EFT (Emotional Freedom Techniques) Remediates PTSD and Psychological Symptoms in Veterans: A Randomized Controlled Replication Trial

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Abstract

Posttraumatic stress disorder (PTSD) is a common condition among veterans and is often regarded as treatment-resistant. Emotional Freedom Techniques (EFT) combines brief exposure therapy with acupressure and has demonstrated efficacy for PTSD in other trials and meta-analyses. This study recruited 58 veterans who scored 50 or greater on the military PTSD checklist (PCL-M), indicating clinical symptom levels. Participants were randomized into a Treatment As Usual (TAU) wait-list group (n = 26) and an experimental group (n = 32), which received six one-hour EFT sessions in addition to TAU. The mean pretreatment PCL-M score of participants was 66 ± 7.4, with no significant difference between groups. The EFT group demonstrated a significant reduction in PCL-M score from 65 ± 8.1 to 34 ± 10.3 ($p < 0.001$), while subjects in the TAU group showed no significant change. The TAU group was then treated with EFT and groups were combined for analysis using linear mixed effects modeling. In the combined EFT group, posttreatment PCL-M scores declined to a mean of 34 (–52%, $p < 0.001$). Participant gains were maintained at three and six-month follow-up, with mean six-month PCL-M scores of 34 ($p < 0.001$). Psychological conditions such as anxiety and depression also declined significantly, as did physiological markers of insomnia and pain. An effect size of Cohen's d = 3.44 indicates a large treatment effect. These results replicate those obtained in an earlier investigation, and indicate that EFT is an evidence-based practice that is highly effective at reducing symptom severity in veterans with PTSD.

Keywords: veterans, PTSD, memories, resiliency, trauma, EFT, Emotional Freedom Techniques

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Posttraumatic stress disorder (PTSD) is common amongst military veterans (e.g. 30% lifetime incidence amongst Vietnam War Veterans: Gradus, 2017) and is often regarded as difficult to treat. Typical treatment programs tend to include a combination of psychoeducation, trauma-focused Cognitive Behavior Therapy (CBT), and the teaching of coping strategies. A review of trauma-focused therapies for PTSD found that Cognitive Processing Therapy (CPT) and prolonged exposure are the most widely studied treatments for military-related PTSD (Steenkamp, Litz, Hoge, & Marmar, 2015). The UK's National Institute for Health and Care Excellence (NICE) recommend Eye Movement Desensitization and Reprocessing (EMDR), as well as trauma-focused CBT, in their clinical guideline for PTSD (NICE, 2005). In recent years, several studies have examined the application of Emotional Freedom Techniques (EFT), a brief exposure therapy combining cognitive and somatic elements (Bullough, 2012; Church, 2013; Feinstein, 2012), as a treatment for PTSD (Church, 2010; Church, Piña, Reategui, & Brooks, 2012; Church, 2014; Church, Yount, Rachlin, Fox, & Nelms, 2016; Gurret, Caufour, Palmer-Hoffman, & Church, 2012; Sebastian & Nelms, 2016; Karatzias, et al., 2011; Nemiro & Papworth, 2015; Al-Hadethe, Hunt, Al-Qaysi, & Thomas, 2015) and also in disaster relief (Feinstein, 2008; Church, 2013, pp. 303–328). A recent meta-analysis (Sebastian & Nelms, 2016) found seven randomized controlled trials of EFT for PTSD that met the criteria for the American Psychological Association Division 12 Task Force on Empirically Validated Therapies, showing an overall high effect size of Cohen's *d* of 2.96.

There are a number of procedural components in Clinical EFT (Church, 2013). Key traumas that have contributed to the patient's symptoms are identified, along with his or her thoughts and beliefs about these. Emotions and bodily sensations are also noted. As the significant traumatic memories, with accompanying emotions and cognitions, are gradually addressed in a carefully graded approach, the client is guided to tap on a series of points on the body (acupressure points, or acupoints) that are found to have a calming or desensitizing effect. The recall of traumatic memory is accompanied by a statement of self-acceptance, along with precise words mirroring those used by the client in describing his or her emotions, beliefs, and experience. Components of EFT are found in other psychotherapeutic approaches (Benor, 2014), but a review and meta-analysis (Church, Stapleton, Feinstein, Gallo, & Yang, 2016) considering six dismantling studies (Wells, Polglase, Andrews, Carrington, & Baker, 2003; Waite and Holder, 2003; Fox, 2013; Rogers & Sears, 2015; Reynolds, 2015; Church & Nelms, 2016) indicates that tapping on the bodily points is a significant therapeutic ingredient.

EFT is part of a broader genre of therapeutic approaches that has been termed Energy Psychology (Gallo, 1999), which has been shown, in a systematic review of 42 studies, to have wide application (Boath, Stewart, & Carryer, 2012), perhaps through the capacity of these methods to modify the biochemistry of stress (Church, Yount, & Brooks, 2012) and gene expression (Church, Yount, Rachlin, et al., 2016; Maharaj, 2016). Reports on the outcomes of Energy Psychology methods (e.g., Feinstein, 2012) have been both criticized and defended; see, for example, critical accounts by Gaudiano, Brown, and Miller (2012) and Bakker (2013) and rebuttals of these by Sise, Leskowitz, Stein, and Tranguch (2014) and Feinstein (2014). One meta-analysis of 18 randomized controlled trials of EFT published in peer-reviewed journals found that EFT has a therapeutic effect (Gilomen & Lee, 2015), and another meta-analysis of 14 trials meeting criteria developed by the American Psychological Association's Division 12 Task Force on Empirically Validated Treatments found an overall effect size of 1.23 (Clond, 2016). EFT and related methods of Energy Psychology have been found compatible with established psychotherapeutic frameworks (Mason, 2012), including cognitive and behavioral (Benor, 2014) as well as psychoanalytic (Mollon, 2008, 2014).

A Prior Randomized Controlled Study of EFT for Veterans with PTSD

Church, Hawk, et al. (2013) reported a randomized controlled study of the psychological symptom improvement of veterans with PTSD who completed six sessions of Emotional Freedom Techniques (EFT). The veterans, who met the clinical criteria of PTSD as measured by the posttraumatic checklist–military (PCL-M), a 17-item scale corresponding to the symptoms

of PTSD (National Center for PTSD, 2016; Weathers, Litz, Herman, Huska, & Keane, 1993), were randomly assigned to an EFT group ($n = 30$) or a Standard of Care Wait List (SOC/WL) group ($n = 29$). The SOC/WL and EFT groups were compared before and after the intervention (at one month for the SOC/WL group and after six sessions for the EFT group). Measures included both the PCL-M and the Symptom Assessment 45 (SA-45), a short form of the Symptom Checklist (Davison et al., 1997; Maruish, 1999). The EFT subjects had significantly reduced psychological distress ($p < 0.0012$) and PTSD symptom levels ($p < 0.0001$) after the test. In addition, 90% of the EFT group no longer met PTSD clinical criteria, compared with 4% in the SOC/WL group. After the wait period, the SOC/WL subjects received EFT. In a within-subjects longitudinal analysis, 60% no longer met the PTSD clinical criteria after three sessions. This increased to 86% after six sessions for the 49 subjects who ultimately received EFT, and remained at 86% at three months and at 80% at six months.

These results appear superior to those typically obtained with psychological or pharmacological treatments of PTSD. For example, in their review of five RCTs of Cognitive Processing Therapy with 482 patients and four RCTs of prolonged exposure with 402 patients, Steenkamp and colleagues (2015) found that 49% to 70% of participants showed "clinically meaningful symptom improvement" of 10–12 point decrease in symptoms, but that mean posttreatment scores remained at or above the clinical criteria for PTSD, and that 60% to 72% of participants retained their diagnosis of PTSD following treatment. By contrast, the Church, Hawk, and colleagues (2013) study found that only 10% to 20% of the veterans still merited the diagnosis of PTSD following treatment with EFT. Similar positive results were found in the other six studies covered in the meta-analysis of EFT for PTSD by Sebastian and Nelms (2016).

A Replication Study

In view of these positive results, a replication study was undertaken, closely following the methodology and measures of the first study as recommended in recent guidelines (Brandt et al., 2014). Some of the therapeutic practitioners were the same as in the first study. None of the investigators or the participants was the same, while the office of the National Institute for Integrative Healthcare, a nonprofit charity, was the central depository for the data, as it was for the Church, Hawk, et al. (2013) study.

The parameters of this second study were almost identical to the first, with the exception that prospective participants who had scored at risk for personal harm or harm to others were not included in the first study, whereas in the replication study, those with scores on the SA-45 for those two categories were eligible to receive treatment by phone or video link. In this study, 58 veterans were randomized into the experimental group ($n = 32$) or the 30-day treatment as usual (TAU) wait-list group ($n = 26$) and the data for these two groups were compared. In the experimental group, 27 participants completed six sessions of EFT, and 22 TAU participants completed two assessments 30 days apart. As in the first study, scores on all measures were significantly reduced for the treatment group and were substantially the same for the TAU group. After the 30-day treatment-as-usual period, the TAU group participants were invited to receive EFT. Data from the two groups were then combined for a longitudinal analysis of symptoms over time.

Method

Participants were 58 veterans, recruited as part of a study of PTSD, who scored 50 or higher on the PCL-M. A score of 35 or higher represents heightened PTSD risk in a military population, and 50 or higher is regarded as a clinical cut-off point on this scale. Randomization was performed by permuted block allocation (randomizer.org). Participants were recruited via referrals and social media, and provided informed consent. The initial number recruited was 169. Of these, 21 were found not to meet the inclusion criteria and 90 declined to participate. Of the 58 participants, 51 were male and 7 were female.

The study was planned around the APA Division 12 criteria for research that provides empirical support for a therapy (Chambless & Hollon, 1998): these are: (1) a randomized controlled trial; (2) adequate sample size to detect statistically significant differences; (3) clearly defined population, identified through valid and reliable measures; (4) reliable and valid outcome measures; (5) a clear treatment manual; and (6) provision of sufficient

data concerning the study itself. The nature of the study did not permit the criterion of being double blind. It followed the CONSORT guidelines for adequate reporting of randomized clinical trials (www.consort-statement.org).

The study was approved by the Institutional Review Board (IRB) of the American Association for Acupuncture and Bioenergetic Medicine (AAABEM) and registered on clinicaltrials.gov (NCT01117545). The study was funded by private individual donations to the nonprofit National Institute for Integrative Healthcare.

Measures

The same measures were used as the first study (Church, Hawk, et al., 2013), all of which have been shown to be reliable and valid.

Posttraumatic Checklist–Military (PCL-M). This is a 17-item self-administered questionnaire, closely corresponding to the PTSD symptoms identified in the DSM-IV (National Center for PTSD, 2016; Weathers, Litz, et al., 1993; Dobie et al., 2002; Bliese et al., 2008; Wilkins, Lang, & Norman, 2011). Each of the 17 symptoms is rated on a 5-point scale and the symptoms relate to the three symptom clusters of PTSD: reexperiencing; numbing and avoidance; and hyperarousal. The military version is linked to stressful combat experiences and is a government document in the public domain (Weathers, Huska, et al., 1991). PCL-M scores of 50 or higher are considered in the clinical range.

Symptom Assessment 45. The SA-45 (Davison et al., 1997; Maruish, 1999) is a list of 45 symptoms that the respondent is asked to rate on a scale of 1 to 5. It has subscales measuring nine conditions: anxiety, depression, hostility, interpersonal sensitivity, obsessive-compulsive behavior, paranoia, phobic anxiety, psychoticism, and somatization. T-scores based on normed data for nonclinical populations are calculated. Scores higher than 60 are considered in the clinical range. The assessment also has two global scales: Global Severity Index (GSI) and Positive Symptom Total (PST). These measure the severity (GSI) and breadth (PST) of psychological symptoms.

Insomnia Severity Index. Insomnia, a frequent accompaniment of PTSD (Lamarche & De Koninck, 2007) was assessed using the Insomnia Severity Index (Bastien, Vallières, & Morin, 2001; Savard, Savard, Simard, & Ivers, 2005). This questionnaire has five items concerning difficulties falling asleep, staying asleep, waking early, satisfaction and worry about sleep, the view of others regarding the respondent's sleep, and interference with daily function. Severe clinical insomnia is defined as a score of 22 or higher; scores between 15 and 21 are defined as moderately severe clinical insomnia, and scores between 8 and 14 are considered subthreshold.

Health History Questionnaire. A questionnaire was used, as in the first study, to obtain health and demographic information. This included questions about physical health, lifestyle, and use of alcohol, tobacco, and recreational drugs. It also contained an item asking respondents to rate their current experience of somatic pain on an 11-point Likert scale (0–10).

Participant Characteristics

Baseline differences between EFT and TAU groups on demographic variables and primary outcome measures (GSI, PST, and PCL-M) were assessed using *t*-tests for continuous variables and chi-square analyses for categorical variables (see Table 1). There were no significant differences between the groups on sociodemographic characteristics or primary outcome measures on intake. The sample ($N = 58$) had more males (88%) than females, with a mean age of 50 years (range, 23–85 years). All participants scored 50 or higher on the PCL-M at screening, and on baseline testing the mean score was 66 (range, 47–80); the range is less than the cut-off of 50 because one subject qualified for inclusion by scoring 50 or higher on intake screening, and then had a reduction in score when baseline pretreatment testing was administered. Symptom severity (GSI) scores ranged between 58 and 84, with a mean of 75, whereas symptom breadth (PST) ranged between 59 and 85, with a mean of 73.

There were some differences between the participants in this study and the earlier (Church, Hawk, et al., 2013) study. In the first study, over half were Vietnam veterans; and in the second study, one third were Vietnam veterans. The average age in both groups was 50–51, but the spread of ages was wide. The youngest veterans in both studies were age 25, but the oldest veteran in the first study (age 86) served in World War II and the oldest veteran in the second study (age 85) served in Korea.

Table 1. *Participant Characteristics by Group Before Intervention*

Variable	EFT (*n* = 32)	TAU (*n* = 26)	Total (*n* = 58)	Statistic	p
Age, mean (SD), yrs	50 (15.3)	50 (15.1)	50 (15.1)	t(51.92) = –0.06	0.950
Men, n (%)	26 (81)	25 (96)	51 (88)	$X^2(1) = 3.00$	0.083
Treatment medications, mean (SD)	4.1 (4.2)	3.3 (2.9)	3.8 (3.7)	t(46.85) = 0.80	0.430
Any exercise, n (%)	27 (84)	20 (77)	47 (81)	$X^2(1) = 0.15$	0.695
Any smoking, n (%)	8 (25)	5 (19)	13 (22)	$X^2(1) = 0.18$	0.667
Any alcohol, n (%)	13 (41)	13 (50)	25 (43)	$X^2(1) = 0.81$	0.368
Any drug use, n (%)	7 (22)	4 (15)	11 (19)	$X^2(1) = 0.30$	0.587
Insomnia				$X^2(3) = 5.71$	0.126
Severe, n (%)	9 (28)	15 (58)	24 (41)		
Moderately severe, n (%)	13 (41)	7 (27)	20 (34)		
Subthreshold, n (%)	7 (22)	2 (8)	9 (16)		
None, n (%)	3 (9)	2 (8)	5 (9)		
PCL-M, mean (SD)	66 (7.1)	67 (7.8)	66 (7.4)	t(51.52) = –0.63	0.533
GSI, mean (SD)	75 (5.5)	75 (6.1)	75 (5.7)	t(50.75) = –0.19	0.848
PST, mean (SD)	73 (7.1)	73 (6.8)	73 (6.9)	t(0.50) = 0.15	0.878

Note: GSI = global severity index; PCL-M = PTSD Checklist–Military version; PST = positive symptom index.

Procedure

Participants received six one-hour office or telephone sessions or televideo conferencing calls. EFT was administered according to *The EFT Manual* (Craig & Fowlie, 1995; Church, 2013). All 13 practitioners were certified in EFT and were instructed to use only EFT in the therapy. Some were life coaches and some were licensed mental health practitioners (six coaches, one licensed mental health counselor; one licensed professional counselor; one licensed clinical social worker; two psychotherapists; and two practitioners with psychology PhDs). Stein and Brooks (2011) found that EFT provided by coaches trained in the method was as effective as that provided by licensed mental health practitioners.

Participants were asked to compile lists of traumatic emotional events, and these were used as guidance to the appropriate targets of EFT. These included military events such as witnessing a friend being shot and killed, shooting an enemy combatant, and being caught in an explosion—experiences that can give rise to traumatic stress, along with feelings of guilt, anger, and despair. Some participants found this hard to do because of the inherently aversive nature of traumatic military experiences, but the EFT practitioners would work with whatever traumatic events the participants felt able to bring. In general, the less intense emotional events would be addressed first, allowing the participant to gain trust and confidence in the process. The participant's cognitions and somatic sensations would be noted and addressed as intrinsic components of the EFT process.

Emotional intensity relating to the traumatic memories was self-rated on a Likert scale from 0 to 10, with 10 being maximal emotional intensity and 0 minimal. Whether administering EFT in-office or via telephone or televideo, practitioners guided participants in using EFT until the self-reported intensity of each memory, and its cognitive and somatic components, was reduced. Participants were also encouraged to use EFT between sessions to reduce intensity of distress. Participant distress typically diminished to at or near 0 for items on the list of traumatic memories. However, not every memory on the participants' initial lists could be addressed, partly for reasons of time, partly because of the participant's choice of priority, and partly because the most relevant emotional issues might emerge during the process of the EFT work rather than being determined in advance.

Data from the TAU group after the start of treatment were combined with data from the EFT group, and the two groups analyzed in combination. Participants completed assessments before the first session, after the third and sixth session, and at three- and six-month follow-up intervals. Participants randomized into the TAU group (n = 25) completed an additional assessment 30 days prior to the commencement of treatment.

Numbers of participants at various stages. Of the original 58 participants, some withdrew at various points in the study. In the TAU group (n = 26), four subjects withdrew after screening, two withdrew after pretreatment testing, two withdrew after three sessions, six subjects were lost to three-month follow-up, and two subjects were lost to six-month follow-up. In the EFT group (n = 32), five subjects withdrew after three sessions, seven subjects were lost to follow-up at three months, and nine subjects were lost to follow-up at six months. The reasons provided by the participants were shortage of time and lack of interest in continuing treatment. Thus 43 participants completed the treatment, 30 participants completed the treatment *and* three-month follow-up, and 24 of these completed the six-month follow-up. The numbers included in each stage of the process are shown in the CONSORT flowchart.

The total number of participants included in the analysis was 49. In the TAU group, all those who had the 30-day prior assessments and pretreatment assessments were included, as that was the control period. For the group allocated to EFT, in order to meet the criteria as a treatment group, only those who had completed six sessions of EFT were included. After the 30-day wait period, the TAU group participants were then invited to receive EFT treatment and the data were combined. In the combined data, results are shown after three sessions (as well as after six sessions) for those in the EFT group who had completed all six sessions, as well as for the TAU group who had completed three sessions.

The participants reported no adverse experiences resulting from the study.

Results

Comparison of the TAU vs. the EFT Group Before and After Treatment

Statistical approach. Statistics were calculated using SPSS version 17.0. Because of the number of SA-45 scales, a Bonferroni correction for multiple tests was used to calculate an adjusted alpha level (p = 0.0045). Linear mixed-effects models were conducted on the PCL-M total score and SA-45 global scales and symptom domains, with patient-specific intercepts modeled over time. Participant groups were compared at two time points (TAU: pretreatment, 30-day wait assessment; EFT: pretreatment, after six sessions). Group, time, and the group-time interaction were independent variables.

Statistical analysis. The results of the before and after treatment comparison analyses are presented in Table 2. The F test and p values shown in Table 2 are for the group x time interaction, comparing the changes over time in the TAU group compared to the EFT group. Comparing TAU to EFT, there was a significant treatment effect in PCL-M, GSI, PST, anxiety, depression, obsessive-compulsive behavior, phobic anxiety, hostility, and insomnia after Bonferroni correction to an alpha = 0.0045 to account for multiple testing. Somatization, interpersonal sensitivity, paranoia, and pain were significant at the level of alpha = 0.05 but were not significant after Bonferroni correction.

Comparing EFT pretest to EFT posttest, reductions in PCL-M, GSI, PST, anxiety, depression, interpersonal sensitivity, insomnia, and pain were significant after Bonferroni correction at the $p < 0.0045$ level. Reductions in obsessive-compulsive behavior, phobic anxiety, hostility, and paranoia were significant at the $p < 0.05$ level. Comparing EFT posttest to TAU posttest, EFT scores were significantly lower for all items except for interpersonal sensitivity, psychoticism, and insomnia. Comparing TAU pretest to TAU posttest, there were no significant differences in any measure.

At the end of 30 days, 91% (20 out of 22) TAU subjects still met clinical PTSD criteria (equal to or above 50) on PCL-M. In the EFT group after six treatment sessions, only one of the 27 subjects met clinical PTSD criteria (3.7%).

Comparison of the Combined TAU and EFT Group After EFT Treatment—Change Over Time

Statistical approach. Linear mixed-effects models were conducted on the PCL-M total score, the SA-45 global scales and symptom domains, pain, and the ISI total score with patient-specific intercepts modeled over periods (pretreatment, after three sessions, after six sessions, at

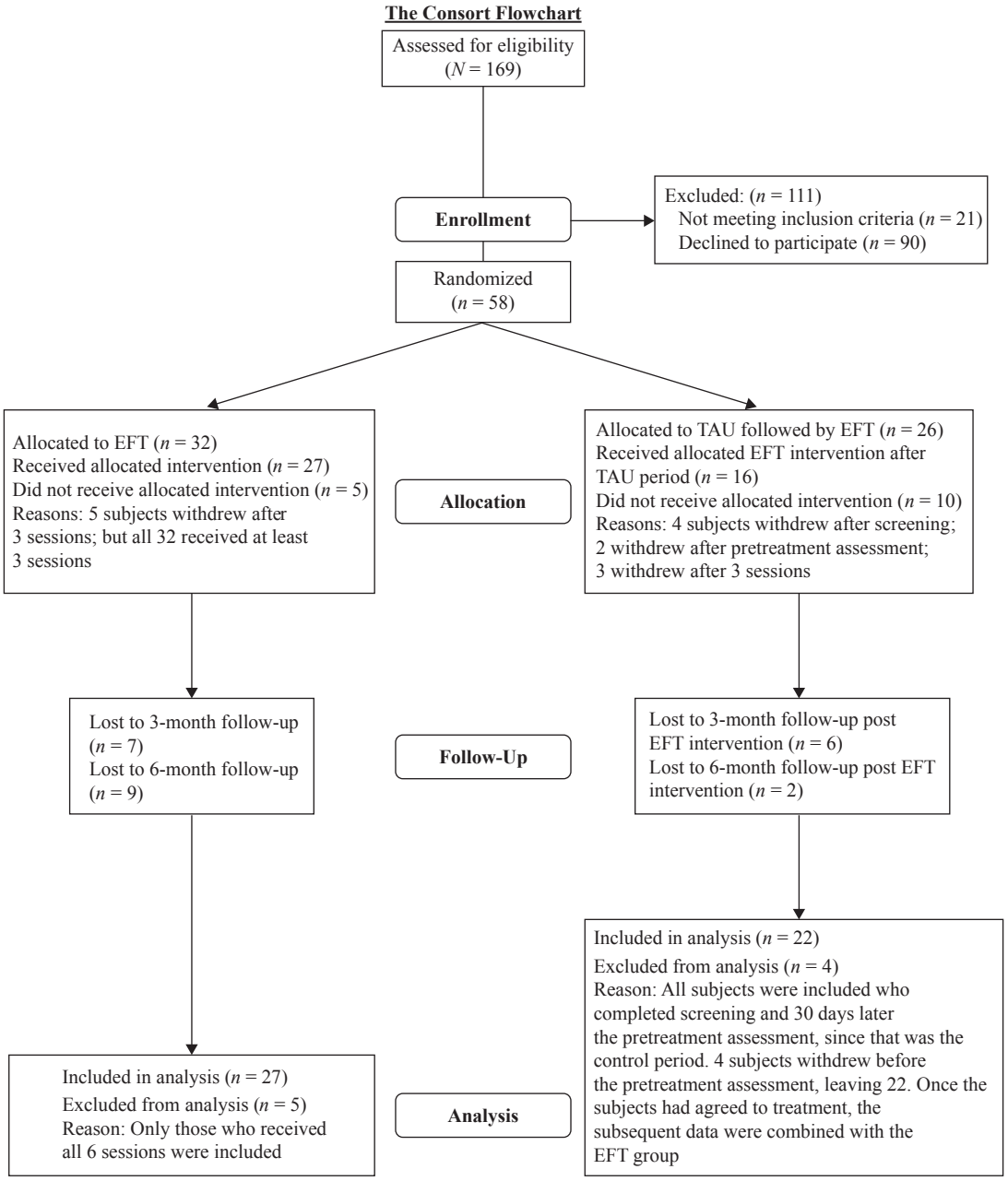


Figure 1. CONSORT flow diagram.

three-month follow-up, and at six-month follow-up). Time between sequential assessments was controlled for in the model to adjust for the possible effect of time caused by the intervention delay in the TAU group. Because of the number of SA-45 scales, a Bonferroni correction for multiple tests was used to calculate an adjusted alpha level ($p < 0.0045$) for the main effects (group and time) and interaction (group x time) in each model. All subjects with at least two data points were included in the analyses ($n = 49$), since they showed effects over time.

Statistical analysis. There was a significant main effect for assessment time point in all of the SA-45 models, the PCL-M total model, the pain model, and the ISI total model (Table 3). There was no significant difference in treatment result between the group treated immediately and the

Table 2. *Subject Symptom Means and Standard Deviations Before the Test and After Six Sessions for EFT Completers (*n = *32) and at Baseline and After 30 Days for TAU Completers (*n = *22)*

Variable	TAU		EFT		F (1,55)	p
	Pretest	After 30 days	Pretest	After 6 sessions		
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)		
PCL-M total	67 (7.8)	63 (10.4)	65 (8.1)	34 (10.3)[a,b]	63.37	<0.001*
SA-45 global scales						
GSI	75 (6.1)	74 (6.4)	75 (5.6)	60 (8.6)[a,b]	29.14	<0.001*
PST	73 (6.8)	72 (6.9)	73 (6.8)	62 (9.1)[a,b]	12.04	0.001*
SA-45 symptom domains						
Anxiety	76 (6.0)	74 (7.0)	77 (7.7)	63 (9.5)[a,b]	14.50	<0.001*
Depression	73 (6.1)	72 (6.9)	72 (5.0)	61 (6.3)[a,b]	23.29	<0.001*
OC	76 (5.7)	74 (4.8)	73 (6.4)	63 (8.2)[a,b]	17.21	<0.001*
Somatization	70 (10.7)	68 (11.2)	69 (9.0)	57 (6.8)[a,b]	7.47	0.008
Phobic anxiety	77 (8.1)	76 (6.8)	76 (7.5)	67 (6.3)[a,b]	15.00	<0.001*
Hostility	68 (7.6)	68 (8.3)	67 (9.2)	56 (5.8)[a,b]	12.31	0.001*
IS	68 (8.8)	66 (9.2)	70 (6.9)	60 (7.4)[b]	7.50	0.008
Paranoia	68 (8.8)	66 (10.6)	67 (7.3)	57 (6.8)[a,b]	6.62	0.012
Psychoticism	67 (7.5)	66 (7.4)	66 (7.8)	61 (6.5)[b]	2.56	0.11
Insomnia	20 (6.1)	19 (7.5)	18 (5.7)	9 (6.3)[b]	9.48	0.003*
Pain	5.0 (3.2)	4.0 (3.1)	6.0 (2.7)	3.0 (2.2)[a,b]	3.94	0.051

Notes: GSI = global severity index; IS = interpersonal sensitivity behavior; OC = obsessive-compulsive; PCL-M = PTSD Checklist–Military version; PST = positive symptom index; SA-45 = Symptom Assessment 45.
[a]EFT posttest lower than TAU posttest, $p < 0.0045$. [b]EFT posttest lower than EFT pretest, $p < 0.0045$. *After Bonferroni correction, group-time interaction indicates significant effect of treatment $p < 0.0045$.

group treated after the waitlist period. Significant improvements between the pretreatment assessment and each subsequent assessment were found in each model. After three treatment sessions, there was a significant reduction in PTSD symptom scores on the PCL-M, SA-45 category and summary scores, and insomnia severity scores compared to pretreatment scores. After six sessions, there was a significant reduction in all scores compared to scores at pretreatment as well as scores after three sessions. Score reductions were maintained at three-month and six-month follow-ups. No significant differences were detected between scores after six sessions and follow-up scores after three months and six months, indicating durable improvements.

To determine effect size for PTSD symptom reductions, Cohen's *d* was calculated for PCL-M and found to be $d = 3.44$; Hedges' *g* effect size for the PCL-M was found to be 1.62, with a 95% confidence interval from 0.93 to 2.3. These effect sizes are considered to be large. At six months, 21 out of 23 subjects (95%) no longer met clinical criteria for PTSD based on PCL-M score equal to or above 50. Table 4 provides a visual representation of the changes in pooled means scores on the PCL-M and the global scales and symptom domains of the SA-45, before and after six sessions of EFT.

Discussion

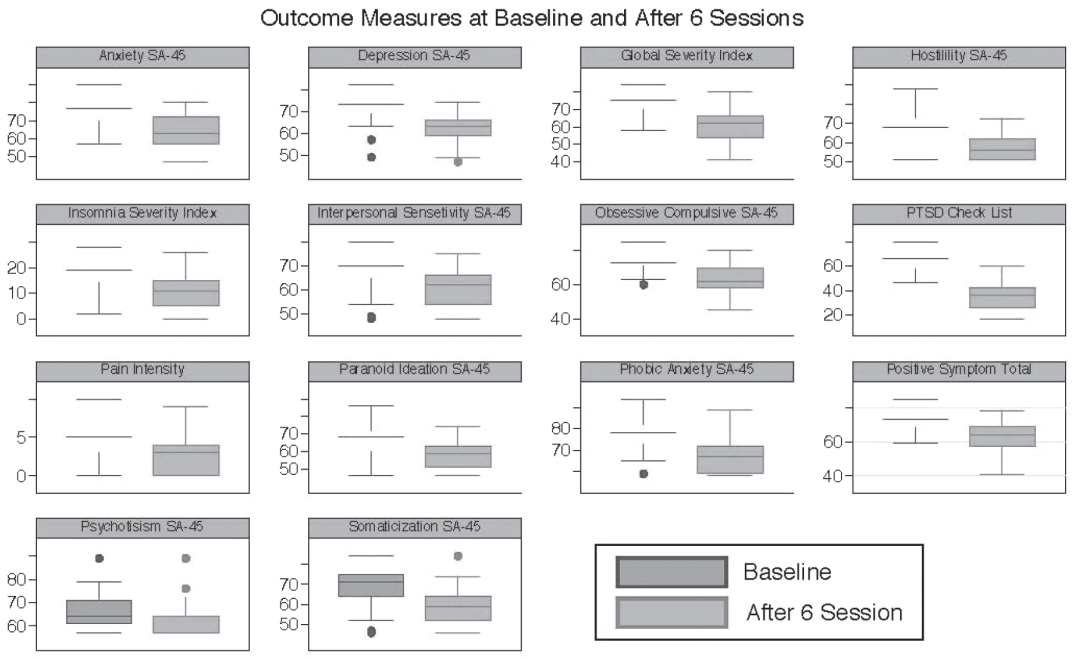
Replication of research is an important component of cumulative scientific knowledge (Brandt et al., 2014; Schmidt, 2009). Without replication, there remains doubt as to the generalizability of the reported findings. Despite their importance, relatively few replication studies are reported (Makel, Plucker, & Hegarty, 2012). When replication is attempted, it often fails, or the results often fall short of the original reported effects (Open Science Collaboration, 2015). The need for

Table 3. *Time Main Effects, Mean (Standard Deviation), for Both EFT and Posttest TAU Combined*

Variable	Pretest	3 sessions[a]	6 sessions[b]	3 months	6 months	F (4,141)	p
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)		
PCL-M total	65 (9.0)	45 (13.1)	34 (10.9)	34 (10.9)	34 (13.4)	192.09	<0.001*
SA-45 global scales							
GSI	74 (5.9)	66 (7.8)	61 (9.1)	60 (10.6)	61 (9.7)	78.36	<0.001*
PST	73 (6.8)	68 (7.8)	63 (9.1)	62 (10.6)	62 (10.6)	37.55	<0.001*
SA-45 symptom domains							
Anxiety	76 (7.5)	68 (10.0)	64 (9.8)	62 (9.9)	62 (9.8)	40.71	<0.001*
Depression	72 (5.7)	64 (7.2)	61 (7.6)	61 (8.2)	60 (7.8)	58.12	<0.001*
OC	74 (5.8)	67 (8.6)	63 (8.1)	63 (9.4)	65 (8.8)	64.17	<0.001*
Somatization	69 (9.8)	63 (8.1)	58 (8.6)	59 (9.6)	59 (10.4)	32.21	<0.001*
Phobic anxiety	76 (7.2)	70 (7.1)	67 (7.2)	67 (7.3)	69 (7.5)	48.27	<0.001*
Hostility	67 (8.8)	61 (8.9)	57 (5.6)	58 (7.8)	58 (7.4)	46.58	<0.001*
IS	68 (8.0)	63 (8.0)	60 (7.7)	61 (7.9)	60 (7.9)	23.61	<0.001*
Paranoia	66 (8.7)	61 (9.4)	57 (7.7)	58 (8.6)	58 (7.3)	33.02	<0.001*
Psychoticism	66 (7.6)	62 (6.2)	61 (6.3)	60 (4.1)	60 (5.8)	10.82	0.002*
Insomnia	18 (6.4)	14 (6.8)	10 (6.3)	10 (7.3)	9 (7.1)	32.05	<0.001*
Pain	5 (2.9)	4 (2.7)	3 (2.4)	3 (2.7)	3 (2.6)	16.76	<0.001*

Notes: GSI = global severity index; IS = interpersonal sensitivity behavior; OC = obsessive-compulsive; PCL-M = PTSD Checklist–Military version; PST = positive symptom index; SA-45 = Symptom Assessment 45.
[a]Scores after three sessions are significantly lower than scores at pretest after Bonferroni correction $p < 0.001$. [b]Scores after six sessions are significantly lower than scores at pretest after Bonferroni correction $p < 0.00004$. *Score change at six month follow up is significantly lower than pretest after Bonferroni correction $p < 0.002$.

Table 4. *Pooled Means, Showing Changes in the Measures After EFT Treatment*



replication of studies of EFT is particularly important since the reported therapeutic effects are both large and rapid, yet the procedure itself can evoke skepticism (Feinstein, 2009).

This study closely replicated the Church, Hawk, et al. (2013) trial of EFT as a treatment for PTSD in veterans, again finding that six sessions of EFT alleviated most symptoms of PTSD in the participants. The improvements appeared stable and durable, showing no significant reduction at three months or after six months. Most participants no longer reached the threshold for PTSD following treatment with EFT. Table 5 summarizes the comparison. The effect sizes, both Cohen's *d* and Hedges' *g*, were large.

These results are consistent with other studies of the effects of EFT on PTSD. Sebastian and Nelms (2016), in their meta-analysis of seven randomized controlled trials, found that EFT is efficacious and reliable as a treatment for PTSD in time frames ranging from four to ten sessions.

A notable additional benefit of EFT is its gentle and nontraumatizing nature. Despite being a form of exposure therapy, its inherent procedural

Table 5. *Comparison of the Church et al. (2013) Study and the Replication Study*

Church et al. 2013	**The present study**
R**andomized controlled trial:** EFT vs. SOC/TAU; the SOC/TAU group then given EFT after a wait. The two groups were combined for follow-up analysis	Identical method
Subjects: veterans with symptoms of PTSD *N* = 59 (30 allocated to EFT, 29 to SOC/TAU)	Veterans with symptoms of PTSD *N* = 58 (32 allocated to EFT, 26 to SOC/TAU)
EFT practitioners: 14 total: 7 licensed mental health practitioners, 7 coaches	13 total: 2 licensed mental health practitioners, 2 PhD psychologists, 2 psychotherapists, 6 coaches, 1 licensed clinical social worker
Measures used: PCL-M, SA-45, ISI, Health/Lifestyle questionnaire	Identical measures
Excluded: subjects at risk of harm to self or others	All were included who met the criteria. Those at risk of harm received EFT coaching by televideo
Intervention: 6 EFT coaching sessions	6 EFT coaching sessions
Control comparison: SOC/TAU	Control: SOC/TAU
Measures taken at: (1) pretreatment, (2) after 3 sessions, (3) after 6 sessions, (4) 3-month follow-up, and (5) 6-month follow-up	Identical time point measures
Outcome: 90% of EFT group no longer met criteria for PTSD, compared to 4% of SOC/TAU. Mean score of combined subjects on the PCL-M dropped from an initial 64.40 to 37.31 after EFT ($p < 0.0001$) Significant reductions in psychological distress ($p < 0.0012$)	96% of the EFT group no longer met the criteria for PTSD, compared to 9% of the SOC/TAU. Mean score on the PCL-M of combined subjects dropped from an initial 65.00 to 34.00 after EFT ($p < 0.001$) Significant reductions in psychological distress ($p < 0.001$)
Follow-up: Symptom reductions were largely maintained. At 6 months, 86% no longer met the criteria for PTSD	Symptom reductions maintained. At 6 months, 95% no longer met the criteria for PTSD
Effect sizes: *d* = 1.93	Cohen's *d* effect size for changes in PCL-M: 3.44 Hedges' *g* effect size is 1.62

components are designed to minimize reexperiencing of the physiology of anxiety as the memory narratives of the client's trauma are approached (Bullough, 2012; Flint, Lammers, & Mitnick, 2005; Mollon, 2008, 2014). Thus, EFT shows promise as a treatment for PTSD that is both effective and safe.

Although the therapeutic intervention in this study was conducted by trained and certified practitioners of EFT, working in accord with *The EFT Manual* (Church, 2013), it should not be assumed that EFT is a simple formula-bound procedure. There are many components to the method, including strategies to minimize the client's distress and to enable a gradual approach to his or her most severe traumatic memories. It is guided by the free-associative flow of the client's thoughts, beliefs, memories, emotions, and bodily sensations. Tapping on acupoints appears not only to be calming, but also to facilitate this free flow of cognitive, emotional, and sensory-somatic material (Mollon, 2008).

Although the observer of EFT might gain the impression that "tapping" is the core component, this would obscure the clinical reality that the practitioner is attending closely to the contents of the client's mind and words and physiological responses. All these cognitive, emotional, and somatic components are targeted with EFT by using carefully selected words and phrases mirroring those used by the client.

This requires considerable skill and attunement to the client. While there may be an overall aim to address a list of traumatic memories, the practitioner must take account of what is foremost in the client's thoughts and emotions, and work with the inherent psychodynamics that lead both toward and away from trauma in an approach-avoidance conflict. Clients with PTSD will always tend to be fearful of recalling their worst traumas since these threaten to evoke overwhelming emotions, such as intense anxiety, anger, shame, and guilt. A core dilemma in working with PTSD is that the client's traumatic memories need to be addressed if he or she is to recover, but to do so will present a danger of retraumatization and worsening of symptoms (Mollon, 2005). The practitioners in this study worked to maximize the gentle and nontraumatizing nature of EFT, beginning with the less intense material to enable the client to develop increasing trust in the method, with ensuing feelings of safety—and no adverse results were reported.

Limitations of the Study

Perhaps for the reasons heretofore described, a common observation amongst those who seek to undertake research with military veterans is that recruitment of volunteer subjects is difficult, with many refusing to participate, and the drop-out rate is high (Imel, Laska, Jacupcak, & Simpson, 2013). Initially, the researchers had hoped to recruit many more participants. In future studies, a larger sample size would be desirable. Diagnosis of PTSD by a clinician in addition to the data from the PCL-M and SA-45 scales would increase the diagnostic validity of the sample. Comparison with another active psychological treatment commonly used for PTSD, such as CBT or EMDR, would help provide data on comparative effectiveness.

Conclusion

The present study replicated that of Church, Hawk, et al. (2013), providing further confirmation that Emotional Freedom Techniques, an exposure method with somatic and cognitive components, can be effective in alleviating the symptoms of PTSD. It is notable that the positive results closely paralleled those of the original study, showing a marked diminution in symptoms that proved stable over time. Most participants no longer met the criteria for PTSD following the intervention. The speed and effectiveness of EFT in substantially reducing a wide range of symptoms, combined with its gentle nature, point to its potential contribution in the treatment of the large numbers of veterans suffering from PTSD. This replication study provides further support for the position of EFT as an evidence-based practice for alleviating PTSD.

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