

Single Session Reduction of the Intensity of Traumatic Memories in Abused Adolescents: A Randomized Controlled Trial

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Abstract

The population for this study was drawn from an institution to which juveniles are sent by court order if they are found by a judge to be physically or psychologically abused at home. Sixteen males, aged 12 – 17, were randomized into two groups. They were assessed on the Impact of Events scale (IES), which measures two components of PTSD: intrusive memories and avoidance symptoms. The experimental group was treated with a single session of EFT (Emotional Freedom Techniques), a brief and novel exposure therapy that has been found efficacious in reducing PTSD and co-occurring psychological symptoms in adults, but has not been subject to empirical assessment in juveniles. The wait list control group received no treatment. Thirty days later subjects were reassessed. No improvement occurred in the wait list (IES total mean pre=32 SD \pm 4.82, post=31 SD \pm 3.84). Posttest scores for all experimental group subjects improved to the point where all were non-clinical on the total score (IES total mean pre=36 SD \pm 4.74, post=3 SD \pm 2.60, $p < 0.001$), as well as the intrusive and avoidant symptom subscales. These results are consistent with those found in adults, and indicates the utility of single-session EFT as a fast and effective intervention for reducing psychological trauma in juveniles.

Keywords: adolescents, PTSD, memories, affect, trauma, EFT (Emotional Freedom Techniques).

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Introduction

EFT (Emotional Freedom Techniques) is one of a group of therapies collectively referred to as energy psychology (EP). Energy psychology has been used to treat traumatic stress in various groups, and is establishing itself as an evidence-based treatment for posttraumatic stress disorder (PTSD), depression, anxiety, phobias, and other psychological disorders (Feinstein, 2008a). EFT has been shown to normalize EEG patterns in traumatized subjects (Lambrou, Pratt, & Chevalier, 2003), and to successfully treat accident victims with PTSD (Swingle, Pulos, & Swingle, 2004). EFT lowers PTSD symptoms in war veterans, with subjects typically going from clinical to subclinical levels (Church, Hawk, Brooks, Toukoulehto, Dinter, Wren, & Stein, 2009; Church, 2009a; Church, Geronilla & Dinter, 2009).

One characteristic of clinical reports of EP therapies in highly traumatized populations is the parsimony of application required to obtain reductions in symptoms. Studies of veterans with traumatic stress typically use six sessions (Church, Geronilla & Dinter, 2009; Church et al, 2009). Reports of adults in disaster zones also typically employ a single-session protocol (Johnson, 2000; Green, 2002). A study of children successfully treated with EP also used a single session (Sakai, 2007). Carbonell and Figley (1999) reviewed recently-developed therapies for trauma, and found EP interventions efficacious in attenuated time frames. A review of the use of EP in natural and human-caused disasters (Feinstein, 2008b) noted the frequency of success with single session protocols.

Several institutions, including the American Psychiatric Association, Britain's National Institute for Clinical Excellence (NICE), and the US Veterans Administration, have investigated the efficacy of various therapies for PTSD. Meta-analyses have found EMDR (eye movement desensitization and reprocessing), CBT (cognitive behavior therapy), and exposure therapy to be effective (Seidler & Wagner, 2006; Bradley, 2005; NICE, 2005; van Etten & Taylor, 1998; Benedek, Friedman, Zatzick, & Ursano, 2009; Institute of Medicine, 2006/2007). EFT employs brief forms of certain components of these therapies that have demonstrated efficacy, such as cognitive restructuring and exposure. To these it adds a somatic component, having therapists or subjects tap with their fingers on prescribed acupuncture points while cognitive statements are made. The

somatic stimulation of acupuncture points during exposure to traumatic memories is observed to have a calming effect, and to reinforce cognitive change (Feinstein, 2009). The stimulation of acupuncture points by pressure alone, without using needles, has been shown to be as efficacious as needling in a randomized controlled trial (Cherkin, Sherman & Avins, 2009). Acupuncture stimulation has been shown to reduce fear and pain in the limbic system of the brain as measured by MRI screening (Dhond, Kettner, & Napadow, 2007). Hui (2000) found acupuncture to send fear-dampening signals directly to the amygdala.

Other hypothesized mechanisms of action of EFT include boosting the production of serotonin (Ruden, 2009), and activation of stress-dampening genes in the hippocampus and hypothalamus (Church, 2009b), especially regulatory genes such as EGR-1 and C-fos which are activated during stressful experiences (Sabban & Kvetnansky, 2001; Davis, Bozon & Laroche, 2003). LeDoux (2006) describes the “hostile takeover of consciousness by emotion” as the threat-assessment machinery of the limbic system is activated during the recall of traumatic events. Yet when stressful past memories are recalled, they are not reinstated in their existing form. Instead, they are reconsolidated to include cues from the proximate environment (Davis, Bozon & Larouche, 2003; LeDoux, 2002). If the environment contains therapeutic cues from EP treatment, memories may be reconsolidated without their past ability to trigger hyperarousal of the amygdala (Lane, 2009). A greater reduction in affect is noted with interventions that include somatic stimulation than those that do not (Baker, Carrington & Putilin, 2009; Waite & Holder, 2003).

EFT is a simple method that has subjects pair the memory of a highly traumatic event (exposure) with a statement of self-acceptance. A typical example might be, “Even though my father hit me when he got drunk after my seventh birthday party...” (exposure) “I deeply and completely accept myself” (cognitive shift). After describing the traumatic incident, and formulating the statement, the subject repeats the statement while tapping prescribed acupuncture points. Emotional distress is self-assessed using a Likert-type scale from 0 to 10, called Subjective Units of Distress or SUD (Wolpe, 1973). EFT sometimes brings SUD down to 0 with a single application, but several “rounds” of EFT may be required. Progress is client-rated using SUD scores. When SUD is 0, this

indicates no client distress associated with the traumatic memory.

EFT was developed by Gary Craig in the early 1990s as a brief form of an earlier EP method called Thought Field Therapy or TFT (Callaghan, 2000). It is administered in a uniform manner though a free downloadable manual, also available in print (Craig, 2008). EFT has been shown to reduce a range of psychological disorders including phobias, anxiety and depression (Rowe, 2005, Wells, Polglase, Andrews, Carrington & Baker, 2003; Church & Brooks, 2009). In *EFT for PTSD*, Craig (2009) summarizes clinical procedures and research findings for using EFT as a treatment for traumatic stress.

Van der Kolk (2007) has emphasized that recall of traumatic memories may retraumatize a client. This danger is minimized with EFT and other EP methods (Mollon, 2008); clients typically report a steady reduction of distress. For this reason, therapists often choose EP when dealing with emotionally charged memories (Flint, Lammers & Mitnick, 2005; Schulz, 2009). Reduced affect is noted with EFT even when highly traumatized clients recall memories so emotionally evocative that they have been reluctant to access them before (Church, 2009a; Mollon, 2007). These characteristics make EFT a suitable candidate for empirical investigation with populations of traumatized adolescents and children.

Method

Subjects were confined to the St. Joseph's House ("Hogar San Jose") residential treatment refuge in Trujillo, Peru. The institution is one to which children are sent by a judge if their parents or guardians have a history of sexual, physical, or psychological abuse, or abandonment or negligence of their children. At the time of the study, there were 51 children in residence. Inclusion criteria were: male; ability to understand IES instructions, age 12 to 17, and a history of physical, psychological, or sexual abuse, or parental abandonment or negligence. Exclusion criteria were: organic or neurological conditions; clinical psychiatric diagnoses, and concurrent pharmacological treatment. The director of the institution identified 16 of his wards as subjects for the study based on these inclusion and exclusion criteria. Ethical review was performed at Cesar Vallejo University, and approval was granted by the departmental head of the Psychological

Training Center. Informed consent and permission to conduct the study was obtained from the director of St. Joseph's House, who was also the legal guardian of the subjects.

The investigators randomly assigned subjects into two groups of 8 each. The experimental group received a one hour single session of EFT from either the second or the third author. The control group did not receive any intervention. Control participants completed the baseline assessments and returned in one-month for the follow-up assessment. Assessments and treatments took place in the same location at the institution for both groups. Data was scored subsequently, offsite and blind, by a biostatistician. EFT was administered with fidelity to the Spanish translation of the EFT manual (www.emofree.com), and included a supplemental EFT procedure called the Nine Gamut technique, which is intended for bilateral stimulation of the brain. The investigators had also trained with other psychologists in EFT, and their clinical supervisors monitored fidelity to the method during training sessions. The investigator providing the intervention asked the child to recall the most troubling specific incident of abuse.

An EFT method called the Movie Technique was used. The subject imagines the traumatic incident as though it were a movie with a start, finish and end. The subject then gives the movie a title. The subject associates the movie with a SUD level. EFT is then performed, and the subject-rated SUD level is reassessed while recalling the movie. If the SUD has not gone down, EFT is repeated till SUD is at or near zero. The purpose of the movie technique is to focus the client on a specific event, and avoid generalization of distress to other times and incidents. The purpose of the movie title is to provide the subject with a brief reminder phrase to keep the distressful incident in memory while the acupressure points are being tapped.

Subjects were assessed using the IES or Impact of Events Scale (Horowitz, Wilner & Alvarez, 1979). This scale has been validated for the Spanish language (Báguena, Villaroya, Beleña, Díaz, Roldán, & Reig, 1998). The IES is sub-divided into an Intrusive Symptoms scale (items 1, 4, 5, 6, 10, 11, 14) and an Avoidance Symptoms scale (Items 2, 3, 7, 8, 12, 13, 15), and also yields a total score. The IES sub-scales measure intrusive symptoms (reliving the memory of the traumatic event in an intrusive manner), and avoidance symptoms (avoiding remembering the traumatic experience, avoiding

connecting to emotions associated with that experience, and avoiding similar situations related to the original trauma).

The IES is often used to diagnose PTSD symptoms, though was first published in 1979, a year before the DSM-III first formalized PTSD as a diagnostic category. It has 15 items, each rated on a scale from 0-5: Never (0); rarely (1); sometimes (3), or often (5). The scoring scale is: 0 – 8 (Sub-clinical), 9 – 25 (Mild), 26 – 42 (Moderate), 43 or more (Severe). A score of 26 - 42 (Moderate) indicates that an event has had a powerful impact, and scores 43 or higher indicate an impact so severe that the ability to function may be affected. A score of 27 or more indicates a 75% likelihood of a PTSD diagnosis, with a number of PTSD symptoms (Coffee & Berglind, 2006). A score of 35 indicates a probable diagnosis of clinical PTSD (Neal, Walter, Rollins, et al, 1994). The results of the subjects' IES tests are reported below.

Results

Data was received for 16 male subjects, 8 in the control group and 8 in the experimental. Ages ranged from 12 – 17 with an average age of 13.9 years old. There was no significant difference in age between the two groups. All participants scored in the “moderate clinical” range on the IES total. Participant IES scores ranged between 27-42, with an average score of 34.2 (SD \pm 5.4). There was no statistically significant difference between the groups at baseline on the IES total ($t(14)=1.71$, $p<0.11$), intrusive memories subscale ($t(14)=0.35$, $p<0.73$), and avoidance subscale ($t(14)=1.93$, $p<0.07$), demonstrating similar prognostic indicators at baseline. Posttest administration of the IES occurred one month after pretest. In the experimental group the initial SUD level ranged from 7 to 9 with an average SUD level of 8.25 (SD \pm 0.71). The number of EFT rounds ranged from 2 to 4, with an average of 2.87 rounds (SD \pm 0.41), with the final SUDS level ranging between 0-1 with an average of 0.25 (SD \pm 0.46).

To examine change over time in the IES total and subscale scores between the two groups, a repeated measures general linear model was conducted. Posthoc Tukey tests were conducted on significant findings. The time by group interaction was statistically significant ($p<.001$) for the IES total and both subscales. Statistically significant differences were found in the posthoc analyses for all three IES variables. The

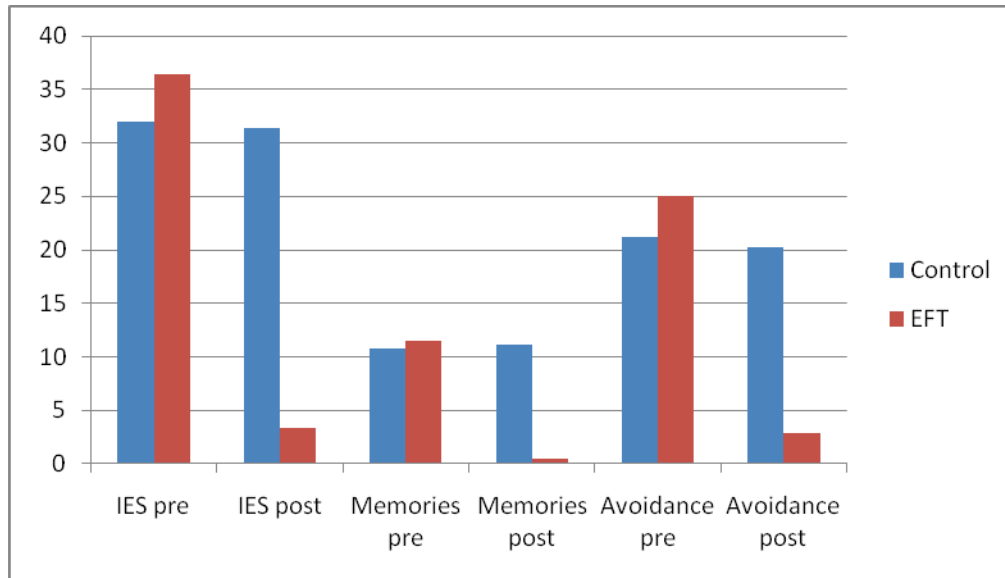
experimental group demonstrated a statistically significant decrease in distress on the IES total and both subscales following the intervention as seen in the decrease between the pretest and posttest scores. In addition, the experimental group's posttest was significantly lower than the posttest for the control group on each of the IES variables. There was no difference between the pretest and posttest for the control group indicating that distress levels had not changed from baseline. Furthermore, all participants in the control group were still in the "moderate clinical" range on the IES at posttest, with scores ranging from 27 to 40, while none of the participants in the experimental group scored in the clinical range at posttest, with scores ranging between 0 and 7. Thus the observed results were both statistically and clinically significant. The IES total and subscale scores for experimental and control groups are presented in Table 1 and Figure 1 below.

Table 1. IES Total Score, Memories, and Avoidance Subscales Pre- and Posttest Means and Standard Deviations by Treatment Group

IES Scale	Control		Experimental		F(1,14)	Sig
	Pre-test	Posttest	Pre-test	Posttest		
IES Total	32.00 ±4.82	31.38 ±3.84 ^a	36.38 ±4.74 ^a	3.38 ±2.60 ^b	240.68	p<0.001
Memories	10.75 ±3.70	11.13 ±2.93 ^a	11.50 ±4.24 ^a	0.50 ±0.50 ^b	36.25	p<0.001
Avoidance	21.25 ±3.83	20.25 ±2.38 ^a	25.00 ±3.43 ^a	2.88 ±2.62 ^b	159.30	p<0.001

a>b, p<.001

Figure 1. IES Total Score, Memories, and Avoidance Subscales Pre- and Posttest Means by Treatment Group



No adverse events, or increase in participant distress, were reported in the present study. After data analysis, the investigators recommended to the director of St. Joseph's House that the control group also receive EFT.

Case Histories

The investigators encountered a range of traumatic experiences common to subjects, and the following anecdotes represent a sampling of these qualitative reports.

Case History 1:

Lorem ipsum

Case History 2:

Lorem ipsum:

Discussion

The literature airs different opinions as to whether PTSD can be remediated. Some reviews state that PTSD should be regarded as an intractable condition such as dissociative identity disorder (Johnson, Fontana, Lubin, Corn, & Rosenheck, 2004). Vasterling and Brewin (2005) found that PTSD produces neurological changes that make it treatment-resistant. Other hold out hope for a cure (Foa, Keane, & Friedman, 2000). A review by the Institute of Medicine cited a study by Monson et al (2006) as a hopeful sign that PTSD can be remediated. Studies of highly traumatized war veterans have also

found them to test PTSD-negative on average after EFT sessions (Church, 2009; Church et al, 2009). The current study supports the position that PTSD may be successfully treated. The benefits of successful trauma treatment do not benefit just the individual; they radiate outward to produce positive effects on families and communities (McFarlane & van der Kolk, 1996/2007). Epidemiological research has shown untreated childhood emotional trauma to correlate highly with diseases in adults, including cardiac events, hypertension, cancer, diabetes, smoking, and depression (Felliti, Koss, & Marks, 1998). The benefits of early treatment of childhood trauma thus extend over time, and encompass both the psychological and physical health of the individuals and communities affected.

There were two cases in the current study in which the child's SUD level was not reduced to 0. In one of these, the child stated that he would need to meet the stepmother who had neglected him face to face, to test whether or not whether the memory still affects him (at present the stepmother does not visit him). In the second case, the child stated that he would need to receive an apology from his father, who had physically abused him, in order to put the memory behind him.

The investigators delivering the intervention noted a phenomenon called the Apex Effect (Craig, 2008). The Apex Effect, described for three decades in clinical reports of EP interventions, is that after EP treatment, the subject typically forgets how intense the emotionally triggering event was before treatment. Clinical observation of the Apex Effect is one reason that SUD levels are noted before and after treatment. A concurrent cognitive shift by subjects, from a victim point of view, to an observer's point of view, is typical.

The current study had a number of limitations. It did not test EFT against a placebo intervention such as a supportive interview, to determine the effect of nonspecific factors such as sympathetic attention found in a therapeutic alliance, plus expectancy effects. However, no literature exists to suggest that nonspecific and expectancy effects can remediate trauma to the extent found in this study. It also did not test EFT against efficacious methods such as exposure and cognitive therapies. Monson (2006) employed cognitive behavior therapy with war veterans. After treatment, 40% of the sample no

longer tested positive for PTSD. These other methods have thus been found to reduce trauma, though again, not to the degree found in this study. In addition, both this study and Monson used a one month follow-up, and it is unknown if these results hold over greater periods of time, though Feinstein (2008a) notes in a review of EP research that in every study employing a long-term follow-up, for periods of up to one year, participant gains are maintained to a statistically significant degree.

The study did also not formally diagnose subjects as having PTSD, and were based on self-report rather than observer-rated measures. However, children's self-report of PTSD symptoms on the IES has convergent validity with observer-rated diagnoses of PTSD (Horowitz & Sundin, 2002; Shemesh, Newcorn, Rockmore, Shneider, Emre, Gelb et al, 2005). In order to encourage client-centered approaches, self-rating methodologies are encouraged (Glasgow, Magid, Beck, Ritzwoller, & Estabrooks, 2005). An extension of this study would use observer-rated assessments in addition to client-rated evaluations, to determine whether the correlations found in other published literature is maintained.

Conclusions

In the current study, 16 institutionalized male children with intrusive memories and avoidant symptoms were evaluated using the Impact of Events Scale (IES). After randomization, the experimental group of 8 subjects was treated with a single session of EFT (Emotional Freedom Techniques). The control group did not receive treatment. After one month, the two groups were reassessed. All members of the EFT group no longer reported intrusive or avoidant symptoms, and their total scores on the IES had normalized. There was no change in the group that received no treatment. All results were statistically significant, indicating that EFT may be an effective treatment for trauma in juveniles. Further research is needed to determine if these effects hold over greater periods of time, how they compare to a placebo or active comparator, and whether client-rated assessments agree with observer-rated ones.

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