The Use of Eye Movement Desensitization and Reprocessing (EMDR) in the Treatment of Traumatic Stress and Complicated Mourning: Psychological and Behavioral Outcomes

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Objective: The purpose of this study was to determine the differential effects of treatment on a complex of symptomatology that includes grief, post-traumatic stress disorder (PTSD), anxiety, and self-esteem by comparing eye movement desensitization and reprocessing (EMDR) and guided mourning (GM) treatments. Method: Twenty-three EMDR clients and 27 GM clients completed measures designed to assess psychosocial and behavioral symptoms of loss before and after treatment and at a 9-month follow-up period. Results: Out of the five psychosocial measures of distress, four (State Anxiety, Impact of Event Scale, Index of Self-Esteem, and PTSD) were found to be significantly altered by type of treatment provided, with EMDR clients reporting the greatest reduction of PTSD symptoms. Data from the behavioral measures revealed similar findings.

There are approximately 3 million deaths each year in the United States, with each passing affecting from 8 to 10 family members and countless other friends, coworkers, and neighbors. This creates a large population of mourners, a significant proportion of whom may suffer complications in their mourning experience (Rando, 1995). Jacobs and Kim (1990, p. 64) estimate that as many as one in three bereavements result in morbid outcomes or pathological patterns of grief. One identified factor, the mode of death, has been identified as a predictor of complicated mourning. A traumatic death can confound healthy mourning by imposing an overlay of traumatic stress symptomatology on the normal grieving process. The mourner must then deal with the traumatic stress symptoms before the tasks of mourning can occur (Rando, 1995).

Traditionally, social workers have been prominent providers of services to individuals and families with these types of symptoms. As frontline workers

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in many community-based mental health centers, social workers are often required to work with traumatized and grieving clients. Because of the immediacy of client needs following the violent death of a loved one and the recalcitrance of third-party payers to fund mental health services to those whose psychological disturbance extends beyond a few weeks or sessions, social workers have recognized the need to find treatment solutions that are parsimonious and effective. This article will describe the unique challenges that trauma imposes on the grieving process and describes a study that compares the effects of two cost-effective interventions on traumatic stress and complicated mourning.

HOW TRAUMA COMPLICATES MOURNING

To comprehend complicated mourning, it is necessary to understand the healthy version of the process from which it varies. Healthy mourning refers to the conscious and unconscious process of separation, adaptation to the subsequent losses, and reestablishment of social and emotional connections to the environment. This process is often conceptualized into nonsequential stages, phases, or tasks that the mourner must complete to successfully adapt to the loss. According to Rando (1995), complicated mourning means that "given the amount of time since the death, there is some compromise, distortion or failure of the mourning process" (p. 149).

Grief is a very personal experience, influenced by mourning behaviors and rituals that are idiosyncratic and culturally influenced. There are, however, several confounding variables that have been consistently identified as negatively affecting the course of bereavement. These factors include the relationship of the deceased to the mourner, the mode of death, history of mental illness, and the individual's perception of and use of social support. The postdeath response of the mourner is experienced as a multidimensional phenomenon, having an impact on the individual emotionally, cognitively, behaviorally, physiologically, and spiritually (Sprang & McNeil, 1995). Many authors have noted that the mode of death in particular acts as a traumatic stressor, which in turn, can prompt symptoms of post-traumatic stress disorder (PTSD) (Amick-McMullan, Kilpatrick, Veronen, & Smith, 1989; Sprang & McNeil, 1998). Although the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV*) (American Psychiatric Association, 1995) provides very clear diagnostic specifications for PTSD, complicated mourning, especially that which is complicated by a trauma, is not diagnostically defined. In general, the following factors are recognized as contributing to a complicated form of mourning that can also be referred to as traumatic grief

(adapted from Rando, 1995; Sprang & McNeil, 1998; Lieberman, 1978). This complication can occur when (a) the mode of death was sudden, violent, destructive, mutilating, and/or humiliating; (b) the death was random and unexplained; (c) the mourner was faced with multiple deaths or the threat of multiple deaths; (d) the mourner's own survival was threatened; (e) there was a shocking or horrifying confrontation with the body; (f) there was significant physical destruction imposed on the deceased's body; and (g) the mourner witnessed or had some exposure to the death or crime scene.

The traumatic nature of the death can complicate bereavement by introducing unnatural and distressing sensory material into the individual's cognitive schema. With grief that is complicated by trauma, the mourner must deal with symptomatology that is consistent with traumatic stress, reexperiencing traumatic material, increased arousal, and avoidance of potentially painful stimuli in addition to the usual mourning responses of shock, denial, anger, depression, and bargaining. Ochberg (1988) identified features of PTSD that are not included in the *DSM-IV* (American Psychiatric Assocation, 1994). These symptoms include demoralization, subjugation, decreased self-esteem, fear of future harm, loss of control, and survival guilt. These reactions further complicate the recovery process by negatively affecting the individual's sense of self, autonomy, sense of mastery, and sense of safety. The individual who feels strong and in control will feel guilt, shame, and suffer a loss of self-esteem when faced with a situation that makes him or her feel weak and out of control.

The Treatment of Complicated Mourning

Many authors have developed treatment models that are designed to address the complications of mourning. The most recognized and used methods include focal psychotherapy (Raphael, 1975), regrief therapy (Volkan & Showalter, 1968), cognitive-behavioral and social therapies (Averill & Wisocki, 1981; Gauthier & Marshall, 1977; Lieberman, 1978; Mawson, Marks, Ramm, & Stern, 1981), Gestalt therapy (Perls, Hefferling, & Goodman, 1951), time-limited dynamic psychotherapy (Horowitz, 1973), Worden's (1982) treatment for pathological grief, Rando's (1984) Schema for Creating Therapeutic Bereavement Rituals, and guided mourning (GM) (Mawson et al., 1981). The efficacy of these approaches is mixed, but outcome studies suggest that treatment, whatever the approach, is most effective when it targets specific problems in the mourning process that act as barriers to healthy adaptation. In this study, two approaches to addressing complicated mourning are compared, GM and eye movement desensitization and reprocessing (EMDR). GM intervention was chosen because it was the

routine, standard of care for complicated mourning used by the clinicians in this study and is a relatively brief, evidenced-based, cost-effective intervention. The reasons for including EMDR in the treatment protocol were twofold. First, the method includes a prolonged exposure component that is similar to that used in GM. This allows for other differences in procedures (i.e., eye movements in EMDR) to be separated from the exposure effects. Second, EMDR advocates state that this methodology addresses the need for parsimony by providing substantial symptomatic relief within a few sessions (Lipke & Botkin, 1992; Pellicer, 1993; Puk, 1991). As Shapiro (1995), originator of the method, states, "EMDR has the ability to facilitate profound therapeutic change in much less time than has been traditionally assumed to be necessary" (p. 16). In fact, single-session success stories with previously treatment-resistant Vietnam veterans have been reported by a number of Department of Veteran's Affairs Medical Center program directors (Daniels, Lipke, Richardson, & Silver, 1992).

GM

The GM approach is guided by the assumption that complicated mourning is similar to phobic avoidance and is most effectively treated by exposure to the avoided stimuli. Through treatment, individuals learn that they can self-regulate and are counterconditioned by pairing affective release with release of tension. This behaviorally based series of interventions outlined by Mawson et al. (1981) has five primary tasks: (a) exposure to painful memories, images, ideas (rational or irrational), places, or situations related to the loss; (b) repeated discussions of painful or difficult ideas, situations, or symptoms related to the loss until distress is diminished; (c) exposure to previously avoided places, situations, or people that signify the loss or that prompt psychological distress; (d) encouragement to say goodbye and to complete any unfinished business with the deceased via experiential methods; (e) journaling, forced writing and thinking about the deceased; and (f) daily viewing of the deceased's photograph. The GM approach is generally conducted over a period of time, requiring 10 to 20 sessions. Research supports the effectiveness of this approach in instances where mourning has been avoided, repressed, delayed, or complicated by traumatic imagery (Rando, 1995). The effects of this treatment on complicated mourning is supported by controlled studies conducted by Mawson et al. (1981), who concluded that GM decreased phobic avoidance but had less impact on ameliorating depressed mood. Lieberman (1978) also found GM useful in decreasing phobic avoidance as well as repressed and prolonged symptomatology. Lieberman suggested that GM is most effective when it

includes behavioral methods such as systematic desensitization and implosion coupled with family involvement (when possible). Hodginkson (1982) studied the course of GM intervention with 10 clients and discovered that his patients reported increased confidence in their ability to regulate overwhelming emotions.

Although there is no formal certification procedure for clinicians who use this procedure, the prolonged exposure element necessitates the provider (a) be able to establish a relationship with the client that is built on trust, (b) possess the assessment skills necessary to identify and prioritize material that evokes the phobic avoidance, (c) possess the knowledge and skills to properly execute the procedure via specialized training, and (d) experience working with traumatized individuals.

EMDR

EMDR is a "synclectic" (Shapiro, 1995) approach, borrowing concepts from cybernetics as well as psychoanalytic, behavioral, cognitive, and physiological theories, within an accelerated information processing framework. According to Shapiro, information processing is halted by an overexcitement of a specific locus of the brain, causing neural pathology. Traumatic material may be dysfunctionally cached along with any negative self-assessments the mourner may have formed as a result of the traumatic event. This information may be triggered by different aspects of the event—images, physical sensations, tastes and smells, sounds and affect, and cognitive processes such as self-assessments and belief statements—and may become intrinsically linked to other related and nonrelated (benign) events that may share a common image, sensation, and so forth. Exactly how EMDR produces changes in the processing of traumatic material is still unclear, but Shapiro believes that EMDR accesses the same mechanisms used in learning and memory that have been displayed in REM sleep.

Although the physiology of EMDR is a mystery, there is general agreement on the necessary protocols of this methodology (see Table 1). In successful EMDR, the therapist must (a) make conscious and address the events that led to the formulation of the clients current cognitive/affective framework (b) discover the triggers that stimulate the maladaptive symptomatology and desensitize the client to them; and (c) install a valid cognitive/affective/behavioral response to the traumatic material in order to increase the client's sense of self-efficacy.

EMDR is not a treatment option for the novice clinician. To be qualified to provide EMDR, licensed clinicians must receive EMDR-approved training

and should receive adequate supervision to master the technique. Clinicians must demonstrate competency in their ability to (a) establish a level of rapport that allows clients a "safe harbor" in which to reexperience distressing memories; (b) uncover, identify, and prioritize, accurately and collaboratively, appropriate targets for processing; (c) use insight, sensitivity, and judgment and practice wisdom and empirically sound clinical skills to assist in the completion of reprocessing; (d) model appropriate skills and responses; and (e) provide flexible scheduling, because most EMDR sessions require 1 1/2 to 2 hours.

Empirical research on the effectiveness of EMDR is still in its infancy. In 1989, Shapiro introduced the first controlled treatment study that examined the impact of EMDR on psychological outcomes. Although hampered by methodological limitations, this study sparked the interest of researchers and practitioners across disciplines. A study conducted by Wilson, Becker, and Tinker (1997) found that the initial treatment effects of three 90-minute sessions of EMDR were maintained 15 months posttreatment, with a 84% reduction in PTSD diagnoses and a 68% reduction in symptoms. A more recent study conducted by Carlson, Chemtob, Rusnak, Hedlund, and Muraoka (1998) included multiple physiological measures as well as standard psychological scales with very positive results. These findings are consistent with findings by Renfrey and Spates (1994); Vaughn, et al. (1994); and Wilson, Silver, Covi, and Foster (1996). Additional investigation via case reports (Lipke & Botkin, 1992; Pellicer, 1993; Puk, 1991; Spector & Huthwaite, 1993; Wernick, 1993; Wolpe & Abrams, 1991) has also yielded promising results. Although many of these case studies lack objective or standardized measures, in general these reports revealed positive outcomes in the form of decreases in subjective units of distress as well as decreases in global, physiological, and behavioral expressions of distress.

Conversely, Lohr, Tolin, and Lilienfeld (1998) examined 17 studies on the effectiveness of EMDR and the conceptual analysis of the mechanics of the information-processing action. From their review, they found that whereas verbal report measures were altered, little evidence was discovered to support an effect on physiological or behavioral indices, and sparse evidence was uncovered that supported the efficacy of eye movements above and beyond nonspecific and placebo effects. For example, Feske and Goldstein (1995) compared eye movements and eye fixation in two groups of subjects with panic disorder and found no differences in State-Trait anxiety scores. Furthermore, Wolpe (1990) states that EMDR is just another form of more established behavioral procedures such as systematic desensitization, suggesting the eye movements are unnecessary. Proponents of the model argue that EMDR has been held to different and higher standards than other

interventions for the same disorders (Greenwald, 1997; Rogers, 1996). Lohr et al. (1998) countered that "had EMDR been put forth as simply a variant of extant behavioral treatment, we suspect that much of the controversy concerning its efficacy and use would have been avoided" (p. 150). Semantic and territorial disputes aside, it appears that many of the studies reviewed by Lohr et al. did not include treatment efficacy measures that focused on the mechanism to which the eye movement procedure (a component that distinguishes EMDR from other exposure methods) is directed. Because inquiry into the specific neurological impact of EMDR is still in its infancy, further research is needed to determine what role EMDR may or may not play in addressing physiological symptoms of distress.

The EMDR Protocol for Complicated Grief

The purpose of EMDR treatment with complicated mourning is to allow the grieving individual the ability to accept his or her painful personal loss and enable him or her to recall positive memories of the deceased. This requires addressing the traumatic symptomatology first, so that healthy and normal mourning can occur. EMDR appears to re-stimulate the blocked cognitive passages (found in complicated grief), to accelerate the processing of dysfunctional information, and to allow appropriate, healthy insights and emotions to emerge, thereby facilitating successful mourning. EMDR does not eliminate or neutralize appropriate emotions and does not forestall personal growth. The EMDR client will proceed along the course of healthy adaptation, while concurrently resolving barriers to adaptation. According to Shapiro (1995), information processing and healthy adaptation will continue once these barriers are removed, so there is no protocol requirement to wait a specified amount of time before beginning EMDR.

This study sought to address some of the limitations of past studies that lacked adequate control or comparison groups and failed to examine the impact of EMDR treatment on grief complicated by traumatic stress. There are two types of hypotheses formulated in this study. First, a main effects hypothesis is that participants in both groups would experiences decreases in anxiety, PTSD symptomatology, and grief and an increase in self-esteem over the course of the study. Second, it was hypothesized that the EMDR group would report greater decreases in anxiety, PTSD symptomatology, and grief than the GM group and higher levels of self-esteem than their GM counterparts.

METHOD

Participants

The participants in this study were all clients of outpatient mental health clinics in three states (California, Texas, and Kentucky) that offer specialized treatment for traumatic stress and bereavement issues. The 50 clients used in this study had presented for treatment due to a traumatic loss of a family member or close friend in a motor vehicle accident, disaster (flood, fire, tornado), or by murder or a drunk-driving fatality. Table 1 shows the type of losses for each group. Clients were allowed to self-select into one of the two treatment programs after reviewing written literature that described each treatment program. These materials were developed well in advance of the onset of the study as part of an educational packet provided to traumatized and grieving clients to assist them in making informed treatment choices. Although the clinician was available to offer a general explanation of procedures and answer questions, no attempt was made to persuade clients to or away from any particular group. Self-selection was particularly important with this group of clients because the clinicians desired to promote autonomy by allowing the participants as much control as possible. Over the course of the 2-year study period, the numbers of clients who self-selected into the two groups were similar, supporting the nonbiased presentation of the materials. Each clinician had been practicing GM for at least 4 years and been through specialized workshops on the procedure. All were licensed clinical social workers (at the MSW or Ph.D. level) who were trained in (Level I training plus experience using the technique with at least 30 clients) and routinely practiced EMDR and GM therapy. The three therapists had access to and routinely used peer supervision with other trained EMDR clinicians. The collection of pre- and posttest data followed the standard assessment and treatment protocols of the treating clinicians, with the exception that follow-up data was collected in a more systematized, formal manner via a blind interview by an independent evaluator. Response data were included in the study if (a) the mourner had experienced a death of a family member that was traumatic in nature as defined by the above-mentioned criteria; (b) the client was given a diagnosis of PTSD (based on the Civilian Mississippi for PTSD [CM-PTSD] cutoff score) in addition to bereavement; (c) the client displayed no evidence of psychosis, substance abuse, or Axis II pathology at the time of treatment (based on client report of symptoms, collateral reports, and observation); (d) the client had received only EMDR treatment or only GM therapy; (e) the

TABLE 1: Comparability of Treatment Groups

Variable	*EMDR*	*GM*	*Statistic*
Gender			
Male	26	24	$\chi^2(1, N = 50) = 0.1, p = .63$
Female	74	76	
Mean age (*SD*)	42.6 (8.6)	39.9 (9.1)	$t(50) = -.54, p = .5$
Race (% non-White)	17	17	$\chi^2(1, N = 50) = 0.2, p = .73$
Marital status			$\chi^2(1, N = 50) = 0.4, p = .47$
Married	78%	76%	
Nonmarried	22%	24%	
Years of education	13.5	13.7	$t(50) = -.48, p = .6$
Time since death in months (*SD*)	3.8 (1.6)	3.5 (2.1)	$t(50) = .13, p = .8$
Mode of death (%)			$\chi^2(3, N = 50) = 1.2, p = .33$
Murder	14%	15%	
Drunk driving	22%	20%	
MVA	48%	47%	
Disaster	16%	18%	

NOTE: EMDR = Eye movement desensitization and reprocessing. GM = Guided mourning. MVA = Motor vehicle accident.

client was at least 18 years of age; and (f) the client signed the appropriate informed-consent forms. Five clients were excluded for substance abuse problems along with one who presented with symptomatology that met the *DSM-IV* criteria for narcissistic personality disorder. There were no attempts made to limit or increase the number of sessions used by either treatment. Both therapies were allowed to run their course, and termination decisions were made collaboratively.

The findings of this study represent the responses of 27 GM clients and 23 EMDR clients that were treated during a 2-year period. There were 5 additional clients (3 GM and 2 EMDR) who started but did not complete treatment (1 moved away, 2 received other interventions, 1 became seriously ill and had to discontinue treatment, and the response of 1 client, assigned to the EMDR group, was excluded from analysis due to a low treatment compliance score). Client participation at follow-up was high on the psychometric measures. One respondent did not complete the Index of Self-Esteem (ISE) portion of the follow-up interview, necessitating exclusion of that portion of the follow-up data. All clients signed the informed consent for treatment forms and provided permission to use any data collected (in aggregate form) as part of the treatment process in this study.

Measurement

All data collection interviews included psychometric measures of traumatic stress, grief, anxiety, and self-esteem. These interviews were conducted before and after treatment and again at 9 months.

The CM-PTSD (Keane, Caddell, & Taylor, 1988) is a 35-item rating scale that measures *DSM-IV*-defined symptomatology. Items are rated on a 5-point Likert-type scale. The CM-PTSD permits a range of scores from 35 to 175, allowing it to be sensitive to more subtle changes in the client's symptom complex. Research conducted by Keane et al. has established a 107 as an approximate cutoff for PTSD, with higher scores on the CM-PTSD indicating higher levels of PTSD and scores below 107 indicating subthreshold symptomatology. Studies have shown the CM-PTSD to have good internal consistency (.94) and discriminant validity and identify it as one of the three best measures of PTSD (Watson, 1990).

The Texas Revised Inventory of Grief (TRIG). TRIG (Faschingbauer, Devaul, & Zisook, 1978) was used as a measure of grief as a present emotion, adjustment to a past life event, a medical psychology outcome and as a personal experience. The TRIG is a 15-item summative index that offers response choices on a 5-point scale whereby 1 = completely false, 2 = mostly false, 3 = partly true and partly false, 4 = mostly true, and 5 = completely true. Possible scores range from 15 to 75, with higher scores indicating higher levels of grief. The TRIG has a Cronbach's alpha of .82.

The Impact of Events Scale (IES). IES (Horowitz, Wilner, & Alvarez, 1979) is a 15-item self- report scale that measures intrusive and avoidance symptomatology related to a specific event. Participants are asked to respond to whether the things described in each statement have occurred with the past 7 days according to the following scale: 0 (*not at all*), 1 (*rarely*), 2 (*sometimes*), or 3 (*often*). The IES contains two subscales that assess intrusions and avoidance symptoms separately, although for purposes of this study, the total IES score (the sum of all responses) was used. The IES has high internal consistency and studies that have examined the sensitivity and reliability of the IES have revealed that the item content is consistent with clinical observations of response patterns to serious life events.

The State-Trait Anxiety Inventory (Form Y) (STATE). The STATE (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) is a 40-item self-report measure that assesses state anxiety (as a current, transitory emotional condition) and trait anxiety (a relatively stable state of anxiety proneness). For

purposes of this study, the 20-item state anxiety subscale score was used. Respondents were asked to respond to each item according to the following response categories: 1 (*not at all*), 2 (*somewhat*), 3 (*moderately so*), and 4 (*very much so*). Possible state anxiety scores range from 20 to 80, with higher scores indicating higher levels of anxiety. Alpha coefficients for this scale are .90 or above.

ISE. The ISE (Hudson, 1992) is a 25-item, self-report measure of the degree, severity, or magnitude the client has with self-esteem. The ISE produces a range of scores from 0 to 100, with higher scores indicating greater magnitude or severity of problems. The ISE has two cutting scores. The first is a score of 30 (±5); scores below this point indicate an absence of clinically significant problems in this area. The second cutoff is at 70; scores above this point nearly always indicate that a client is experiencing severe stress. Alpha reliability for the ISE is .93.

Treatment fidelity. Treatment fidelity was addressed for both treatment groups by asking the therapist to complete a protocol checklist at the time of treatment. The therapists were given credit for each procedure completed correctly and in sequence. The omitted or out of sequence procedures result in the deduction of points from a scale of 100. Any treatment compliance score of less than 90% meant the case was excluded from further analysis. All but one case from the EMDR group met the treatment fidelity requirement.

Behavioral Measures

Behavioral measurement came in the form of a behavioral checklist that was completed by each client regarding the occurrence and duration of intrusive thoughts, ruminations, nightmares, and reexperiencing of symptomatology (as defined by the *DSM-IV*) during the course of treatment. These behaviors included (but were not limited to) avoidance of known triggers, efforts to stay awake to avoid nightmares, or self-medicating rituals designed to numb reexperiencing symptoms. Weekly data were collected and aggregated for each group for subsequent analysis. Respondents were also asked to document positive memories of the deceased. The occurrence of positive memory episodes were recorded (from patient records) on the checklist by the therapist and averaged for each between session interval. All clients received the same set of written instructions on how to complete the checklists. This protocol required the individual report each memory episode that contained positive content, even if the image may have evoked anxiety,

sadness, and so forth. Interrater reliability for the coding of these memories was .92.

RESULTS

The sociodemographic characteristics of the two groups were determined via *t*-test and chi-square analyses and are presented in Table 2. There are no significant differences found between the groups on any of these variables, suggesting group equivalence. In addition, there were no significant pretreatment differences between the groups on any of the outcome measures used in this study: STATE, $F(1, 49) = 1.1$, $p = .17$; IES, $F(1, 49) = 1.18$, $p = .09$; ISE, $F(1, 49) = 3.86$, $p = .06$); TRIG, $F(1, 49) = .9$, $p = .43$); CM-PTSD, $F(1, 48) = .63$, $p = .94$. The average number of sessions for the EMDR group was 6.19 and for the GM group, 10.68. As Table 2 reveals, the mean pretest CM-PTSD score for both groups is well above the score of 107 established as a cutoff for PTSD by previous investigators (Keane et al., 1988). The pretest IES, STATE, and ISE means were consistent with established norms reported by Spielberg et al. (1983), Horowitz et al. (1979), and Hudson (1992). Treatment compliance means (94%, 96%, 97.1) for the three therapists reveal no significant differences.

Main-Effects Hypotheses

Factorial ANOVAs with repeated measures was the analytic strategy used to make pretreatment, posttreatment, and follow-up group comparisons on each of the psychometric measures used in the study. Main effects were calculated based on a within-subjects factor (Time) and a between-subjects factor (Group). A conceptual unit of error for protecting against Type 1 error of .03 (two-tail) was adopted for all statistical calculations on each comparison. Table 2 displays pretreatment, posttreatment, and follow-up means and standard deviations for both groups. The main effects calculations reveal significant pre- and posttreatment and pre-follow-up differences for the IES, STATE, ISE, and CM-PTSD measures in the EMDR and GM groups. There were no significant changes in TRIG pre- and posttest scores in either group, although significant pretest to follow-up changes are noted in both groups.

Interaction Hypotheses

Although the main effects are noteworthy, analysis of the interaction effects is of special interest in this study. ANOVAs revealed significant

TABLE 2: Means, Standard Deviations for the Groups at Pretreatment, Posttreatment, and 9-Month Follow-Up and Main Effects *F* and *p* Values

	Pretreatment		*Posttreatment*		*Follow-Up Interview*		*Pre-Post*		*Pre-Follow-Up*	
Outcome Measure	M	(SD)	M	(SD)	M	(SD)	*F(1, 49)*	*p <*	*F(1, 49)*	*p <*
State Anxiety							19.7	.001	20.1	.000
EMDR	56.3	(11.4)	36.8	(13)	35.7	(11.8)				
GM	55.0	(12.7)	45.7	(13.7)	46.8	(13.0)				
Impact of Events Scale							23.5	.001	23.2	.001
EMDR	47	(11.6)	23.8	(18.0)	22.7	(18)				
GM	44	(16)	37.0	(14.9)	36.8	(14)				
Index of Self-Esteem							36.2	.001	42.7	.000
EMDR	90.6	(7.1)	39.3	(7.6)	28.2	(1.2)				
GM	92.0	(9.3)	51.2	(9.7)	51.1	(3.1)				
Texas Revised Inventory of Grief							1.3	.73	2.2	.64
EMDR	67.3	(6.9)	65.1	(8.6)	60.3	(9.1)				
GM	66.1	(7.0)	65.0	(7.3)	59.1	(7.6)				
Civilian Mississippi Scale for PTSD							17.4	.001	16.9	.001
EMDR	118.9	(15.1)	90.8	(21.3)	91.4	(18.9)				
GM	119.7	(17.3)	115.2	(16.1)	115.4	(16.8)				

NOTE: EMDR = Eye movement desensitization and reprocessing. GM = Guided mourning. PTSD = post-traumatic stress disorder.

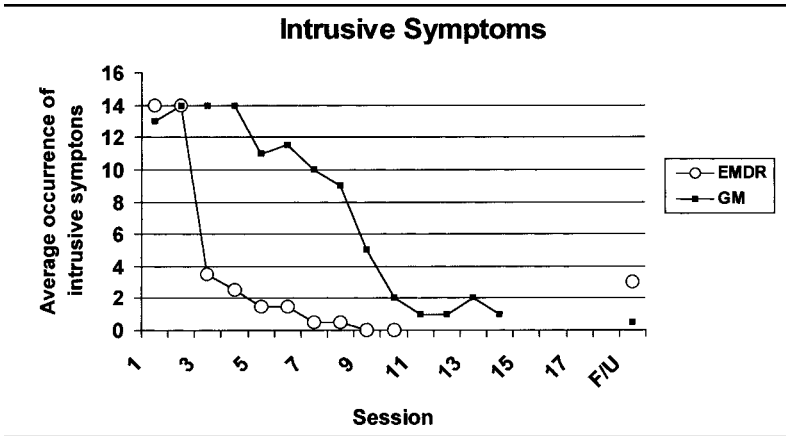

Figure 1: **Average occurrence of intrusive symptoms for the eye movement desensitization and reprocessing and guided mourning groups at each data collection interval.**

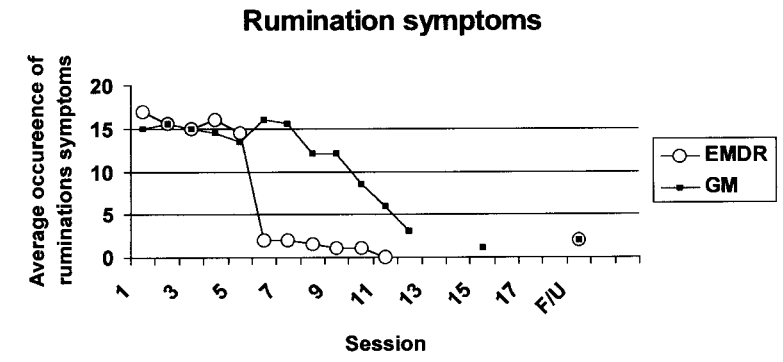

Figure 2: **Average occurrence of intrusive symptoms for the eye movement desensitization and reprocessing and guided mourning groups at each data collection interval.**

pretest and follow-up change for four of the five variables: IES, $F(1, 49) = 20.87$, $p = .001$; STATE, $F(1, 50) = 15.10$, $p = .026$; CM-PTSD, $F(1, 50) = 15.87$, $p = .000$; and ISE, $F(1, 50) = 4.81$, $p = .037$. TRIG scores, $F(1, 50) = .87$, $p = .659$, did not reveal differential improvement by treatment group. This suggests that although the respondent's level of grief decreased over the course of the study, this pattern was similar for both groups.

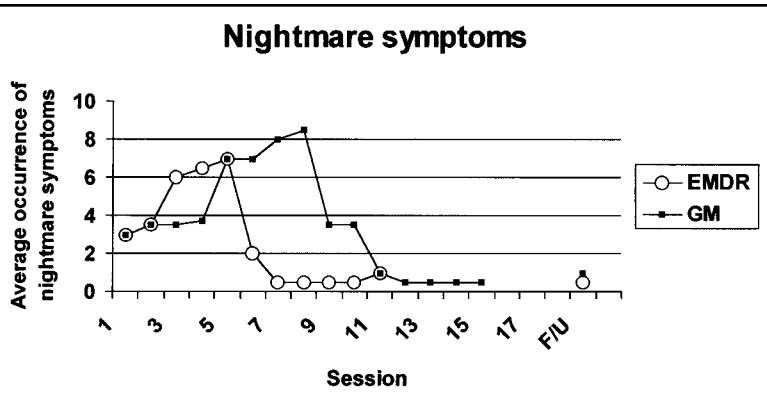

Figure 3: **Average occurrence of nightmare symptoms for the eye movement desensitization and reprocessing and guided mourning groups at each data collection interval.**

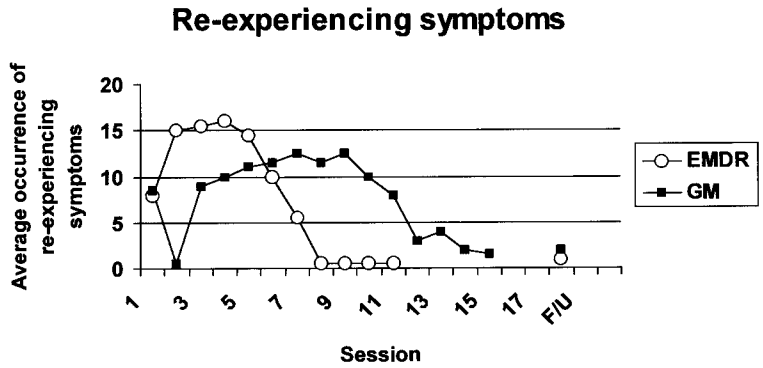

Figure 4: **Average occurrence of reexperiencing symptoms for the eye movement desensitization and reprocessing and guided mourning groups at each data collection interval.**

Behavioral Measures

Completion of the self-report data was fairly consistent during treatment (77% in GM group and 80% in the EMDR group) but scarce at the 9-month follow-up (43% in GM group and 42% in the EMDR group). Figures 1 through 5 illustrate the mean rates of occurrence for each of the indicators for both groups at each data collection interval. As noted by the response

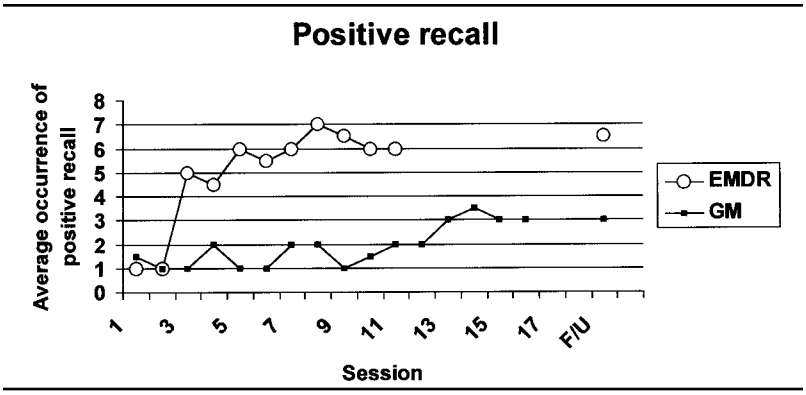

Figure 5: Average occurrence of rate of positive recall symptoms for the eye movement desensitization and reprocessing and guided mourning groups at each data collection interval.

patterns for each group, the EMDR clients experienced a more rapid increase in traumatic stress than did their counterparts, although the symptoms abated more expeditiously than in the GM group. ANOVAs revealed posttreatment, $F(1, 49) = 1.49$, $p = .37$, and follow-up, $F(1, 49) = 1.97$, $p = .45$, rates were similar for both groups, with no statistical difference uncovered.

The pattern and rate of positive recall was different for the two groups (see Figure 5). The EMDR group experienced statistically significant changes in positive memories from pre- to posttreatment, $F(1, 42) = 5.67$, $p = .029$, and pretreatment to follow-up, $F(1, 33) = 16.3$, $p = .001$, whereas the GM group experienced no significant change pre- to posttreatment, $F(1, 44) = 2.12$, $p = .49$, and near significance between pretest and follow-up rates, $F(1, 37) = 3.56$, $p = .056$.

DISCUSSION AND APPLICATIONS TO SOCIAL WORK PRACTICE

The purpose of this study was to determine the differential effects of treatment on a complex of symptomatology that includes grief, PTSD, anxiety, and self-esteem. There were no significant differences in the two groups on any of these demographic or pretest outcome measures, suggesting this study compared two equivalent groups. The findings of this study partially support the proposed hypotheses. Out of the five psychometric measures of psychological distress, four scores (from the STATE, IES, ISE, and CM-PTSD) were found to be significantly altered by the type of treatment imposed. Although all of the participants in the study experienced improvement in these four

areas, the EMDR group improved at a significantly higher rate on each of these measures. The results revealed that EMDR treatment had the greatest impact on traumatic stress symptomatology (intrusive symptoms, avoidance symptoms, anxiety, and overall PTSD) and a lesser but significant impact on self-esteem. Both groups experienced significant pre-post and pre-follow-up improvement in anxiety, traumatic stress, and self-esteem, although there were no significant post-follow-up changes on any of these measures. This suggests that treatment effects for these variables were realized primarily during the course of treatment but were maintained for 9 months via blind, independent evaluation. This finding is particularly interesting in light of the unique and ongoing stressors inherent in this type of personal crisis (involvement with law enforcement, legal issues, socioenviron- mental disruption, etc.).

Behavioral measures indicated that EMDR clients experienced a more rapid increase in traumatic distress than did their counterparts, although the symptoms abated more expeditiously than in the GM group. On all four indicators, the response patterns were consistent with treatment sequencing for each model, with EMDR clients initiating, processing, and becoming desensitized to prolonged exposure at an accelerated rate when compared to their GM counterparts.

There was considerable variation in the duration of treatment, with GM treatment requiring more sessions to completion than EMDR (10.68 sessions vs. 6.19). These data, in combination with the above-mentioned findings, suggest that EMDR was the most efficient of the two treatments used in this study for the treatment of trauma-related symptoms. Although EMDR may not completely eradicate biopsychosocial distress, a client's ability to process material appeared to be accelerated and desensitized, resulting in less traumatic stress symptomatology when exposed to traumatic stimuli.

The findings regarding the impact of EMDR on the level of grief is less straightforward. Even though the intensity of grief (via the TRIG score) decreased significantly over the 9-month period for both sets of clients, there were no remarkable differences by treatment group. This finding suggests that the benefit of EMDR treatment lies in the expeditious reduction of traumatic stress symptomatology, which in turn may have an availing, indirect impact on levels of grief, although no differential effects (based on the TRIG) were uncovered between treatment groups at any of the measurement intervals. Conversely, the rate of positive memories improved at a significantly greater rate for the EMDR group than the GM group. Therefore, Shapiro's (1995) assertion that EMDR's strength lies in its ability to increase the mourners capacity for positive recall (often prohibited by traumatic material) is supported. Possible explanation for the lack of congruency between this behavioral outcome and the TRIG scores may lay in the sensitivity (or lack

thereof) of the TRIG to detect changes in positive recall or the methodological components of the treatment in question. EMDR was not designed to alleviate grief, only to increase the positive memories of the deceased and remove deterrents to normal bereavement. Although theoretically the reduction of traumatic material should reduce some of the barriers to healthy grieving, in this study the real effects of treatment cannot be distinguished from the natural progression of bereavement. Longitudinal study of the long-term effects of EMDR and GM, in contrast to a no-treatment control group, is needed to determine if there are primary or residual effects of either treatment that may positively or negatively affect grief resolution.

Strengths and Limitations

The findings presented here should be understood in context. This field-based research should be viewed as an exploratory pilot study that is meant to provide direction to future research efforts aimed at increasing the efficacy of complicated bereavement treatment. The primary limitation to the study is the lack of random group assignment. The study respondents represent a homogeneous, treatment-seeking population that self-selected into one of the two treatment groups. Although random assignment would have strengthened the generalizability of the findings and decreased the possibility of selectivity bias, the participants were not recruited as research subjects but rather represent clients who presented voluntarily for treatment. Despite the research implications, the decision was made to allow personal choice and autonomy in the treatment-selection process. Although these individuals are comparable in terms of demographics and pretest psychological and behavioral characteristics, there may be other factors (e.g., placebo effects) not measured by this study that could account for the differential outcomes. This issue should be investigated further via a random, controlled study that includes an ethnosensitive design and addresses variables such as differential coping styles, personality, and so forth. The lack of a nontreatment control group raises some interesting questions regarding the effects of treatment versus the natural progression of grief. Even so, the findings (relative to the reduction of traumatic stress symptomatology) are consistent with the results of other studies (Carlson et al., 1998; Scheck, Schaeffer, & Gillette, 1998. Next, claims of treatment fidelity could be further supported by the inclusion of other methodology, such as videotaped sessions, study-specific training, and external reviewers. Finally, the study relied on many self-report measures that require solicitation of painful material that could introduce certain threats to internal validity. Even so, the instruments selected were consistent with measures used in similar studies (Carlson et al., 1998; Scheck et al.,

1998; Spector & Huthwaite, 1993) and were supplemented by behavioral indicators that revealed consonant results.

Social workers have long been called on to assist families and individuals in crisis. The challenges imposed by the confounding nature of trauma on the bereavement process make these situations difficult to address in a cost-effective manner. Social workers should be leaders in the delivery and evaluation of new approaches to the treatment of trauma and bereavement, especially those that hold promise as parsimonious and effective intervention strategies.

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