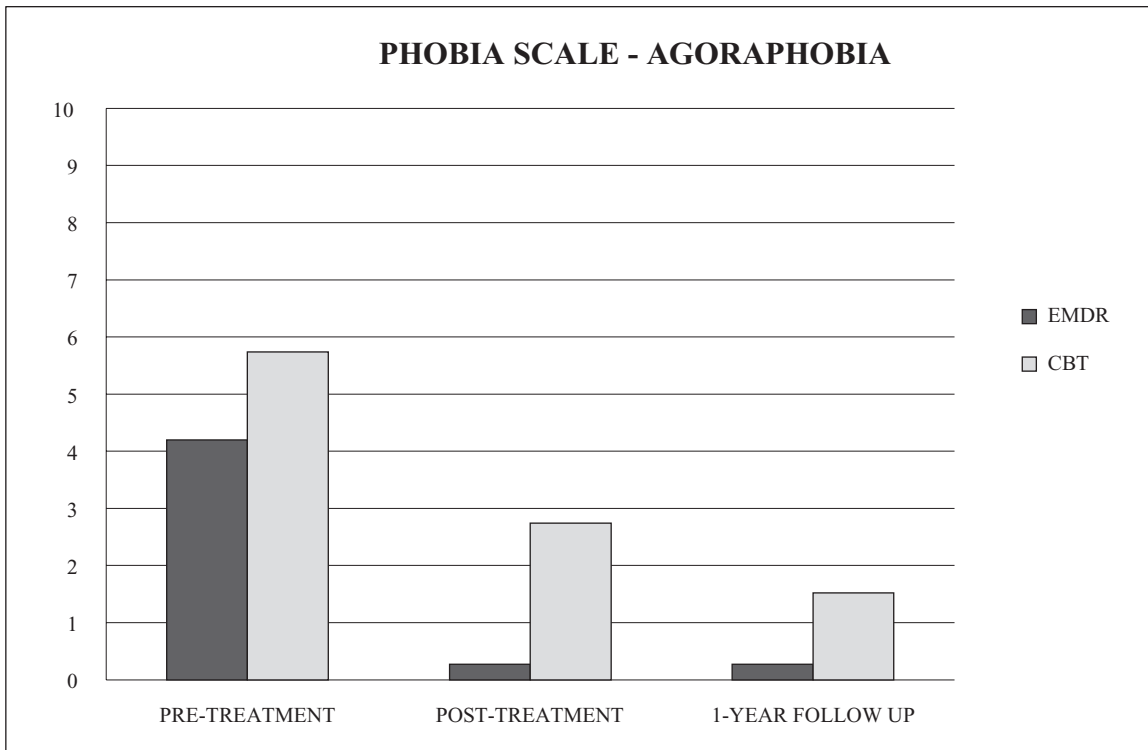
FIGURE 3. Mean levels of agoraphobia on the Phobia Scale in both groups across evaluations.

The results of this study suggest that the treatment of PD (both with and without agoraphobia) with EMDR appears to be equally as effective as CBT and that EMDR may be more effective in reducing frequency of panic attacks. In this study, similar results were apparent on all four assessment instruments reported here—reflecting state-trait anxiety, anticipatory anxiety, phobic anxiety, numbers and intensity of panic attacks, and overall distress—showing similar symptomatic improvement at posttreatment and follow-up in both groups.
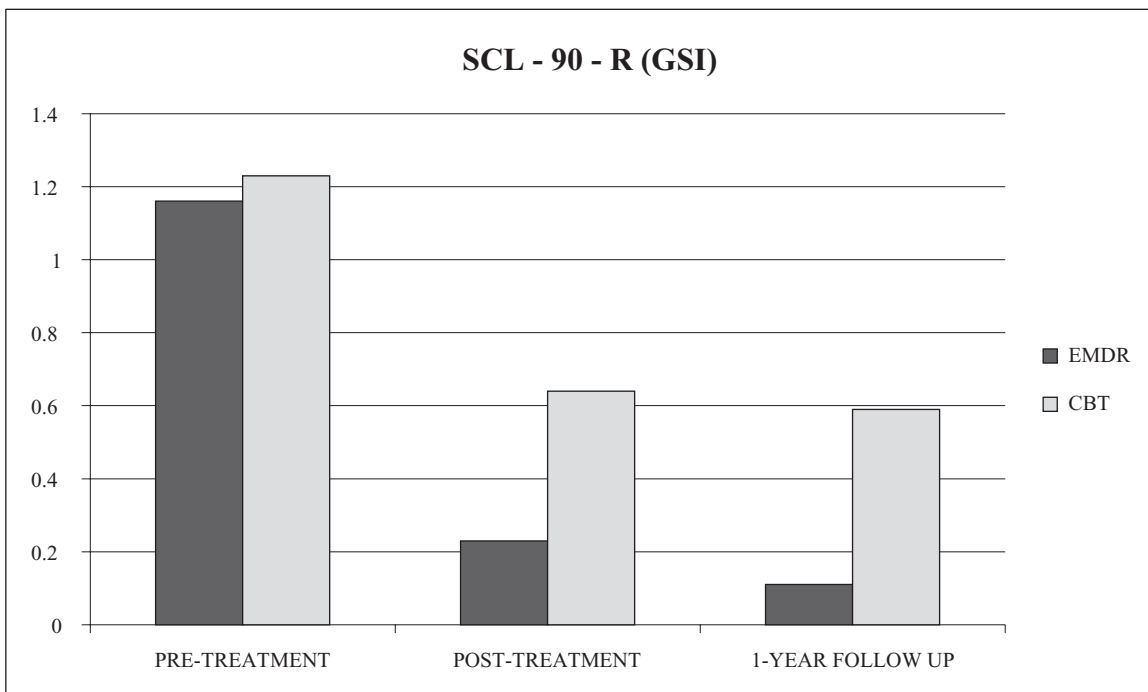

FIGURE 4. Mean of Global Symptoms Index (GSI) of SCL-90-R.
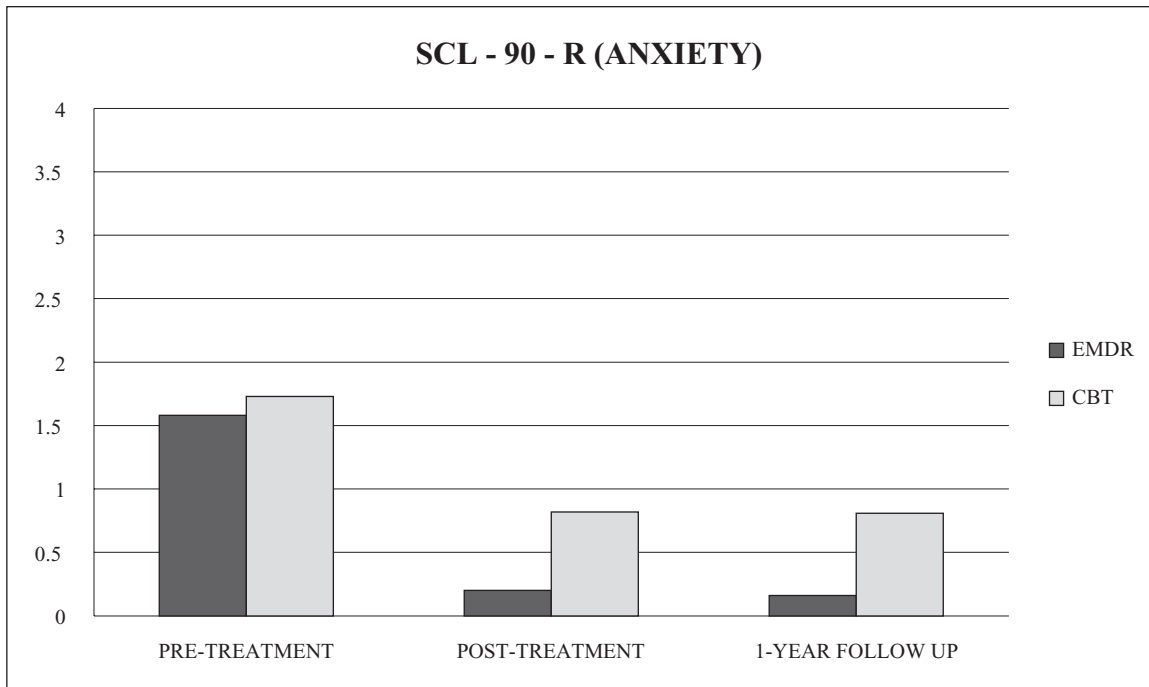
FIGURE 5. Symptoms of anticipatory anxiety in both groups on the SCL-90-R.

One of the important findings in this study is that the effects were maintained at 1-year follow-up. This stands in contrast to the larger, controlled studies by Feske and Goldstein (1997) and Goldstein et al. (2000), both of which found that the positive post-treatment effects were not maintained at follow-up.

It had previously been suggested by Faretta and Fernandez (2006) and Leeds (2012) that EMDR treatment of PD and PDA could help eliminate symptoms of panic and agoraphobia in a small number of sessions when the overall treatment plans achieve fidelity to protocols proposed by the authors of the early
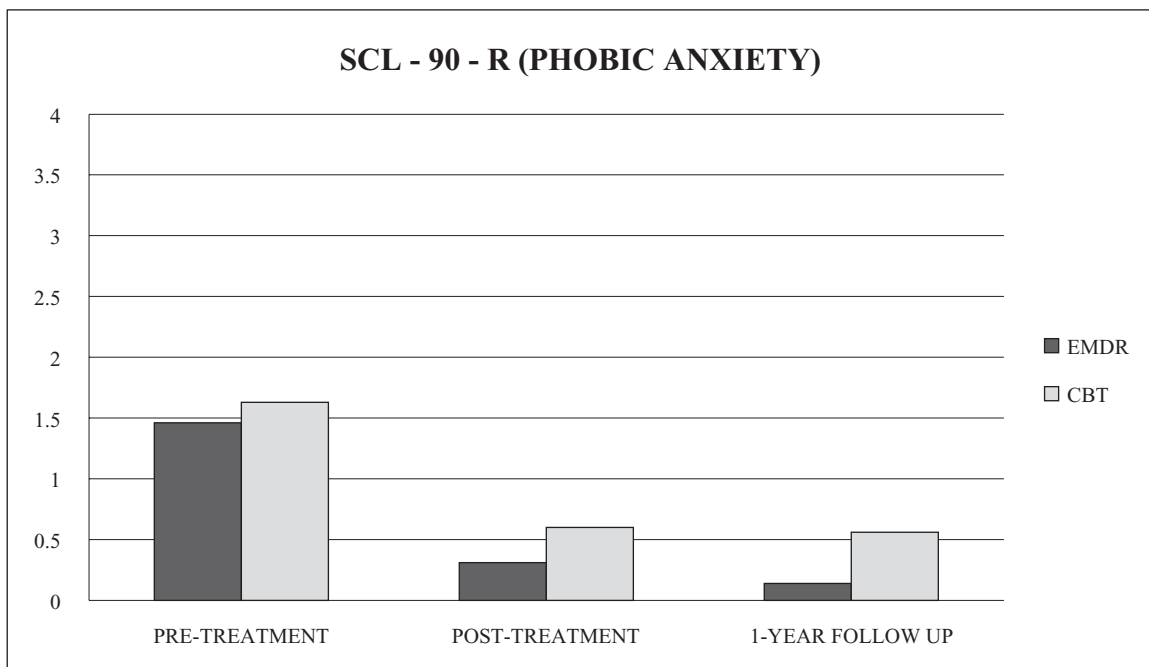
FIGURE 6. Symptoms of phobic anxiety in both groups on the SCL-90-R.

positive case reports and described by the developer EMDR (Shapiro, 2001). Although both of the larger, controlled studies by Feske and Goldstein (1997) and Goldstein et al. (2000) showed good procedural fidelity, neither followed such overall treatment plans.

In contrast to the prior controlled studies of EMDR treatment of PDA, this pilot study found a continuing decrease in frequency of panic attacks for participants with PD or PDA in the EMDR condition at follow-up that was significantly greater than that found in the CBT treatment group. This continuing improvement in the EMDR group at follow-up may signal a parallel with findings of difference at follow-up from Lee, Gavriel, Drummond, Richards, and Greenwald (2002) comparing EMDR treatment of posttraumatic stress disorder to stress inoculation training; however, this preliminary finding needs to be replicated with larger group sizes.

What Differences Can Be Described Between CBT and EMDR Treatment?

In this study, there were two main differences in the application of these two therapies. The focus of treatment differed: EMDR focused on memories of historical antecedents and current triggers, whereas CBT focused on changing present-day behaviors and cognitions. CBT patients received weekly homework tasks (diary of PA, relaxation, exposure) which were expected to be carried out throughout the course of treatment. In the EMDR group, patients were given some exercises during the preparation phase (e.g., breathing and "safe place" exercise), but after the first EMDR reprocessing sessions, patients were not required to do homework exercises and each patient responded spontaneously to his or her own internal changes in attitude (a self-healing process) as to when expose herself or himself to those situations that previously provoked anxiety.

Support for EMDR Conceptualization of PD

Negative life experiences early in life constitute a possible risk factor for the emergence of future psychopathology and vulnerability to trauma (Liotti & Farina, 2011; Siegel, 2001). The results from this study may have positive implications for patients who wish to resolve the antecedent and contributory situations that create a vulnerability to developing PD or PD with agoraphobia (Fernandez & Giovannozzi, 2012).

Strengths and Limitations of This Study

Comparing this study with other controlled studies that have attempted to evaluate EMDR treatment of PD, (Feske & Goldstein, 1997; Goldstein et al., 2000) there were some enhancements in the EMDR treatment protocol. Specifically, this study emphasized a protocol that targeted memories of panic attacks, current triggers for panic, early childhood-related traumatic experiences, and future concerns. The earlier studies had omitted targeting of current triggers and future concerns—on the grounds that this would constitute a form of imaginal exposure, and omitted consistent targeting of contributory childhood experiences (Feske & Goldstein, 1997, p. 1028; Goldstein et al., 2000, p. 951). Compared with earlier case reports (e.g., Faretta & Fernandez, 2003), this study provided a direct comparison between groups of participants, allowing for statistical assessment and treatment comparisons. Another strength of this study was a 1-year follow-up, allowing a determination of stability of effects across a significant period (cf. Galassi et al.'s, 2007, follow-up at 6 months).

There are several significant limitations of this pilot research. First, there were a limited number of participants available for the research in the time frame of the study. This resulted in a limitation of the statistical power in the findings. There was an unequal distribution of agoraphobia (56% in CBT group vs. 20% in EMDR group). Another limitation was the absence of an independent evaluator, both with regard to determination of diagnoses and administration of standard measures by each therapist, such that these may not have been carried out consistently. Despite an effort to standardize the interventions across therapists as outlined in the "Method" section, it is not definitively known how consistently treatments were carried out because of the different geographical settings of the participants, their therapists, and the treatment supervisors. Owing to the limited numbers of eligible patients, this study is best understood as a pilot report. It is intended that data obtained from these patients will be added to those from other patients during continued recruitment, allowing for more detailed analysis and greater statistical power in future reports.

Recommendations for Future Research

Further research in this area would benefit from a larger sample of participants, random assignment to treatment condition, plus a smaller geographic area of recruitment to allow for the same independent evaluator for members of both groups. The results of this study support the need to continue this research, expanding the sample with a greater number of subjects, the same number of sessions, and length of follow-up as realized in the present research design to further confirm our investigated hypotheses.

References

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Argyle, N., Deltito, J., Allerup, P., Maier, W., Albus, M., Nutzinger, D., . . . Bech, P., (1991). The Panic-Associated Symptom Scale: Measuring the severity of panic disorder. *Acta Psychiatrica Scandinavica*, *83*, 20–26.

Barlow, D. H. (1988). *Anxiety and its disorders: The nature and treatment of anxiety and panic*. New York, NY: Guilford Press.

Barlow, D. H., Gorman, J. M., Shear, M. K., & Woods, S. W. (2000). Cognitive-behavioral therapy, imipramine, or their combination for panic disorder: A randomized controlled trial. *Journal of American Medical Association*, *283*(19), 2573–2574.

Bisson, J. I., Brayne, M., Ochberg, F. M., & Everly, G. S. (2007). Early psychosocial intervention following traumatic events. *American Journal of Psychiatry*, *164*, 1016–1019.

Cho, Y., Smits, J. A. J., Powers, M. B., & Telch, M. J. (2007). Do changes in panic appraisal predict improvement in clinical status following cognitive behavioral treatment of panic disorder? *Cognitive Therapy and Research*, *31*, 695–707.

Clark, D. M., Salkovskis, P. M., Hackmann, A., Wells, A., Ludgate, J., & Gelder, M. (1999). Brief cognitive therapy for panic disorder: A randomized controlled trial. *Journal of Consulting and Clinical Psychology*, *67*(4), 583–589.

Craske, M. G., Roy-Byrne, P., Stein, M. B., Donald-Sherbourne, C., Bystritsky, A., Katon, W., & Greer, S. (2002). Treating panic disorder in primary care: A collaborative care intervention. *General Hospital Psychiatry*, *24*, 148–155.

Deacon, B. J., Lickel, J. J., Possis, E. A., Abramowitz, J. S., Mahaffey, B., & Wolitzky-Taylor, K. (2012). Do cognitive reappraisal and diaphragmatic breathing augment interoceptive exposure for anxiety sensitivity? *Journal of Cognitive Psychotherapy*, *26*(3), 257–269. http://dx.doi.org/10.1891/0889-8391.26.3.257

Derogatis, L. R., Lipman, R. S., & Covi, L. (1973). SCL-90: An outpatient psychiatric rating scale—Preliminary report. *Psychopharmacology Bulletin*, *9*, 13–27.

Emmelkamp, P. M., & Wessels, H. (1975). Flooding in imagination vs. flooding in vivo: A comparison with agoraphobics. *Behaviour Research and Therapy*, *13*, 7–15.

Faretta, E. (2001). Sconfiggere il panico. *Riza Scienze*, *153*.

Faretta, E. (2012). EMDR e terapia cognitivo-comportamentale nel trattamento del disturbo di panico: Un confronto. *Rivista di Psichiatria*, *47*(1), 19S–25S.

Faretta, E., & Fernandez, I. (2003). L'integrazione dell'EMDR nel trattamento del disturbo da attacchi di panico [Integration of EMDR in the treatment of panic attack disorder]. In F. Rovetto (Ed.), *Panico: Origini, dinamiche, terapie* (pp. 469–487). Milan, Italy: McGraw-Hill.

Faretta, E., & Fernandez, I. (2006). EMDR in the treatment of panic disorder with agoraphobia. *Clinical Case Studies*, *6*(1), 44–63.

Fernandez, I., & Faretta, E. (2007). EMDR in the treatment of panic disorder with agoraphobia. *Clinical Case Studies*, *6*(1), 44–63.

Fernandez, I., & Giovannozzi G. (2012). EMDR ed elaborazione adattiva dell'Informazione. La psicoterapia come stimolazione dei processi psicologici autoriparativi [EMDR and adaptive information processing. Psychotherapy as a stimulation of the self-reparative psychological processes]. *Rivista di Psichiatria*, *47*(2, Suppl. 1), 4S–7S.

Feske, U., & Goldstein, A. J. (1997). Eye movement desensitization and reprocessing treatment for panic disorder: A controlled outcome and partial dismantling study. *Journal of Consulting and Clinical Psychology*, *65*(6), 1026–1035.

Galassi, F., Quercioli, S., Charismas, D., Niccolai, V., & Barciulli, E. (2007). Cognitive-behavioral group treatment for panic disorder with agoraphobia. *Journal of Clinical Psychologyy*, *63*(4), 409–416.

Goldstein, A. (1995). Treatment of panic disorder with agoraphobia: Going beyond the barrier. *In Session: Psychotherapy in Practice*, *1*(3), 83–98.

Goldstein, A. J., de Beurs, E., Chambless, D. L., & Wilson K. A. (2000). EMDR for panic disorder with agoraphobia: Comparison with waiting list and credible attention placebo control conditions. *Journal of Consulting and Clinical Psychology*, *68*, 947–956.

Goldstein, A. J., & Feske, U. (1994). Eye movement desensitization and reprocessing for panic disorder: A case series. *Journal of Anxiety Disorders*, *8*, 351–362.

Gordeev, S. A. (2008). Clinical-psychological studies of patients with panic attacks with and without agoraphobic disorders. *Neuroscience and Behavioral Physiology*, *38*(6), 633–637.

Gould, R. A., Otto, M. W., & Pollack, M. H. (1995). A meta-analysis of treatment outcome for panic disorder. *Clinical Psychology Review*, *15*, 819–844.

Hofmann, S. G., Meuret, A. E., Rosenfield, D., Suvak, M. K., Barlow, D. H., Gorman, J. M., . . . Woods, S. W. (2007). Preliminary evidence for cognitive mediation during cognitive-behavioral therapy of panic disorder. *Journal of Consulting and Clinical Psychology*, *75*(3), 374–379.

Kahn, R. S., van Praag, H. M., Wetzler, S., Asnis, G. M., & Barr G. (1988). Serotonin and anxiety revisited. *Biological Psychiatry*, *23*(2), 189–208.

Lee, C. W., Gavriel, H., Drummond, P., Richards, J., & Greenwald, R. (2002). Treatment of PTSD: Stress inoculation training with prolonged exposure compared to EMDR. *Journal of Clinical Psychology*, *58*(9), 1071–1089.

Leeds, A. M. (2009). *A guide to the standard EMDR protocols for clinicians, supervisors, and consultants*. New York, NY: Springer Publishing.

Leeds, A. M. (2012). EMDR treatment of panic disorder and agoraphobia: Two model treatment plans. *Journal of EMDR Practice and Research*, *6*(3), 110–119.

Liotti, G., & Farina, B. (2011). *Sviluppi traumatici. Eziopatogenesi, cinica e terapia della dimensione dissociativa*. Milano, Italy: Cortina.

Markowitz, J. S., Weissman, M. M., Ouellette, R., Lish, J. D., & Klerman, G. L. (1989). Quality of life in panic disorder. *Archives of General Psychiatry*, 46, 984–992.

Marks, I. M., & Mathews, A. M. (1979). Brief standard self-rating for phobic patients. *Behaviour Research and Therapy*, 17, 263–267.

Meuret, A. E., Wilhelm, F. H., Ritz, T., & Roth, W. T. (2003). Breathing training for treating panic disorder. *Behavior Modification*, 27(5), 731–754. http://dx.doi.org/10.1177/0145445503256324

Ost, L. G., Thulin, U., & Ramnerö, J. (2004). Cognitive behaviour therapy vs. exposure in vivo in the treatment of panic disorder with agoraphobia. *Behaviour Research and Therapy*, 42, 1105–1127.

Otto, M. W., & Whittal, M. L. (1995). Cognitive-behavior therapy and the longitudinal course of panic disorder. *The Psychiatric Clinics of North America*, 18(4), 803–820.

Rovetto, F. (2003). *Panico: Origini, dinamiche, terapie*. Milan, Italy: McGraw-Hill.

Sánchez-Meca, J., Rosa-Alcázar, A. I., Marín-Martínez, F., & Gómez-Conesa, A. (2010). Psychological treatment of panic disorder with or without agoraphobia: A meta-analysis. *Clinical Psychology Review*, 30(1), 37–50. http://dx.doi.org/10.1016/j.cpr.2009.08.011

Shapiro, F. (1999). Eye Movement Desensitization and Reprocessing (EMDR) and the anxiety disorders: Clinical and research implications of an integrated psychotherapy treatment. *Journal of Anxiety Disorders*, 13(1–2), 35–67.

Shapiro, F. (2001). *Eye movement desensitization and reprocessing: Basic principles, protocols, and procedures*. New York, NY: Guilford Press.

Sheehan, D. V. (Ed.). (1983). *The anxiety disease*. New York, NY: Scribner.

Siegel, J. D. (2001). *La mente relazionale. Neurobiologia dell'esperienza interpersonale*. Milan, Italy: Cortina.

Spielberger, C. D. (1989). *State-Trait Anxiety Inventory: A comprehensive bibliography* (2nd ed.). Palo Alto, CA: Consulting Psychologists Press.

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

Sturpe, D. A., & Weissman, A. M. (2002). Clinical inquiries. What are effective treatments for panic disorder? *The Journal of Family Practice*, 51(9), 743

Svanborg, C., Wistedt, A. A., & Svanborg, P. (2008). Long-term outcome of patients with dysthymia and panic disorder: A naturalistic 9-year follow-up study. *Nordic Journal of Psychiatry*, 62(1), 17–24. http://dx.doi.org/10.1080/08039480801960123

Wilson VanVoorhis, C. R., & Morgan, B. L. (2007). Understanding power and rules of thumb for determining sample sizes. *Tutorials in Quantitative Methods for Psychology*, 3(2), 43–50.

Correspondence regarding this article should be directed to Elisa Faretta, P.I.I.E.C. Centre, Via Settembrini n. 56-20124, Milano, Italy. E-mail: e.faretta@piiec.com