

Research on Low-Intensity Flash Technique Trauma Intervention by Prelicensed Student Clinicians

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There are not enough psychotherapists to offer individual trauma intervention to the tens of millions of people traumatized around the world. Eye movement desensitization and reprocessing (EMDR) is a proven trauma treatment but requires substantial time and financial resources for training. One solution may be low-intensity intervention with the flash technique (FT) offered one-on-one online and based on highly scripted instructions in which participants can work on their distressing memories independently. The FT is a protocol that was originally developed for the preparation phase of EMDR and only requires a few hours of training. In this study, we aim to explore whether a scripted FT protocol used by inexperienced student clinicians might be effective. Nine master-level social work students, trained in FT and under licensed supervision, offered individual FT treatment online using a scripted protocol. Participants were admitted to the study with an Impact of Event Scale—Revised (IES-R) score of >24 . Pre- and posttreatment surveys were collected from 30 participants who each received 6 sessions of individual therapy. No follow-up study data was collected. The IES-R data dropped from a pretreatment mean of 45.97 ($SD = 14.5$, 95% CI = [40.78, 51.16]) to posttreatment mean of 25.33 ($SD = 14.92$, 95% CI = [19.99, 30.67]), with a p -value of $<.00001$ and a Cohen's $d = 1.4$, showed a large effect size. Interpretation of the study results is limited due to a lack of a control group and a relatively small sample size ($n = 30$). Furthermore, since we did not follow participants posttreatment, the impact of the intervention over time is unknown for this study. Even so, the data suggested that the scripted FT protocol might be usable even by inexperienced student clinicians, paving the way for its use as a low-intensity trauma intervention.

Keywords: EMDR therapy; posttraumatic stress disorder; PTSD; trauma; humanitarian response; disaster

Military conflicts in the Middle East, Ethiopia, Somalia, and recently Ukraine, have displaced and traumatized untold millions of people, and there are simply not enough psychotherapists in the world to offer individual trauma intervention to all those who need it (Foa et al., 2013). Eye movement desensitization and reprocessing (EMDR) is a proven trauma treatment. There

are EMDR-based group protocols with which one EMDR-trained therapist can, with the support of nonEMDR-trained licensed clinicians and trained support workers, provide EMDR therapy to many people (Smyth-Dent et al., 2020). However, EMDR requires substantial time and financial resources for training, which poses a barrier to mental health workers supporting those displaced

and traumatized by military conflicts or those without access to conventional trauma interventions. On the other hand, the flash technique (FT) is an individual in-person protocol originally developed for the preparation phase of EMDR and only requires a few hours of training. A possible solution, therefore, may be low-intensity intervention with the FT based on highly scripted instructions in which participants can work on their issues independently, whether online or in person. Toward that end, our study aims to explore a set of scripted instructions for individual online trauma intervention, which can serve as a stepping stone toward the use of FT for low-intensity trauma interventions.

A low-intensity intervention is defined as a treatment with limited face-to-face contact with a mental health professional, such as group therapy, or treatment through self-help computer programs, books, or mental health apps (Maxfield, 2021). Maxfield also conceptualized “the EMDR group therapist as an instructor, providing scripted directions” with “the group participants working quietly and independently on their own materials” (Maxfield, 2021). Furthermore, Maxfield suggested that the same instructions could be provided (a) in a computerized format or (b) with task shifting, that is, by a nonspecialist. EMDR-based low-intensity treatments have been developed over the years to provide affordability and accessibility, and have played an important role in supporting the mental health of victims of natural and man-made disasters, such as refugees displaced by wars. However, while EMDR training is thorough, it is expensive; many mental health professionals working with vulnerable populations do not have the resources to be trained in EMDR—hence the need to find or develop lower-cost alternatives to traditional EMDR, such as low-intensity interventions.

EMDR and EMDR Groups

EMDR was first discovered by Francine Shapiro in the 1980s and was developed into an eight-phased protocol: history taking, preparation, assessment, desensitization, installation, body scan, closure, and re-evaluation (Shapiro, 2018). During EMDR, the client recalls the traumatic memory to be processed while doing bilateral stimulation such as eye movement or tapping, while being directed and supported by a trained EMDR therapist. Processing of the traumatic memory with EMDR tends to be faster than most other

trauma modalities (Mavranouzouli et al., 2020), and clients can even process their memories without disclosing the memories to their therapists (Blore et al., 2013). EMDR is a well-established trauma treatment modality with an extensive system of training for therapists, requiring many hours of training and practicum. Additional training may be required for additional protocols such as the Recent Traumatic Event Protocol (R-TEP) or the EMDR-Integrative Group Treatment Protocol (EMDR-IGTP).

EMDR started out as a high-intensity protocol for individual therapy but soon branched off into low-intensity work in response to natural and man-made disasters. EMDR groups were first developed by the Mexican Association for Mental Health Support in Crisis (AMAMECRISIS) team in response to an overwhelming need for mental health services after Hurricane Pauline in Mexico in 1997 (Jarero et al., 2006). This might be the first reported incidence of using EMDR as a low-intensity intervention for hundreds of children under the direction of a therapist, who was supported by a number of lay counselors and helpers. Since then, it has been formalized as EMDR-IGTP with scripted instructions (Artigas et al., 2009). Recently, EMDR-IGTP has been adapted to treat people with recent, present, or past prolonged adverse experiences, such as long-lasting or ongoing traumatic stress (e.g., patients with cancer; Jarero et al., 2016, 2018). This adaptation is known as the EMDR-Integrative Group Treatment Protocol-Ongoing Traumatic Stress (EMDR-IGTP-OTS). Jarero et al. (2013) have also developed the EMDR-PROPORA, an adaptation for paraprofessional use of the EMDR Protocol for Recent Critical Incidents (Jarero et al., 2011). EMDR-IGTP has a long history of supporting victims of natural disasters and refugees (Adúriz et al., 2009; Jarero & Artigas, 2012; Jarero et al., 2008; Karadag & Karadeniz, 2020; Trentini et al., 2018). Currently, it is being used to support people traumatized and displaced by violence and military conflict in Ethiopia (Abebe & Ashman, 2022).

Another proven low-intensity EMDR intervention is the Group-TEP (G-TEP) which is an adaptation of E. Shapiro’s Recent Traumatic Episode Protocol (R-TEP) (Shapiro & Laub, 2014). The G-TEP (Shapiro & Moench, 2018) is similar to the EMDR-IGTP in its use of drawings and scripted instructions but distinguishes itself with its extensive use of grounding and containment, as well as the use of a worksheet. The G-TEP has been used

for trauma recovery for victims of man-made and natural disasters, such as refugees from the Middle East (Yurtsever et al., 2018) as well as victims of the Camp Fire in Northern California (Hignell, 2019).

Flash Technique and Low-Intensity Flash Technique

The FT was first developed by Manfield et al. (2017) as an individual in-person protocol to efficiently reduce the emotional disturbance of a traumatic memory during the preparation phase (phase 2) of EMDR so that processing can proceed quickly during the desensitization phase (phase 4). As it is currently practiced (Manfield & Engel, 2019), clients only need to identify the distressing memory to be worked on and not dwell on it; they just set it aside. Clients are then asked to focus on something positive and engaging, the positive engaging focus (PEF). The PEF can be a positive memory; a funny music video; talking with the therapist about something fun like a hobby, a special person, or a special trip; or activities such as dancing and singing. It can also be a neutral activity such as slow breathing and body movement (Wong, 2019). Clients blink their eyes quickly 3–5 times when prompted with a cue word such as “flash” or “blink.” Typically, the therapist checks with the client after every five sets of triple blinks to see if there are changes in the image or the emotional disturbance. Most clients experience a rapid decrease in the emotional disturbance of the memory without consciously trying (Manfield et al., 2017; Wong, 2019; Yaşar et al., 2021). In some cases, clients may be able to reduce the level of emotional disturbance of their memory to zero or to a sufficiently low level that it would not be of significant concern. In other cases, EMDR therapists practicing FT as part of phase 2 of EMDR would continue with traditional EMDR to complete the reprocessing of the distressing memory. While EMDR is a well-developed eight-phased protocol that requires many hours of training and practicum for basic training, FT was designed to be part of phase 2 of EMDR, the preparation phase, and requires only a few hours of basic training. EMDR training is not a prerequisite to FT training, which may make FT easier, more accessible, and cost effective for prelicensed student clinicians to obtain training, as part of task shifting for low-intensity trauma intervention. One thing to note is that for low-intensity interventions such as in

FT groups or EMDR-IGTP-OTS groups, the goal is symptom relief; there is no guarantee or expectation that all participants can bring the emotional disturbance of their distressing memory down to zero. FT was used in a group format as a low-intensity trauma intervention at the end of 2017 for a group of five unhoused individuals struggling with substance abuse in a local shelter (Wong, 2019). Since then, low-intensity FT groups have been used with healthcare workers and mental health workers impacted by COVID-19 to work on up to two distressing memories in one sitting (Manfield et al., 2021) in groups as large as 40 individuals. It has also been used in a single group session for 36 individuals impacted by traumatic incidents (Yaşar et al., 2021) and in a three-session randomized-controlled trial (RCT) comparing FT ($n = 34$) with psycho-education ($n = 34$) for victims of traffic accidents (Yaşar et al., 2022). There are scripts already available for use in FT, for both individual and group settings. Currently, clinicians taking FT training may be given scripts eliciting positive memories or positive activities as the PEF (Greenwald, 2022; Manfield & Engel, 2021). However, for our project, we were working with student clinicians with minimal experience, and we, therefore, developed a script using slow breathing and body scan as the PEF. This script was user-friendly because student clinicians could simply read the script and clients did not have to spend time trying to identify a PEF in each session. Furthermore, this script was derived from a script that was effective when used with unhoused persons in a shelter setting (Wong, 2019) and we had hoped it would be effective when used with people in the general population suffering from the impacts of trauma.

To summarize, we have seen a trend/need to take individual EMDR therapy to EMDR group therapy as a low-intensity intervention for man-made and natural disasters (Jarero et al., 2006; Smyth-Dent et al., 2020). We are seeing a similar trend/need to use FT to provide low-intensity trauma intervention for those who cannot afford individual FT trauma work with licensed clinicians (Wong, 2019). Currently, FT interventions (both individual and group) are mostly led by experienced therapists. To understand FT as a low-intensity intervention, we would like to explore the use of a script for online FT individual work. We also want to explore the efficacy of task shifting by having student clinicians do the online individual work. For this research, our

student clinicians used a scripted protocol which was originally developed as a group protocol for homeless clients with substance abuse issues.

Methods

In our study, we explored the use of the FT as a low-intensity trauma intervention administered by social work graduate students at California State University. Our goal was to explore two areas that are important for low-intensity FT intervention. We wanted to explore whether a scripted protocol can be used repeatedly and effectively for individuals with the Impact of Event Scale—Revised (IES-R) scores of 24 or more, which may indicate significant posttraumatic stress disorder (PTSD) symptoms. Secondly, we wanted to explore whether FT intervention can be delivered one-on-one online by student clinicians with minimal experience using the script, thus demonstrating effective task shifting.

Study Design

In this study, nine student clinicians who were trained in FT provided six individual sessions each of telehealth FT to client participants with significant symptoms of posttraumatic stress disorder (PTSD). The student clinicians used the same script with the same PEF for all of the sessions. The client participants filled out a number of psychological surveys pre- and posttreatment to provide a measure of the efficacy of the FT-based telehealth sessions. The recruitment of the student clinicians and the recruitment of the client participants are discussed in the subsequent paragraphs of this section. The script, PEF, and the surveys are also discussed in more detail in the following paragraphs.

This study was reviewed and approved as human subject research by the Institutional Review Board (IRB) for the California State University, East Bay (IRB#: CSUEB-IRB-2021-156). This study was an uncontrolled (nonrandomized) single-arm study with a prepost design. We explored participant improvement posttreatment with measurement of trauma severity, symptom severity, and impact of trauma with study measures at intake (i.e., pretreatment) and after six virtual FT sessions (i.e., posttreatment).

Social Work Student Recruitment and Training.

All clinicians who participated in the study were second-year graduate students in an accredited Masters of Social Work (MSW) program at California State University, East Bay. These students

received FT training via a six-hour virtual workshop and at least four two-hour supervision sessions where students had the opportunity to practice the FT protocol with one another, ask questions, and receive feedback on their delivery of the intervention. Furthermore, students were able to have any ongoing questions or practice concerns about FT addressed in bi-weekly research lab and supervision meetings that extended the entirety of the study period. MSW student clinicians could also contact the principal investigator at any time if they had questions or needed support with the practice and implementation of the FT intervention. We chose second-year MSW students as they are generally more experienced than first-year students in providing face-to-face and virtual psychotherapeutic interventions to clients in their social work community mental health agency practicum settings.

Participation for students was voluntary. MSW students voluntarily consented to participate in the research and to be video recorded. Students were recruited from the FT training course (a one-unit offering to students), and several of the students who received the training elected to not participate in the study at no penalty to them. Student clinicians did receive some direct benefits for their participation in the research: (a) they received training and clinical supervision in the FT over the course of the study and (b) they were allowed and encouraged to utilize data from the study in their Capstone research project, a major requirement of the MSW degree. Aside from being trained in the FT and being a second-year MSW student, there were no other eligibility requirements for student clinicians. Once trained, MSW student clinicians were each assigned up to 6 FT research participants with the goal of each MSW clinician providing a total of 36 sessions or more of the FT intervention (at least 6 sessions for each of the 6 participants assigned to them).

Recruitment and Eligibility of Research Participants With Posttraumatic Stress Disorder Symptoms.

The second set of research participants were the adults who agreed to each receive 6 telehealth (via Zoom) sessions of 30–45 minutes of the FT intervention for trauma. This second set of research participants are community-dwelling adults who were eligible to participate in the study if they were 18 years of age or older and had scores of 24 or higher on the IES-R at intake, which may be indicative of significant PTSD symptoms. These research participants were recruited via email, word-of-mouth, and flyers sent out to the Social

Work Department's mental health field placement agencies and via the Social Work Department's Community Mental Health Advisory Board agency connections. If permission was given via formal consent, the sessions were recorded as well. The clients could still participate in the research study if they did not consent to being recorded.

The Script. The script was a variation of Wong's approach using slow breathing as the PEF in a group for unhoused men struggling with substance issues (Wong, 2019). The current script, originally developed for in-person use with homeless clients, did not use PEFs such as positive memories or engaging videos and might thus be useful for those with few positive memories, folks unable to access positive memories untainted by their trauma, or in situations where the use of personal electronics or the internet might be restricted or not available, such as in some homeless shelters. The script traces its roots to an FT group for folks who tended to dissociate (Wong, 2019); it was designed to keep participants grounded and calm. The protocol was built around two segments of FT with a few add-ons and consisted of six parts: (a) target identification—which technically was a part of FT, (b) grounding, (c) relaxation, (d) first FT segment, (e) identification of negative cognitions, and (f) second FT segment.

1. Target identification. Clients were instructed to “run a video” of their past and to identify distressing memories that they would like to work on in the session. This was basically the same as “running a mental movie” used in EMDR-IGTP (Jarero et al., 2016) for target identification. In this script, clients were instructed to go to their past and not necessarily focus on a recent event.
2. Grounding. Clients were instructed to do four grounding exercises: (a) to sit comfortably in their chair and notice how their body felt; (b) to listen and notice what they heard; (c) to look around the room and notice if they could see any changes; and (d) to feel their mouth to notice if the mouth was wet or dry and to imagine sucking on something sour to increase their saliva. The grounding exercises were based on Elan Shapiro's G-TEP (Shapiro & Moench, 2018). This protocol was to be used by student clinicians who were less likely to have much experience in high-trauma clinical settings, and hence, we emphasized grounding and stabilization to minimize abreaction.

3. Relaxation. The protocol was designed to minimize abreaction including feeling woozy or sleepy, falling asleep, or blacking out. The relaxation section was intended to keep the clients relaxed and also serve as a transition to working on the memory in the first FT segment. Clients were instructed to do bilateral tapping, take a deep breath slowly, and to notice five different sets of parts of the body as they breathed out. Clients were to notice, in order: their neck and shoulder, the back of their head, the crown of their head, forehead and eyes, and finally the face and jaw. The body scan was inspired by Siegel's Wheel of Awareness (Siegel, 2007).
4. First FT segment. The protocol was intended to keep clients calm and relaxed to minimize abreaction. Hence, we used the relaxation exercise as the PEF. We instructed the clients to blink three times rapidly (triple blinks) after breathing in and then to notice various parts of their body as they breathed out, as we did in the relaxation section. After five sets of triple blinks (one set with each noticing of the various parts of their body), clients were instructed to imagine that they could step back and look at the disturbing image of the memory from a distance to see if there was a difference. Additionally, after 3 full sets of 5 (sets of) triple blinks, clients were asked to rate how disturbing the target memory was on a 0–10 scale, that is, the Subjective Units of Disturbance (SUD) score.
5. Negative cognitions. This was done after the third set of five triple blinks (in addition to the elicitation of the SUD score) with the hope that the emotional disturbance of the target memory had been reduced, and participants could take a closer look at the memory without bringing up strong reactions. Participants were presented with a number of examples of negative cognitions to see if the distressing memory was bringing up one or more of the negative cognitions, such as “I am not safe,” “I am unlovable,” “I am guilty/it is my fault,” “I am worthless,” “Something is wrong with me,” “I am powerless,” and “I am full of shame.” Clients were then asked to set aside their negative cognitions and repeat the relaxation exercise to make sure they were calm and relaxed before continuing with the protocol. It should be noted that we typically would not

ask for negative cognitions in FT. However, we made this modification with the hypothesis that the identified negative cognitions would become reminders of various aspects of the distressing memory in the participant's working memory. Since FT can work on more than one memory at a time (Zadurian, 2021), we hypothesized that it might work on all the negative cognitions at the same time to quickly reduce the emotional disturbance of the distressing memory.

6. Second FT segment. Clients were instructed to focus on the slow breathing/body scan PEF—as in the first FT segment—and after every set of five triple blinks to notice any changes in the image of their distressing memory. Participants were then asked for the SUD score after the fourth set of five triple blinks of this segment (i.e., the seventh and last set of five triple blinks of the entire FT treatment session) and to guess what their SUD score was prior to the beginning of the current session of FT treatment.

As mentioned earlier, this script was a variation of Wong's script used in a homeless shelter for substance abusers (Wong, 2019). Our script consists of only seven sets of five triple blinks, and the goal is not necessarily to get the SUD score to zero in each session. With only seven sets of five triple blinks, we are not striving for complete desensitization of the distressing memory. Instead, the goal is overall symptom reduction after six sessions of treatment of up to six distressing memories. Exploring whether or not student clinicians can use this script with efficacy in a one-on-one situation may pave the way for student clinicians to use such a script for group therapy in the future.

Measures

Demographics. We captured a variety of population descriptors in the following demographic measures: gender (open-ended); education attained (some high school, high school graduate or General Education Development Test (GED), some college, college graduate, some postcollege education Master's degree or equivalent, and Doctoral degree or equivalent); marital status (single, partnered, married, divorced, or widowed); employment status (employed part-time, employed full-time, retired, unemployed, underemployed, and student); race/ethnicity (Asian or Pacific Islander, Black or African American, Hispanic or Latino native, American or

Alaskan Native, White or Caucasian, Multiracial or Biracial, and a Race/Ethnicity not listed here); age (year of birth); country of birth (open-ended); year of immigration to the United States (year); veteran status (yes/no); first responder status (yes/no); and experience with homelessness (yes/no).

In this study, we used the following surveys to track the changes in PTSD symptoms, mood, and dissociative symptoms: IES-R, the general anxiety disorder-7 (GAD-7), the Patient Health Questionnaire-9 (PHQ-9), and the dissociative experiences scale-II (DES-II). While the focus of this study is on the reduction of PTSD symptoms, research has shown that depression, anxiety, and dissociation are often comorbid in clients with PTSD (Ginzburg et al., 2010; Spinhoven et al. 2014; Swart et al., 2020). Therefore, in order to have a more complete picture of the mental health of the clients, we included the PHQ-9, GAD-7, and DES-II to provide some measure of the degree of anxiety, depression, and dissociative symptoms, respectively, in our clients.

Impact of Event Scale—Revised. The Impact of Event Scale (IES) was first developed by Horowitz et al. (1979) and later revised by Weiss and Marmar (1997). The IES-R consists of 22 questions covering trauma symptoms such as intrusion, avoidance, and hypervigilance/hyperarousal. Each question is rated from 0–4 for a maximum score of 88. The IES-R is based on PTSD criteria from the *Diagnostic and Statistics Manual of Mental Disorders, Fourth Edition (DSM-IV)* but is still used in the community (e.g., Yaşar et al., 2022). It was chosen based on the authors' familiarity with the instrument and the possibility of tying the data from this project to data collected in other projects. In this project, we used a score of 24 as the threshold for substantial PTSD symptoms to be admitted into the program. We also adopt the IES-R breakpoint of 33 as a marker for severe enough symptoms to raise concern for PTSD. Thus, we sorted the pre- and posttreatment IES-R data into three bins: 0–23, 24–32, and 33–88. Historically, under the *DSM-IV*, an IES-R score of 24–32 would represent symptoms of PTSD or partial PTSD, while a score of 33 and above would suggest probable PTSD. We are adopting the ranges even though the claims of partial PTSD or probable PTSD do not translate over to the *Diagnostic and Statistics Manual of Mental Disorders, Fifth Edition (DSM-5)*.

In terms of validity for the IES-R, psychometric data were collected about 1.5 years after the 1989 Loma Prieta earthquake and a few weeks after the 1994 Northridge earthquake in California (Weiss &

Marmar, 1997). The first set of data was collected from 189 emergency personnel who worked on the I-880 freeway collapse during the Loma Prieta earthquake and 241 controls. The second set of data was collected from 206 workers from 2 insurance companies who were affected by the Northridge earthquake. Data were taken from the 206 subjects again about 6 months later. The internal consistency alphas for both sets of data were high, 0.79–0.87, for the intrusion, avoidance, and hyperarousal subscales, for the I-880 group; and 0.84–0.92 for both times for the Northridge group. The test–retest correlation for the Northridge group was high, 0.89–0.94. The test–retest correlation for the I-880 group was lower, 0.51–0.59, possibly because the data for the I-880 group were taken 1.5–2 years after the incident. Because the IES-R was also validated with data from the Northridge earthquake, a group that was representative of the general population, it is an instrument that can be used by the community at large.

General Anxiety Disorder-7 and Patient Health Questionnaire-9. The GAD-7 (Spitzer et al., 2006) and the PHQ-9 (Kroenke et al., 2001) are, respectively, two validated, brief self-report surveys for the diagnosis of generalized anxiety disorder and depression. The GAD-7 is a seven-question survey with each question rated from zero (not at all) to three (nearly every day). The break points for the scores are 5, 10, and 15, meaning that a score of 0–4 indicates minimal anxiety, 5–9 indicates mild anxiety, 10–14 indicates moderate anxiety, and 15 and above indicates severe anxiety. The PHQ-9 consists of nine questions and is similarly scored. A score from 0–4 indicates minimal depression, 5–9 indicates mild depression, 10–14 indicates moderate depression, 15–19 indicates moderately severe depression, and 20 or more indicates severe depression. Both the GAD-7 and the PHQ-9 were validated by patients from the general population, drawn from clinics across the United States, and thus the two instruments are applicable to the community at large.

In terms of psychometric data (Spitzer et al., 2006), 2,740 adults in 15 primary care clinics in the United States completed the GAD-7. Within the group of 2,740 patients, 965 patients had a phone interview with a mental health professional. For criterion and construct validity, GAD self-report scale diagnoses were compared with independent diagnoses made by mental health professionals based on functional status measures, disability days, and healthcare use. The internal consistency of the

GAD-7 was excellent with an α of 0.92. Test–retest reliability was good with an intraclass correlation of 0.83. Comparison of GAD-7-based scores and those derived from the interviews showed similar results with an intraclass correlation of 0.83.

For validity, the PHQ-9 was completed by 6,000 patients in seven primary care clinics and seven obstetrics–gynecology clinics (Kroenke et al., 2001). Similar to the GAD-7, the criterion and construct validity were assessed against an independent structured interview on 580 patients by mental health professionals, and the thresholds of 5, 10, 15, and 20, representing mild, moderate, moderately severe, and severe depression, respectively, were determined by sensitivity, specificity, and likelihood ratios based on the sample of 580 patients.

Dissociative Experience Scale-II. The Dissociative Experience Scale (DES) was developed by Bernstein and Putnam (Bernstein & Putnam, 1986) as a screening tool for what was then known as multiple personality disorder, now known as dissociative identity disorder (DID). The DES-II (Bernstein Carlson et al., 1993) is an updated and more user-friendly version of the DES. The DES and DES-II are both 28-question surveys normalized to a maximum score of 100. The DES/DES-II was meant to be an effective, low-cost screening instrument in clinical settings for detecting individuals with severe dissociative disorders, particularly multiple personality disorder. However, the DES-II also provides mean scores for various populations and conditions, from adults with and without PTSD and DID. While a therapist would have to do a more in-depth interview to decide on a diagnosis of a dissociative order, one may be able to use changes in DES scores as indicators of changes in dissociative symptoms.

To validate the DES-II in screening for multiple personality disorder (Bernstein Carlson et al., 1993), a discriminant analysis was performed to classify 1,051 subjects from 7 research and clinical centers as having or not having multiple personality disorders. A second discriminant analysis was done using a subgroup of 883 subjects more representative of patients in a psychiatric facility. For the whole group of 1,051 subjects, the DES-II's sensitivity was 76%, and the specificity was also 76%. For the subgroup of 883 subjects that were more representative of psychiatric patients, the sensitivity was 76%, and the specificity was 85%. A cutoff of 30 used in conjunction with Bayer's theorem showed that 17% of the subjects with scores of 30 or more would have multiple personality disorder, while 99% of the

subjects with scores lower than 30 would not have multiple personality disorder. The data indicated that the DES-II performs well as a screening tool for multiple personality disorder. The validation of the DES-II was not based on a particular population, for example, veterans or first responders, and is thus applicable to the general psychiatric population.

Data Collection and Analysis

This study was conducted entirely virtually. Potential participants could call or email to express interest in the study. They were sent study information and an electronic consent form to review and sign. They could also elect to consent to video recording, though this was not a requirement to participate in the study. Following receipt of an electronically signed consent, participants received a request via email to complete the eligibility survey via an online form. These forms went directly to the principal investigator of the study, and none of the MSW student clinicians were aware of or had access to scores prior to the completion of the study. The principal investigator determined eligibility by calculating the IES-R score. Once deemed eligible via the initial screening, participants were then invited via email to complete an electronic pretreatment survey that included additional measures of depression (PHQ-9) and anxiety (GAD-7; described in the “Measures” section). If a participant responded to the PHQ-9 question asking if within the past 2 weeks they “had thoughts of being better off dead or of hurting yourself” with “several days,” “more than half the days,” or “nearly every day,” they received additional resources from the principal investigator on preventing suicide and assisting people who might be struggling with suicidal ideation.

After completing the pretreatment survey, participants were connected with one of the FT-trained MSW student research clinicians, who reached out via email to schedule their first of six virtual FT sessions. FT sessions were generally scheduled weekly based on the mutual availability of the participant and MSW student clinician, mirroring the scheduling of telehealth psychotherapy in community mental health. The MSW clinician notified the principal investigator following the sixth session of FT, at which time the participants were asked to complete a posttreatment survey, which included all the same measures that were completed at intake and in the pretreatment survey, specifically the IES-R, PHQ-9, GAD-7, and DES-II.

Only the principal investigator sent and received the eligibility, pre-, and posttreatment surveys from

the participants. The MSW clinicians did not know the scores at intake, or pre- or posttest for their assigned or any other participants. The survey responses were compiled into one complete dataset that was devoid of any identifying information (unique research participant ID numbers were used to differentiate study subjects and to connect each survey to a specific participant). Once the study was completed, the final deidentified dataset was shared with the research team, including MSW student clinician co-investigators via a shared and password-protected cloud-based drive.

We calculated the mean, standard deviation, and 95% confidence intervals for both pre- and posttreatment results as well as the effect size (Cohen’s *d*). These calculations were done with online statistical analysis tools. In addition, we also performed paired sample *t* tests on the pre- and posttreatment data using Excel to calculate the *p* values (two-tails) to see if there were statistically significant differences between pre- and postdatasets.

Results

Population Demographics

The study population ($n = 30$) was overwhelming female (67% female, 30% male, and 3% nonbinary), White (67% White, 33% people of color [3% American Native, 10% Asian or Pacific Islander, 17% Hispanic or Latino, and 3% Multiracial or Biracial]), educated (87% having at least a college degree and the remaining 13% having at least some college), and employed (80% employed full-time, 13% underemployed, and 7% unemployed), with an average age of 42.2 years. Most participants were married or partnered (46% and 7%, respectively) or single (37%), while a few were divorced (10%). Most participants were born in the United States including one from Puerto Rico (97%) with only one born elsewhere (3%; Thailand). Only one person reported being a veteran (3%). Three participants (10%) had a history of homelessness.

Pre- and Posttreatment Surveys Data

Fifty-five people applied for the program, and 3 were rejected because their IES-R scores were lower than 24, the threshold of admission to our program. Of the 52 people accepted into the program, 31 participants completed 6 online sessions of FT, but only 30 participants in our study provided both pre- and posttreatment survey data. For this section, we

will go over the results of the group of 30 who provided both the pre- and posttreatment surveys.

Response to Treatment

Our dataset had an $n = 30$, and we noticed a reduction in all four posttreatment surveys, suggesting an improvement in PTSD, depression, anxiety, and dissociation symptoms and an overall improvement in mental health, possibly as a result of the six sessions of FT intervention with the student clinicians. In addition, we noticed substantial changes/effect sizes, especially in the reduction of PTSD symptoms and depression symptoms. It is a limitation of this research that with no control group, it is impossible to attribute the results to the intervention with full confidence.

In terms of PTSD symptoms, the group started out with a mean pretreatment IES-R score of 45.97 ($SD = 14.5$, 95% CI = [40.78, 51.16]). The mean posttreatment IES-R score dropped to a score of 25.33 ($SD = 14.92$, 95% CI = [19.99, 30.67]), with a Cohen's d of 1.4, showing a large effect size. A paired sample t test gave a p value of $<.00001$, indicating a statistically significant difference between the pre- and posttreatment IES-R data.

Viewing the IES-R data from a symptom reduction perspective, prior to treatment, the group started out with 7 out of 30 people in the 24–32 range and 23 in the 33–88 range. Posttreatment IES-R showed 14 people, or 46.67% of the group, had IES-R scores of less than 23, below the admission threshold of the program. For the rest of the group, 8 people, or 26.67%, had IES-R scores of between 24–32, and only 8 people, or 26.67%, had IES-R scores of between 33–58. The average change in IES-R score was a 42% reduction from pre- to posttreatment.

In terms of the other surveys, the mean pretreatment PHQ-9 score was 11.57 ($SD = 5.103$, 95% CI = [9.74, 13.4]) showing moderate depression, on average. The mean posttreatment PHQ-9 score

was 7.7 ($SD = 4.36$, CI = [6.14, 9.26]), showing mild depression. Cohen's d was 0.815 showing a large effect size. A paired sample t test gave a p value of $<.00001$, showing a statistically significant difference between the pre- and posttreatment PHQ-9 data.

The PHQ-9 Depression scale is a validated, widely used nine-item tool used to diagnose and monitor the severity of depression. Question nine screens for the presence and duration of suicide ideation and is recommended for use in practice and research as a measure of suicidal ideation (The Joint Commission, 2019; Rossom et al., 2017). Twenty percent of participants reported some level of suicidal ideation (PHQ-9, question nine: “had thoughts of being better off dead or of hurting yourself”) at pretreatment (range of 0–3 with 1, 2, or 3 indicating endorsement of such thoughts). At posttreatment, only 10% of participants endorsed the lowest level (1) of suicidal ideation.

The mean posttreatment scores for GAD-7 and DES-II also followed the same trend. The mean pretreatment GAD-7 score was 10.03 ($SD = 3.89$, CI = [8.64,11.42]) indicating moderate anxiety. The mean posttreatment GAD-7 score dropped to 7.13 ($SD = 4.19$, CI = [5.63, 8.63]) indicating mild anxiety, with a Cohen's d of 0.716, showing moderate effect size and a p value of 0.00125, indicating a statistically significant difference between the pre- and posttreatment GAD-7 data. The mean pretreatment DES-II score was 21.61 ($SD = 1.48$, CI = [16.31, 26.91]), and the mean posttreatment DES-II score decreased to 12.16 ($SD = 13.1$, CI = [7.47, 16.85]), with a Cohen's d of 0.676, showing a moderate effect size and a p value of $<.001$, indicating a statistically significant difference between the pre- and posttreatment DES-II data. The pre- and posttreatment scores for the group are shown in Table 1 and Table 2.

Reviewing the psychological surveys, we see a decrease in PTSD, depression, and anxiety

TABLE 1. Mean Pre- and Posttreatment IES-R, PHQ-9, GAD-7, and DES-II Scores for the Group of 30 Participants

| Whole group, $n = 30$ | Pretreatment | Posttreatment | p value (two tails) | Cohen's d |
|-----------------------|--|---|-----------------------|-------------|
| Mean IES-R | 45.97 ($SD = 14.5$, 95% CI = [40.78, 51.16]) | 25.33 ($SD = 14.92$, 95% CI = [19.99, 30.67]) | $<.00001$ | 1.4 |
| Mean PHQ-9 | 11.57 ($SD = 5.1$, 95% CI = [9.74, 13.4]) | 7.7 ($SD = 4.36$, 95% CI = [6.14, 9.26]) | $<.00001$ | .82 |
| Mean GAD-7 | 10.03 ($SD = 3.89$, 95% CI = [8.64,11.42]) | 7.13 ($SD = 4.19$, 95% CI = [5.63, 8.63]) | .00125 | .72 |
| Mean DES-II | 21.61 ($SD = 14.8$, 95% CI = [16.31, 26.91]) | 12.16 ($SD = 13.1$, 95% CI = [7.47, 16.85]) | $<.001$ | .68 |

Note. CI = Confidence Interval; DES-II = Dissociative Experience Scale-II; GAD-7 = General Anxiety Disorder-7 scale; IES-R = Impact Event Scale—Revised; PHQ-9 = Patient Health Questionnaire-9; SD = standard deviation.

TABLE 2. Pre- and Posttreatment Distribution, Based on IES-R Ranges, for a Group of 30 Participants

| Whole group N = 30 | Pretreatment N | Posttreatment N |
|-----------------------|----------------|-----------------|
| IES-R score 0–23 | 0 (0%) | 14 (46.67%) |
| IES-R score 24–32 | 7 (23.33%) | 8 (26.67%) |
| IES-R 33 or more | 23 (76.67%) | 8 (26.67%) |

Note. IES-R = Impact Event Scale—Revised.

symptoms, as well as dissociation and suicidal ideation, and they all point to an improvement in mental health immediately posttreatment. We also notice the large Cohen's *d* of 1.4 in the IES-R and 0.815 in the PHQ-9, indicating large effect sizes.

Flash Technique Fidelity

Fidelity to the FT model in this study was addressed, and results on adherence to the model are forthcoming, as rating and analyses are in progress. However, we can say that the MSW student clinicians were relying on a script-based model of the FT intervention. Four independent clinician raters will watch and rate (partially completed) a first-session and a sixth-session video for each of the eight MSW student clinicians who provided the study intervention for a total of 16 videos; one MSW student clinician could not provide any FT treatment videos for analysis. Preliminary results from two raters indicate that the students adhered well to a script-based intervention, with initial cursory results showing very little drift over time. The main variation in the video ratings related to the cadence and pace of the clinician delivering the intervention instructions.

Discussion

According to the National Alliance on Mental Illness (NAMI), 3.6% of the U.S. population is affected by PTSD, which amounts to 9 million individuals (NAMI, 2017). Thus, the need for low-cost, low-intensity trauma intervention is needed both in the United States and globally (Kessler et al., 2017). For our study, we used the IES-R as the screening tool for PTSD symptoms. However, the IES-R was developed for the *DSM-IV*. It captures the PTSD symptoms of intrusion, avoidance, and hyperarousal but does not capture symptoms of negative cognition and alteration in mood, which are mentioned

in the *DSM-V*. The PTSD Checklist for *DSM-5* (PCL-5), which was developed for the *DSM-V*, would be a better choice for capturing changes in PTSD symptoms, and we recognize this drawback in our study. Nonetheless, changes in the IES-R score still track with the majority of the PTSD symptoms and provided us with information about the efficacy of our scripted protocol, as practiced by our student clinicians.

From our data, the ranges of IES-R scores dropped from a pretreatment range of 24–74 (mean of 45.97) to a posttreatment range of 3–59 (mean of 25.33), suggesting that even the clients with the highest scores in the group may have been helped by this scripted FT protocol, and resulted in improvements in their PTSD symptoms/scores. As an aside, a study from Japan (Kawamura et al., 2001) has shown that an IES-R score of 37 may result in suppression of the immune system's function even 10 years after a traumatic event. Thus, a drop in the mean IES-R score for the group from 45.97 (pretreatment) to 25.33 (posttreatment) may result in substantial health benefits for the participants. This study on the suppression of the immune system's functioning was based on a small group of 12 male workers with matching controls from a company in Japan and might be applicable to the general population. Moreover, we also note that for 14 participants, their IES-R score dropped to a level between 0–23, lower than the threshold for admission into the study program. Furthermore, with only 6 sessions of FT by this group of 9 prelicensed student clinicians, we have only 8 people in this group of 30 with an IES-R score of more than 33 at the conclusion of treatment, as compared to 23 people at the start of the program. However, these results must be interpreted with caution given the small sample size, lack of a control group, and other study limitations such as lack of follow-up after the end of treatment.

It should be reiterated that the goal of low-intensity intervention is not necessarily to reduce the emotional disturbance of a particular memory to zero. Rather, it is the reduction of PTSD symptoms, as self-reported in the pre- and post-IES-R surveys. The protocol offered clients the opportunity to work on up to six different distressing memories with FT. With the assumption that clients were using their most distressing memories in the pre- and posttreatment surveys, it was possible that the most distressing memory at posttreatment would be different from the most distressing memory at pretreatment. Hopefully, the level of emotional

disturbance of the most distressing pretreatment memory would be reduced during the six sessions of FT treatment. However, these are broad assumptions, more research into the memories participants choose to address via FT, and the reduction in their experienced distress from such memories is needed.

Furthermore, the results of this study suggest that scripted FT intervention was user-friendly enough that even inexperienced MSW student therapists could use it effectively with individuals with significant PTSD symptoms. These study results may, thus, pave the way to address the growing concern about the effects of traumatic experiences on mental health worldwide. However, there are significant barriers to mental health services, and trauma-informed treatments are not easily available to trauma survivors (Kazlauskas, 2017). The potential of alternative means of treatment delivery (including virtual) along with implementing task shifting with less experienced clinicians has been proposed as directions for future developments in the field of trauma treatment (Kazlauskas, 2017; Maxfield, 2021). Our study provides some initial results for both of these proposals. Larger scale studies, including RCTs and studies that explore whether or not the impacts of the intervention hold over time, are needed to explore the efficacy of the FT when delivered virtually by low-experience clinicians. Given our study results, future research should also explore these methods (low-intensity FT with task shifting) via a group modality delivered via both online and in-person locales.

It should be emphasized that our PEF—using slow breathing and body scan—is one of many PEFs that can be used in FT. This PEF does not use positive memories, videos, music, and so forth and can be used in situations where personal electronics are unavailable and for people with few good memories. Other PEFs—such as counting prime numbers or counting numbers forwards or backwards—may possibly be effective in such situations as well. Future research should assess the impact of FT with a variety of PEFs when delivered virtually and with task shifting.

We also want to emphasize that the protocol was meant for inexperienced student clinicians. Our protocol uses FT as the key component for the reduction of emotional disturbance. We then add other features, such as grounding exercises and negative cognitions, not typically done in FT, to make it easier for our student clinicians to practice and to maximize the benefits to the clients.

In our protocol, we chose the PEF (scripted slow breathing and body scan) instead of the client choosing PEFs individually for themselves since the student clinicians may not have the experience to help clients with identifying PEFs. We also chose a PEF that was modified from a group protocol used successfully with substance abusers in homeless shelters and which may work well with most clients (Wong, 2019).

We borrow from EMDR-based group protocols such as the EMDR-IGTP in the target identification and the G-TEP for the grounding exercises. The “running a video” for target identification was meant to give the inexperienced student clinicians the language to help clients to identify their targets. The grounding exercises were meant to give the student clinicians the tools to keep the clients grounded so as to minimize dissociation and other forms of abreaction.

Our protocol also includes the identification of negative cognition from EMDR which is not typically done in FT, in order to maximize the reduction in emotional disturbance. The student clinicians were not trained in EMDR and therefore not expected to continue with the various phases of EMDR or to work on any negative cognitions. We also perceived the negative cognitions as different aspects of the distressing memory and could become related targets. Since FT may be able to reduce the emotional disturbance of multiple targets at the same time (Zadurian, 2021) and based on our own practice with individual clients, we believe clients might be able to work on the negative cognitions as they work on the distressing memory with FT, and clients might be better able to reduce the emotional disturbance of the memory than otherwise. More research is needed to test this idea.

With all the added features, one may question whether this protocol is an EMDR-based instead of an FT-based protocol. However, it should be noted that EMDR and other techniques, such as mindful breathing and counting numbers, rely on dual attention on both the distressing memory and the activity—be it eye movement, mindfulness breathing, or counting numbers—and the reduction in emotionality and vividness of the distressing memory can be explained in the taxing of the working memory (Van den Hout et al., 2001, 2011). On the other hand, clients do not hold on to the distressing memory during FT but would hold only onto the PEF, be it a positive experience or a calming or grounding activity, such as slow breathing and

body scan. The dual attention of bilateral stimulation and focus on the PEF may tax the working memory, but the distressing memory is not part of the dual attention in FT. This is the key difference between EMDR and FT. Even with the added features borrowed from EMDR and EMDR-based group protocols, the crux of our protocol is FT, and it should not be confused with EMDR-based protocols.

In terms of a theory for the mechanism of FT, Wong (2021) proposes that due to over-activation and enhanced connectivity in certain brain structures as a result of PTSD, the client may briefly and reflexively access the distressing memory during the blinking. During that brief access, the amygdala does not have time to react. It is the juxtaposition of a brief access to a distressing memory and the amygdala staying calm (i.e., no fear response) that leads to memory reconsolidation. Wong's model was built from published functional Magnetic Resonance Imaging (fMRI) data from subjects with PTSD as well as well-accepted working memory research dated back to the 1970s. Readers are referred to his paper for details (Wong, 2021).

Our study had a high-dropout rate, similar to other trauma research studies (Kitchiner et al., 2019; Schnurr et al., 2022). Specifically, 52 people were eligible and consented to participate in the study, but only 31 completed the full 6 sessions, a 40% dropout rate. Our dropout rate is similar to Schnurr's study for veterans with PTSD doing prolonged exposure therapy (55.8% dropout rate, initial $n = 455$ with mean attendance of 8.2 out of 12 sessions) and cognitive processing therapy (46.6% dropout initial rate, initial $n = 461$ with mean attendance of 9.1 out of 12 sessions). It should be noted that our study was done online in the 2021–2022 academic year, during the COVID-19 pandemic, while the Schnurr study was completed before the pandemic, by February 2019, and in person. The intention was for the MSW student clinicians to complete six sessions with up to six research participants. In the end, the MSW student clinicians completed six sessions with an average of 3.5 research participants. Furthermore, we also asked our clients for permission to record two online sessions, with the provision that they were not obligated to consent to the recording. The request for recording seemed to pose a barrier, and anecdotally, a number of clients balked at the request and dropped out without starting the program, even though consent to record was not a requirement for study participation. FT is a gentle protocol in

which clients do not have to dwell on their disturbing memory, and it has been well-received by clients, see for example Brouwers et al. (2021). The high dropout rate of this study might not be due to the tolerability of FT itself but due to (a) the inexperience of the student clinicians, (b) the online delivery of the protocol during the COVID-19 pandemic, and (c) restrictions and requirements of the research methodology. Further research is needed to explore participant dropout.

Limitations

There are some significant limitations to this study. For example, there were a limited number of participants who completed the pre- and posttreatment surveys ($n = 30$). The need to replicate with greater numbers of diverse participants is an important next step in pushing the research forward. As discussed above, in our study, 52 people were eligible and consented to participate in the study, but only 31 completed the full 6 sessions, a 40% dropout rate. Premature dropout from psychological treatment for PTSD is common, but little research has explored reasons for dropout or other barriers to treatment in this population (Ferrell et al., 2021). While this may be an unfortunate artifact of the difficulty of treating trauma, more research exploring why people leave trauma treatment is paramount.

As noted in the population demographics, participants in this study were overwhelmingly female, White, educated, and employed. It is important that research be representative of the general population, and more effort is needed in future research to better reflect the diversity of the general population. While the intent of this study was not to generalize to the larger population of those with PTSD, future research should focus on whether or not the effects of FT might be observed in a more representative sample of PTSD patients.

As an exploratory study, there was no control group in this study. Therefore, while our study offers some initial data, it's impossible to attribute the results solely to FT. It is possible that the improvement in trauma symptoms we observed was due to other reasons. There has only been one RCT of FT (Yaşar et al., 2022); FT research is still nascent. This RCT demonstrated that the FT, when applied to persons involved in traffic accidents, was successful in improving anxiety, intrusion, avoidance, total traumatic stress, and mental quality of life symptoms (Yaşar et al., 2022). However, more experimental and

controlled studies, as well as implementation studies, are needed to help guide future research on FT.

As we pointed out earlier, this protocol offered clients the opportunity to work on up to six different distressing memories with FT. It was likely that the memory they worked on by the end of the treatment would be different from the memory they worked on at treatment initiation. We assume clients will naturally choose their most salient/disturbing memory for the pre- and posttreatment IES-R surveys. Deviations in the memory(ies) chosen may introduce uncertainties in the pre- and posttreatment IES-R data. This is a limitation to our measure for PTSD symptom reduction.

Lastly, while our study collected data at pretreatment and immediately following the end of treatment (posttreatment, after the sixth session), no follow-up was done to track the impact of the intervention over time. As a result, little is known about whether or not the reduction in symptoms of trauma, dissociation, distress, anxiety, and depression hold over time following the cessation of the FT intervention. More research in this area is needed.

Conclusion

This study aimed to explore whether or not a low-intensity FT intervention based on highly scripted instructions, in which participants can work on their issues individually, can be effectively delivered by MSW student clinicians. Furthermore, this study explored the possible impact of such an FT intervention on the traumatic and distressing symptoms of community-dwelling adults impacted by traumatic memories.

We have made significant progress in developing FT as a low-intensity trauma intervention. We have demonstrated that a script with a PEF based on slow breathing and body scan has the potential to be used reliably over at least six sessions. The script does not use positive memories or engaging videos as the PEF and thus may be useful for those with few positive memories, or folks unable to access positive memories untainted by their trauma, or in situations where personal electronics and/or the internet are not available. We were able to train a group of nine prelicensed master-level student clinicians on this script for trauma intervention. In turn, this group of student clinicians was able to demonstrate task shifting, that is, that trauma intervention can likely be provided by less-trained student clinicians in lieu of well-trained licensed therapists. Furthermore, using this scripted instruction, the student

clinicians were able to help 30 clients reduce their PTSD symptoms with a large effect size. While the student clinicians in this study were not leading groups, we now have scripted instructions that could potentially be administered by student clinicians in low-intensity trauma intervention groups to bring FT to those who may not have the resources for individual trauma therapy.

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