

ARTICLES

The Efficacy of EMDR in the Treatment of Depression

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This study investigated the efficacy of eye movement desensitization and reprocessing (EMDR) psychotherapy in treating the primary diagnosis of major depressive disorder by processing past or present trauma that was affecting the quality of life. The 26 diagnosed participants were randomly assigned to 6–8 sessions of EMDR treatment or the waiting list control. Beck Depression Inventory-II, Trauma Symptom Checklist-40, and Quality of Life Index Inventory were used at pre- and postassessment to measure depressive and trauma symptoms and quality of life of the participants for both groups. The targets for EMDR therapy were selected by the participants determining the negative cognitions most strongly associated with reduced functioning and then identifying a related disturbing event. Paired and independent sample *t* tests were applied for data analysis. Results showed significant improvements on all measures with large effect sizes. At 95% confidence interval, the results found EMDR as an effective treatment for depressive and trauma symptoms and for improving the quality of life of the participants. A generalization effect was found for the depressogenic cognitions, with the number and strength of negative beliefs markedly decreased at posttreatment, even for beliefs not targeted in the therapy. Three-month follow-up interview with the EMDR participants confirmed that the results had been maintained.

Keywords: eye movement desensitization and reprocessing (EMDR); depression; trauma; quality of life; generalization effects; treatment outcome

Depression is one of the foremost causes of the worldwide disability and disease burden (World Health Organization, 2014). It is a risk factor for suicide (Malone, Haas, Sweeney, & Mann, 1995). It is frequently comorbid with other chronic diseases and can exacerbate their health-related outcome (Moussavi et al., 2007). The U.S. National Comorbidity Survey estimated that the lifetime prevalence of depression is 17%–19%, 12 months prevalence rate is 2.9%–12.6%, and relapse rate for those who had earlier episodes is 50%–80% (Kessler et al., 1994). Laursen, Munk-Olsen, Nordentoft, and Montensen (2007) linked high mortality to depression. Chronic depression is often treatment resistant (Wood & Ricketts, 2013).

The symptoms of depression according to American Psychiatric Association in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; DSM-IV-TR; American Psychiatric Association, 2000) include low mood or sadness and loss of interest for at

least 2 weeks in activities that were previously enjoyable. Other symptoms may include low energy, guilt, feelings of worthlessness, change in appetite and sleep patterns, inability to concentrate, and suicidal ideation. According to Shapiro's (2001) adaptive information processing (AIP) model, stressful life events, loss, or "trauma" suffered in childhood or recently can be factors underlying depression. Various studies have found an association between the onset of depression and traumatic events (e.g., Brady, Killeen, Brewerton, & Lucerini, 2000) and stressful life events (e.g., Kendler, Hetttema, Butera, Gardner, & Prescott, 2003; Risch et al., 2009).

Depression is medically managed through antidepressants. However, in a meta-analysis, Fournier et al. (2010) concluded that although antidepressants have only a small advantage over placebos, their usage increases with increase in the severity of depression. Weight gain as a side effect is also a disadvantage of the pharmacological treatment (Reid & Barbui, 2010).

Tol, Barbui, and van Ommeren (2013) suggested that pharmacological management should be judiciously opted for and only in cases when psychotherapeutic interventions are ineffective or unavailable or the level of depression (i.e., concurrent moderate to severe) requires it.

Cognitive Therapy for Depression

Beck's (1979) cognitive theory is popularly used to understand depression. It postulates that negative thoughts, generated by dysfunctional beliefs, are usually the major cause of depression. Beck also asserted that people with depression selectively attend to features of their environment, which match their negative expectations and confirm them. They are usually inclined to amplify the significance and connotations placed on negative events and diminish the importance and meaning of positive events. All of these unconscious maneuvers function to help the person with depression to maintain core negative beliefs/schemas which contributes toward feelings of hopelessness about the future even when the evidence stands contrary to it. This process of selective attention to events is known as *faulty information processing* (Nemade, Reiss, & Dombeck, 2007). Patients with depression had highly charged *dysfunctional attitudes* or beliefs about themselves that hijacked the information processing and produced the negative cognitive bias, which led to the symptoms of depression (2008).

Cognitive therapy (CT) and cognitive behavioral therapy (CBT) are considered effective therapies for depression, significantly reducing relapse recurrence (Hollon, Stewart, & Strunk, 2006). In a meta-analysis of 28 studies, Vittengl, Clark, Dunn, and Jarrett (2007) found that the posttreatment relapse rate was 29% after 1 year and 54% after 2 years. On the contrary, the meta-analysis of 70 studies by Johnsen and Friberg (2015) reported a linear and steady decline in the effectiveness of CBT across time, with contemporary CBT seemingly providing less relief from depressive symptoms as compared to its effectiveness reported in previous years.

EMDR

Francine Shapiro introduced eye movement desensitization and reprocessing (EMDR) as a treatment for posttraumatic stress disorder (PTSD) in 1989. The therapy has since been scientifically authenticated as a psychotherapeutic intervention for PTSD (Foa, Keane, Friedman, & Cohen, 2009). EMDR therapy is an eight-phase treatment procedure with standardized

protocols. The treatment includes a broad evaluation of the client's presenting problem and history; stabilization and preparation of the client; and processing of the client's past traumatic memories, current stressful situations, and future difficulties (Shapiro, 2014).

Theoretically, EMDR psychotherapy is based on the AIP model (Solomon & Shapiro, 2008). It views psychopathology in the light of former traumatic experiences which may be large-T traumas (meeting PTSD diagnostic criteria) or small-t traumas (distressing life events). The model posits that memory networks holding the experiences of trauma seem unable to connect to other neural networks holding information of adaptive nature (Shapiro, 2001). These networks get persistently triggered by various internal and external stimuli and generate maladaptive responses (Shapiro, 1995, 2006). The EMDR treatment uses standardized procedures to connect traumatic memory networks with more adaptive networks, during bilateral sensory stimulations, thus changing the characteristics of the traumatic memory and bringing it to an adaptive resolution and transforming associated cognitions, sensations, and emotions (Shapiro, 2001, 2002; Shapiro & Forrest, 1997). Successful EMDR treatment alters individuals' responses to earlier experienced trauma (Shapiro, 2001).

EMDR Treatment of Depression

There have been several studies in which comorbid depressive symptoms were assessed in studies investigating EMDR treatment of participants diagnosed with PTSD. For example, in a randomized controlled trial, van der Kolk et al. (2007) found EMDR more effective than fluoxetine in reducing PTSD and depression symptoms. A meta-analysis by Ho and Lee (2012) determined that EMDR was more effective at reducing these comorbid depressive symptoms than CBT.

In 2013, Wood and Ricketts asserted that although EMDR has the potential to treat symptoms of primary depression, the application has not been adequately researched, and currently, it cannot be considered an evidence-based treatment for major depressive disorder. More recently, Hase et al. (2015) and Hofmann et al. (2014) conducted controlled matched studies in inpatient and outpatient settings with patients diagnosed with major depressive disorder. All participants received treatment as usual, and EMDR was provided as an adjunctive therapy to a matched group. Results showed significantly better improvement on symptoms of depression for those participants who received adjunctive EMDR.

Several case studies have reported positive treatment outcome when depression was treated with EMDR. For example, Uribe, Ramírez, and Mena (2010) found EMDR had a positive effect both on emotional cognitive processing and on long-term memory conceptual organization in patients with depression. Bae, Kim, and Park (2008) provided EMDR treatment to two teenagers with major depressive disorder related to stressful life events and found their depressive symptoms decreased to full remission. Broad and Wheeler (2006) treated an adult client having depression and attention deficit hyperactivity disorder (ADHD) with EMDR and reported significant decreased level of depression and hypervigilance and improved concentration ability which led to the discontinuation of medication for depression and ADHD. Krupnik (2015) successfully treated postpartum depression by integrating EMDR with his evolutionary-based treating depression downhill (TDD) therapy. Grey (2011) treated comorbid severe major depressive disorder and panic disorder with agoraphobia through EMDR and found reduction in symptoms of depression and anxiety.

In the light of earlier literature, it can be asserted that EMDR has the potential to treat symptoms of primary depression. However, no controlled study has investigated the application of EMDR as a stand-alone treatment for major depressive disorder. Hence, this study compared EMDR therapy with waiting list for participants with major depressive disorder. It was hypothesized that (a) for the EMDR participants, there would be significant postassessment reduction in scores on depressive and traumatic stress inventories and a significant postassessment improvement in quality of life scores after EMDR treatment compared to pretreatment scores obtained on the same inventories and (b) there would be significant differences between waitlist control participants and EMDR participants on pre- and postassessment change scores of depressive, traumatic stress, and quality of life measures.

Method

Participants

Participation in the study was voluntary, and potential participants were selected from available client base and from psychiatric and psychological referrals to an outpatient facility of Institute of Professional Psychology, Bahria University, Karachi Campus, Pakistan. Participants who met the inclusion criteria were offered the opportunity to participate. Inclusion criteria included the diagnosis of major depressive disorder (based on *DSM-IV-TR*; American Psychiatric Association, 2000), exposure to stressful life events (referred

to here as *small-t traumas*), residual debilitating symptoms, no medication or any other form of therapy, and a score of less than 35 on the Dissociative Experience Scale-II (Bernstein & Putnam, 1986). The inclusion conditions also required that the participants were of sound mind, capable of comprehending the terms of the study, and were physically capable of participating in this project. Comorbidity with other mental disorders and any substance use were the exclusion criteria.

A total number of 52 participants were referred to the researcher clinician, out of whom 29 met the inclusion criteria and were offered the opportunity to participate in the study. Twenty-three were screened out because of comorbid PTSD, use of antidepressants, substance use (hash, opium), and/or a score of more than 35 on Dissociative Experience Scale. Out of 29, 3 participants declined to join the study without giving any reason (Figure 1).

Twenty-six participants randomly assigned to experimental and waiting list were informed about the study and its purpose. After discussing the treatment procedure in detail, participants signed the informed consent forms. The 26 participants ranged in age from 18 to 60 years ($M = 29.38$); all had completed high school, and some had postsecondary education.

Nine participants dropped out during the study. Three participants from the experimental group did not turn up for postassessment after completing EMDR therapy because of law and order situation, some domestic problem, and personal reasons not shared. Six participants on the waiting list dropped out because of opting for pharmacological management, loss of motivation, worsening of symptoms because of delayed treatment, and logistic problems (see Figure 1).

Procedure

Participants meeting the inclusion criteria were randomly assigned to the waiting list control Group A and to experimental Group B. Random assignment was conducted by the research supervisor through toss of coin (i.e., heads: control, tails: treatment) without having knowledge of group condition. Participants completed pretreatment assessment measures. The waiting list control participants attended clinical interview regarding presenting complaints but received no therapy during the 7 weeks of the study. The experimental group was provided with six to eight EMDR treatment session delivered in weekly sessions. After the study was completed, posttreatment assessment was administered and the waiting list participants were provided treatment within the

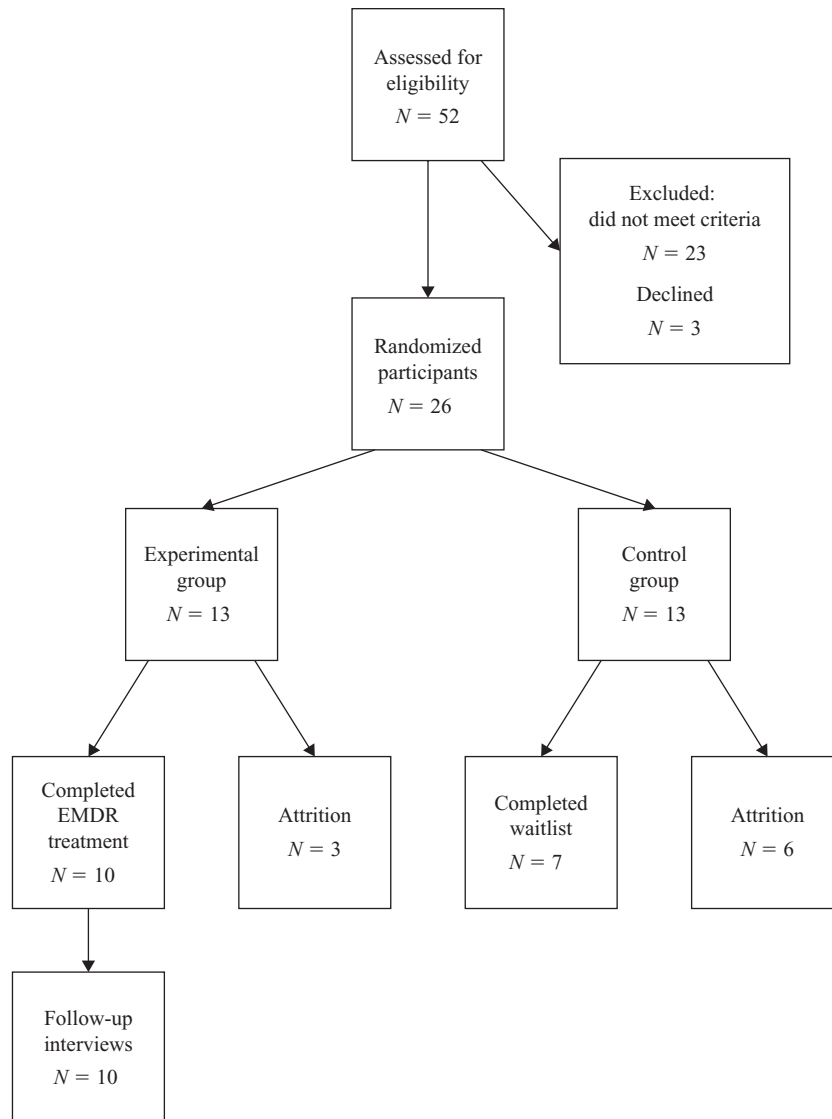


FIGURE 1. Participant flow through study.

Institute of Professional Psychology. Follow-up interviews were conducted by the therapist 3 months after treatment completion with EMDR participants to determine if there was any recurrence of depressive symptoms.

EMDR Treatment

Participants assigned to the experimental group received six to eight 1-hour EMDR treatment sessions proved on weekly basis. During the first 2–3 weeks, they went through first and second phases of EMDR treatment which focused on history taking and preparation. After preparation was completed, the participants received three to five EMDR processing sessions in which they targeted disturbing events thought to be related to their depressive condition. Ten experimental group participants completed

eight-phase EMDR therapy, postassessment, and follow-up.

The Therapist. The study (as an MPhil thesis) was conducted by the researcher clinician who has been an EMDR certified practitioner Level II (EMDR Europe) since 2008 in addition to holding a master’s degree in applied psychology, diploma and advanced diploma in counseling, and diploma in clinical supervision.

Treatment Fidelity. This research was supervised by committee comprising an assistant professor and two associate professors at Institute of Clinical Psychology, Bahria University, Karachi, Pakistan, from the time of synopsis presentation to completion of the research. Session logs and transcripts were maintained and presented to supervisor on fortnightly basis.

Treatment Description. During the first 3 weeks, participants attended history and preparation phases

of EMDR. They provided history about the origin of their disorder and learned containment exercises such as relaxation breathing and safe place imagery use so that they could deal with high level of physical and emotional distress if it came up. In the following three to five sessions, the participants experienced EMDR treatment sessions.

Standard protocol was used during the EMDR sessions with a slight modification in Phase 3 during target assessment. In standard protocol, the identification of negative cognition follows identification of the traumatic event. In our modification, participants identified the negative cognition most strongly associated with reduced functions and then identified the related events. To accomplish this, we provided clients with a list of self-referencing negative and positive beliefs (as used in EMDR therapy, from Shapiro, 2001) and asked them to rank the negative beliefs according to how each affected their functioning. Following this, participants identified the related disturbing event and completed the standard assessment phase.

The desensitization phase was carried out with minimal interference from the researcher clinician. During the installation phase, the concentration was on full integration of client's positive self-assessment with targeted information. Completion of installation phase was followed by body scan. When successful installation of positive installation was achieved and when the positive future template was used where it was necessary, the session was closed on debriefing the client about processing which may carry on between sessions. If the processing of the targeted material could not be completed in a given session, participants were assured that it would be taken up in the following session. Clients were encouraged to self-regulate between sessions through containment exercises or writing a diary. In the reevaluation phase, previously targeted material was assessed by the client for its resolution, and if new material surfaced, it, too, was processed and integrated with new learning regarding self. Before ending the treatment, an evaluation was made regarding the processing of all targeted events in relation to past, present, and future and clients adjustment to his social role.

Assessment

Data was collected at pre- and posttreatment for experimental group and pre- and postassessment waiting list for control group on the following three measures:

Beck Depression Inventory II. The Beck Depression Inventory-II (BDI-II) is a 21-item self-report measure

that identifies the incidence and severity of depressive symptoms and is sensitive to change in symptoms (Beck, Steer, & Brown, 1996). The sum of scores on 21 items is compared to cutoff score guidelines in given at the end of the inventory. The score of 0–13 is minimal range, 14–19 is mild depression, 20–28 is moderate depression, and 29–63 indicates severe depression.

Trauma Symptoms Checklist-40. The Trauma Symptoms Checklist-40 (TSC-40) is a 40-item self-report research measure (Briere & Runtz, 1989). It evaluates symptoms of trauma, distress, and some aspects of posttraumatic stress through self-report and can yield a total score from 0 to 120 on a 4-point frequency rating scale ranging from 0 (*never*) to 3 (*often*). Respondents have to mark how often they experienced the symptoms of trauma in the last 2 months. TSC-40 has 6 subscales: Anxiety, Depression, Dissociation, Sexual Abuse Trauma Index, Sexual Problems, and Sleep Disturbances. It is a relatively reliable measure with alpha of the subscale ranges from .66 to .77 and alphas of the full scale averaging between .89 and .91. TSC-33 and TSC-40 also have predictive validity (Dutton, 1995) with reference to different variety of traumatic experiences because it seems to predict perpetration of intimate violence.

Quality of Life Index. The Quality of Life Index (QLI) measures quality of life in terms of importance and satisfaction regarding various aspects of life (Ferrans & Powers, 1984). The QLI produces five scores: quality of life overall and in quality of life in four domains, such as health and functioning domain, psychological/spiritual domain, social and economic domain, and family domain. The total scale of QLI has high internal consistency and reliability (alpha coefficient range .73–.99; Ferrans & Powers, 1985). QLI is significantly sensitive to change.

Analysis

A mixed model between group and within group research design was employed to analyze the data. Statistical analysis through SPSS Version 20.0 was carried out for within group and between group mean comparisons for experimental and control groups. Pair sample and independent sample *t* test were applied to test the formulated hypothesis. The effect size was calculated through Cohen's *d*.

Results

The data was screened for missing values so that those could be reported and accurate results could

be calculated. Descriptive and inferential analyses were carried out through *t*-test application and effect sizes were calculated. Three participants from the experimental group ($n = 13$) and 6 participants from the waiting list control group ($n = 13$) dropped out of the study, and the analyses were conducted on data provided by 17 participants ($N = 17$) who completed the study.

Demographics

Demographic data was collected through demographic interview forms. The mean age of the 17 participants was 29.4 years; 7 participants were male. The participants included in the study belonged to diverse educational and professional backgrounds, and eight had completed graduate school. There were two medical doctors, two psychologists one businessman, two administration managers, two human resource managers, five students, two unemployed, and one house wife. Only one participant belonged to a lower income group. Seven were married, one divorced, and nine unmarried.

Comparison of Pre- and Post Treatment Assessment Scores Within the Experimental Group

Paired *t* test was conducted on the mean pre- and post treatment assessment scores of the experimental group participants (Table 1). Results showed significant improvement on all measures. On the BDI-II,

the mean scores dropped from 24.90 ($SD = 4.84$) to 3.60 ($SD = 4.50$), a significant decrease, $t(9) = 9.789$, $p = .000$. This was a large effect size with Cohen's d of 3.10. On the TSC-40, there was a significant difference in mean scores from pretreatment ($M = 55.40$, $SD = 14.58$) to postintervention ($M = 9.60$, $SD = 7.79$), $t(9) = 11.131$, $p = .000$ with large effect size, $d = 3.47$. There was also significant improvement in scores on the QLI, $t(9) = 6.734$, $p = .000$. Postintervention quality of life scores ($M = 19.80$, $SD = 2.40$) were significantly higher than preintervention quality of life score ($M = 13.82$, $SD = 2.40$) with large treatment effect, $d = 2.13$.

Comparison of Pre- and Postassessment Differences Between Experimental and Control Groups

Independent *t* tests were conducted to compare the mean difference scores (i.e., changes between pre- and postassessment of experimental group participants [$n = 10$] and the control group participants [$n = 7$]; see Table 1). On the BDI-II, the mean change score of the experimental group ($M = -21.30$, $SD = 6.88$) was significantly larger than that of control group ($M = -5.85$, $SD = 10.15$), $t(9) = 9.789$, $p = .001$, with large treatment effect size, $d = 1.97$, indicating that the experimental group showed a significant larger decrease in depression compared to control group. On the TSC-40, the mean difference score of the experimental group was significantly larger ($M = -29.47$,

TABLE 1. Pre- and Postassessment Mean Scores

	Control		Experimental	
	<i>M</i>	(<i>SD</i>)	<i>M</i>	(<i>SD</i>)
Beck Depression Inventory-II				
Preassessment	30.29	(9.25)	24.90	(4.84)
Postassessment	24.43	(12.38)	3.60	(4.45)
Change scores (post- and preassessment)	-5.86	(10.16)	-21.30	(6.88)
Quality of Life Index Inventory				
Preassessment	13.05	(2.13)	13.82	(2.02)
Postassessment	13.52	(4.11)	19.90	(2.40)
Change scores (post- and preassessment)	0.46	(2.62)	6.08	(2.85)
Trauma Symptoms Checklist-40				
Preassessment	58.00	(4.56)	56.47	(6.77)
Postassessment	51.86	(5.66)	27.00	(7.45)
Change scores (post- and preassessment)	-6.14	(19.35)	-29.47	(13.01)

TABLE 2. Reduction in Depressogenic Cognition Because of Generalization Effect of EMDR

EMDR Participant	Level of Depression on BDI-II at Pretreatment	Number of Negative Cognitions at Pretreatment	Target Belief	Number of Sessions	Number of Negative Cognitions at Posttreatment	Memories of Stressful Events
Mr. K	Borderline	12	Not okay to show emotion	8	3	Verbal/physical abuse unable to defend self
Mrs. F	Moderate	17	I am stupid	8	4	Neglect, physical/sexual abuse, difficult marriage
Miss I	Moderate	3	Not good enough	6	1	Childhood parental neglect, molestation
Miss	Severe	4	I don't belong	8	1	Childhood parental neglect, molestation
Miss L	Borderline	6	I am not lovable	6	2	Anger issues, critical parenting, parental discord
Miss N	Moderate	9	I am shameful	7	3	Sexual abuse relationship difficulties
Miss S	Moderate	8	I am different	8	3	Parental criticism, sexual abuse
Miss Zb	Severe	14	I am permanently damaged	8	3	Loss of both parents, broken relationships
Miss R	Severe	10	I am shameful	8	4	Childhood abuse, broken relationship
Mr. W	Moderate	5	I should have done something	6	2	Death of girlfriend in road accident

Note. BDI-II = Beck Depression Inventory-II.

$SD = 13.01$) than that of control group ($M = -6.14$, $SD = 19.35$), $t(15) = -5.076$, $p = .000$, with large treatment effect size, $d = 1.57$. Similarly on QLI, the experimental group showed a significantly greater improvement in quality of life ($M = 6.08$, $SD = 2.85$), compared to control group ($M = 0.46$, $SD = 2.62$), $t(15) = 4.13$, $p = .000$, with large effect size, $d = 2.16$ (see Table 1).

Changes in Cognitions

Mostly at the end of fourth session, and beginning of the fifth session, experimental participants were asked to rerate the cognitions (not memories) which they had rated before beginning EMDR treatment (Table 2). It is apparent that the ratings of cognitions which were not directly targeted in treatment changed during treatment, suggesting generalization effects.

Follow-Up Interviews

In the 3-month follow-up interviews with the participants of experimental group, all participants reported an improved sense of well-being and stated that they had not experienced any recurrence of depressive symptoms.

Discussion

This study is the first randomized controlled study to assess the efficacy of EMDR as the primary treatment for major depressive disorder. The findings of the study provide preliminary support for EMDR as a primary, effective, and short-term therapy for major depressive disorder, with effects maintained at 3-month follow-up. Ten experimental group participants received six to eight weekly EMDR treatment sessions. The seven

control group participants received no treatment for 7 weeks. Results showed that the mean scores of experimental group (within and between) showed significant reduction in the symptoms of depression and trauma and improved quality of life after EMDR treatment, with effects maintained at 3-month follow-up.

Our results extend the findings of the earlier mentioned case studies, and the Hase et al. (2015) and Hofmann et al. (2014) controlled studies and support the efficacy of EMDR in the treatment of major depressive disorder. It is noteworthy that remission in depressive symptoms was achieved after six to eight EMDR sessions. Although the Hofmann et al. (2014) study provided a mean of 6.9 EMDR sessions, in that study, EMDR therapy was adjunctive and participants received treatment as usual for a mean total of 44.5 treatment sessions.

Changes in Negative Cognitions

According to Beck (1979), depression is the result of faulty cognition about the self, the world, and the future. Ehlers and Clark (2000) observed that traumatic memories produce a certain belief about the faultiness of “the self” in relation to the traumatic incidence(s). The AIP model (Solomon & Shapiro, 2008) postulates that memories of stressful events are dysfunctionally stored, and these dysfunctionally stored traumatic experiences leads to psychological illness. Thus, we assumed that traumatic experiences and their dysfunctionally stored memories lead to faulty cognitions which cloud perceptual windows and that depressive illness is experienced as a result.

We hypothesized that if negative beliefs could be worked on (through processing the memories of the contributing events) and be replaced by positive beliefs, there would be relief from symptoms. EMDR’s AIP model posits that resolving memories of stressful events (Shapiro, 2001) will provide relief from emotional trauma (Shapiro & Maxfield, 2002). Hence, the target for EMDR in this study was the negative belief system that seemed to have been acquired and maintained through experiencing small-t traumas and which was related to depression.

During the assessment phase, the participants in the experimental group identified several negative beliefs (see Table 2). They were asked to rank those beliefs according to severity from most to least. They then selected one belief that they wanted to process at the onset. The participants were then asked to focus on the selected negative belief and identify any associated memory that came up for them. In case of several memories, they were asked to choose one as target for

EMDR. Participants shared memories of parental neglect, abuses, loss, and broken relationships. Frustaci, Lanza, Fernandez, di Giannantonio, and Pozzi (2010) suggested that such disturbing memories can be effective targets for EMDR processing because the life events could be related to the onset or recurrence of depressive episodes.

In our research, it appeared that the first memory acted as a gateway to other dysfunctional memory networks and also to associated negative beliefs. When one memory got processed, another linked memory would surfaced and would become the target of EMDR for processing. As the targeted beliefs were processed and closure was made, in the following session, new targeted negative beliefs were identified for processing. However, participants stated that many of the other negative beliefs, which they had identified at the beginning of treatment, no longer felt true (see Table 2). The shift in the validity of the targeted cognition seemed to generalize to other untreated negative cognitions.

Generalization Effects. It seemed that stressful memories of different events were not only linked together but they were also contributing to various negative beliefs and that together, these memories and beliefs maintained the participants’ depressive state. Apparently, the treatment effect—with the transformation of the initial negative cognition and installation of positive beliefs/cognitions—had a generalized effect and played a role in the reduction of the number of negative beliefs and consequently depressive symptoms. The participants in the experimental group showed marked improvement after the first desensitization session. The reason might be that the irritants that caused depression were small-t traumas and not the PTSD Criteria A events.

Observations that EMDR’s positive treatment effects generalize to untreated memories are frequently reported. For example, Shapiro (2014) wrote, “Given that EMDR treatment effects generalize to similar memories, it is unnecessary to process each disturbing event” (p. 75). In a study by Yurtsever et al. (2014), participants indicated that the distress of untreated memory images had decreased after processing a targeted memory with EMDR. Our study may be the first study to show that this generalization effect extends also to negative cognitions.

Targeting Memories of Stressful Life Events

EMDR treatment provided in this study targeted memories of stressful life events (small-t trauma).

We considered that these experiences may have played a major role in the triggering and maintenance of depression. Research support for this position is found in the Risch et al. (2009) study that reported a significant association between major depression and small-t traumas. Similarly, Kendler et al. (2003) stated that stressful life events such as loss and humiliation that adversely affect the core values about self can be directly linked to the risk of experiencing depression. Our focus on targeting memories of stressful life events had been guided by the AIP model (Solomon & Shapiro, 2008) that postulates that dysfunctionally stored memories of small-t traumas lead to psychological illness, and when adaptive resolution is experienced as result of processing small ts through EMDR, remission in symptoms is observed.

Treatment Tolerance. EMDR treatment was generally well tolerated by almost all participants. Mild emotional arousal was observed in one participant who managed it through breathing/relaxation, and no adverse effects were observed. An explanation could be that hyperarousal is a core symptom of PTSD and may not be witnessed when EMDR is applied to pathogenic memories not related to PTSD (Hofmann et al., 2014; see Table 2).

Conclusion

The results of this study found preliminary support for EMDR as an efficacious therapy in the treatment of major depressive disorder, with significant improvement on trauma, quality of life, and depression inventories after only six to eight sessions. Despite the fact that the study was limited by the sample size and requires replication, it is the first randomized controlled trial that used EMDR as the primary treatment for major depressive disorder. In other controlled studies, EMDR was adjunctive to other psychotherapy and/or psychopharmacological treatment such as antidepressants (e.g., Hase et al., 2015). Observing the rapid effectiveness of EMDR in this study, it can be hypothesized that EMDR could perhaps provide relief from depression in less time compared to other treatments. We also documented a large decrease in negative cognitions, with a generalization effect reducing the number of untreated negative cognitions.

The modified EMDR protocol used in this study needs further exploration. The results of this study also point toward an expanded scope of EMDR. It is recommended that future studies investigate its effectiveness in treating affect disorders or other psychological disorders in which the symptoms can be related to stressful life events. Future research could

also investigate the use of EMDR in treating small-t traumatic experiences producing depression in children, adolescent, and older populations.

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