A narrative systematic review of the effectiveness of Emotional Freedoms Technique (EFT)

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Abstract

EFT (Emotional Freedom Technique) is a new and emerging energy psychology. This narrative systematic review aimed to identify and assess the quality of all published randomised controlled trials (RCTs) of EFT in order to: evaluate the effectiveness of EFT in treating a range of psychological disorders and to compare the effectiveness of EFT with other interventions used for treating those disorders. Methodology: A literature search was carried out of CINAHL, Cochrane Library, MEDLINE, PsycINFO, PsychARTICLES, Proquest, PubMED, Sciencedirect, SPORTdiscus, Swetswise, Web of Knowledge, Web of Science and ZETOC, using the key terms EFT and energy psychology. Calls for published, unpublished and ongoing RCTs of EFT were sent to Newsletters and to the Association of Energy Psychology and the Foundation for Epigenetic Medicine. Contact was made with researchers and practitioners in the field. Conference proceedings and reference lists of retrieved articles were hand searched. Abstracts of articles were reviewed and full copies acquired if they title and/or abstract identified the paper as an RCT of EFT. Two authors independently rated and assessed the quality of each trial using the Critical Appraisal Skills Programme (CASP) for randomised controlled trials and the Jadad Scale. Results: The search strategy identified a total of 42 published studies of EFT. Seven RCTs of EFT were included. Methodological flaws in the studies are highlighted and discussed. EFT was shown to be effective in treating Post Traumatic Stress Disorder (PTSD), Fibromyalgia, Phobias, test anxiety and athletic performance. EFT was shown to be superior to diaphragmatic breathing (DB), Progressive Muscular Relaxation (PMR), an inspirational lecture and a Support Group. Only Eye Movement, Desensitization and Reprocessing (EMDR) was superior to EFT. EFT may be an efficient and effective intervention for a range of psychological disorders. Given the methodological limitation of these RCTs, further good quality research on EFT is warranted

Inclusion criteria

All published randomised controlled trials of the effectiveness of EFT were considered for the review.

Exclusion criteria

Unpublished RCTs of EFT, ongoing RCTs of EFT, RCTs of TFT or other energy therapies and research that used other methodologies were excluded from this review.

Data Analysis

Two authors (EB and TS) independently rated and assessed the quality of each trial using the Jadad Scale (Jadad et al, 1993). This is a commonly used scale that rates the quality of RCTs that ranges from 0-5 with 5 demonstrating the highest quality. The Critical Appraisal Skills Programme (CASP) for randomised controlled trials (Public Health Resource Unit, 2011) was also used to assess trials.

Background

EFT (Emotional Freedom Technique) which is also known as tapping, is a new and emerging energy psychology technique (Craig, 2011). It is a gentle therapy that can be administered by a therapist and that can be easily taught and self administered (Karatzias, 2011). It involves the client tapping gently with their fingertips on traditional acupressure points on the face, the upper body and the hands, while at the same time focussing on a particular event or memory and relating this to the voicing of specific statements (Craig, 2011).

Research to date has indicated that EFT has been used in treating a variety of conditions including phobias and fears (Lambrou et al 2003; Wells, 2003; Salas 2010; Waite & Holder, 2003), fibromyalgia (Brattberg, 2008), test anxiety (Benor et al, 2009; Sezgin & Ozcan, 2009) presentation anxiety (Boath et al., in press), post traumatic stress disorder (Karatzias et al., 2011) and a wide range of other conditions.

A review of the preliminary evidence for EFT and Thought Field Therapy (TFT) the predecessor of EFT (Callaghan & Trubo, 2001) was carried out by Feinstein (2008) and included a range of evidence from anecdotal reports to randomized controlled trials and highlighted the preliminary nature of the existing evidence base. However, Feinstein's review also included TFT. TFT uses different tapping algorithms for specific psychological conditions, whereas EFT uses the same 12 tapping points, the 'basic recipe', to treat every emotional problem (Craig, 2011). EFT also has a detailed manual (Craig, 2011) that has allowed for standardised treatment protocols to be used across different research studies. The efficacy claims made by Feinstein have been criticised by McCaslin (2009 and by Pignotti and Thyer (2009) who question the selection of studies in Feinstein's review, the lack of specific inclusion and selection criteria and other aspects of the review methodology. These criticisms, combined with the differences between TFT and EFT, the expanding use of EFT within clinical settings, along with the growth of research in EFT justifies a further review.

Herbert and Gaudiano (2005) recommend that any study using 'any lesser methodology than a single –or double blind trial is largely uninformative'. Thus, this narrative review aimed to identify and assess the quality of all published randomised controlled trials (RCTs) of EFT in order to:

- evaluate the effectiveness of EFT in treating a range of disorders
- compare the effectiveness of EFT with other interventions used for treating those disorders

Methodology

The search strategy

A literature search was carried out of the following databases CINAHL, Cochrane Library, MEDLINE, PsycINFO, PsychARTICLES, Proquest, PubMED, Sciencedirect, SPORTdiscus, Swetswise, Web of Knowledge, Web of Science and ZETOC. The following key terms were searched: EFT, Emotional

Freedom Technique and energy psychology using Boolean search terms and was limited to papers written in English. The search strategy combined results across all the databases above and was carried out in May 2011.

Requests for published; unpublished and ongoing RCTs were made via email requests sent to the Association of Energy Psychology and the Foundation for Epigenetic Medicine. Requests were also placed in EFT and Matrix Reimprinting Newsletters and personal contact was made with researchers and practitioners in the field. Conference proceedings and reference lists of retrieved articles were also hand searched. Abstracts of articles were reviewed and full copies acquired if they title and/or abstract identified the paper as an RCT of EFT.

Inclusion criteria

All published randomised controlled trials of EFT were considered for the review.

Exclusion criteria

Unpublished RCTs of EFT, ongoing RCTs of EFT, RCTs of TFT or other energy therapies and research that used other methodologies were excluded from this review.

Data Analysis

Two authors (EB and TS) independently rated and assessed the quality of each trial using the Jadad Scale (Jadad et al, 1993). This is a commonly used scale that rates the quality of RCTs, that ranges from 0-5 with 5 demonstrating the highest quality. The Critical Appraisal Skills Programme (CASP) for randomised controlled trials (CASP, 2006)) was also used to assess trials.

Results

The search strategy identified 42 published studies of EFT and of these 28 were excluded as they were either anecdotal reports, systematic observations, case studies or uncontrolled trials and a further seven were excluded as they were RCTs of TFT. In addition to the published RCTS, the search strategy also revealed six unpublished trials of EFT that were excluded. These were on stress biochemistry, traumatic memories in abused adolescents, optimal test performance in University students, depression in college students and two focussed on post traumatic stress disorder (PTSD) in war veterans. A further four ongoing trials were identified that focussed on the change in physiological symptoms and gene expression following EFT, test anxiety, presentation anxiety and food cravings. These were also excluded. Table 1 summarizes the characteristics of the seven published RCTs of EFT included in this review.

Table 1. Characteristics of included RCTs of EFT

Authors / Date & Country	Condition	Interventions	Outcome measures & time of assessment	Jadad Score	Results/ Significance
Test anxiety					
Sezgin & Özcan, 2009 Turkey	Test-taking anxiety in high School children	Randomised to Training in Group EFT, N=35 v Group Progressive Muscular Relaxation (PMR), N=35	2 month follow-up Test Anxiety Inventory (TAI) Test scores	2	TAI p<0.05 Test scores p=0.94 / p=0.90
Phobias					
Wells, et al., 2003 Australia	Specific Phobias of small animals	Randomised to Single 30-min EFT Session (n=18) v single 30-min Diaphragmatic Breathing (DB) with verbal content (n=17)	6 – 9 month follow-up Subjective Unit of Distress (SUD) Fear Questionnaire (FQ) Behavioural Approach Task (BAT) Pulse rate Confidence rating	1	Behavioural Approach Task (BAT) (p<00.02) SUDS (p<0.05) SUDS imagined during BAT (p<0.02) Fear Questionnaire (FQ) (P<p<0.05) Pulse rate p=0.01 (N.B. this is reported as NS)
Baker & Siegel (2005) USA	Specific Phobia (partial replication of Wells et al., 2003)	EFT (n=11) V Supportive Interview (n=10) V No-treatment (n=10)	1.4 year follow-up using Fear Questionnaire (FQ) Subjective Unit of Distress Fear of Specific	2	EFT compared to no treatment: FQ p<0.004 SUDS Imagined p<0.001 FOSAQ p<0.001 SUDS during BAT

			Animal Questionnaire (FOSAQ) SUDS Imagined Pulse rate Autonomic Response Questionnaire SUDs during Behavior Approach Task (BAT) Behavior Approach Task (BAT)		p<0.001 BAT p<0.006 Pulse rate p<0.57 NS EFT compared to interview: FQ p<0.02 SUDS Imagined P<0.001 FOSAQ p<0.001 SUDS during BAT p<0.002 BAT p<0.03 Pulse rate before BAT p= 2.79 NS Pulse rate during BAT p=0.57 NS Follow-up effects of EFT compared with pooled control conditions - supportive interview and no treatment : FQ p<0.01 FOSAQ p<0.05 SUDS Imagined P<0.004 SUDS during BAT p<0.05

					BAT p<0.10 NS
Salas et al., (2010) USA	Specific phobia (partial replication of Wells et al., 2003)	Cross-over trial 1 Session EFT followed by Diaphragmatic Breathing V Diaphragmatic Breathing followed by EFT (n=11)	SUDS Beck Anxiety Inventory (BAI) Behavioural Approach Task (BAT)	2	SUDS P=0.002 BAI P=0.042 BAT P=0.046
Post Traumatic Stress Disorder					
Karatzias et al., (2011) UK	Post traumatic Stress Disorder (PTSD)	Randomised to individual EFT (n=23) v individual Eye Movement desensitization and Reprocessing (EMDR, n=23)	3 month follow-up Clinically administered PTSD Scale (CAPS) PTSD Checklist (PCL-C) Hospital Anxiety and Depression Scale (HADS) Satisfaction with Life Scale (SWLS)	3	PTSD Scale (CAPS) p=0.86 NS PTSD Checklist (PCL-C) p=0.83 NS HADS Anxiety p=0.90 NS HADS Depression p=0.77 NS SWLS p=0.33 NS
Fibromyalgia					
Brattberg (2008) Sweden	fibromyalgia	EFT (n=43) V Wait list (n=43)	The Swedish SF-36 HAD SUDS Pain Catastrophizing Scale (PCS)	3	The Swedish SF-36 : Physical functioning p=0.30 NS Role physical p=0.001 Bodily pain p= 0.20 NS

			Chronic Pain Acceptance Scale (CPAQ) Swedish General Self-Efficacy Scale (GSE)		General Health p=0.09 NS Vitality p=0.03 Social functioning p=0.02 Role emotional p=0.02 Mental health p=0.01 HAD – anxiety p=0.03 HAD – depression p=0.02 PCS rumination p<0.001 PCS magnification p=0.006 PCS helplessness p<0.001 CPAQ Activity engagement p=0.001 CPAQ Pain willingness p=0.40 NS GSE NS SUDS No comparison between groups
Athletic performance					
Church (2009)	Athletic performance	Individual EFT (n=13) V attention control	Free throws Jump height	2	Free throws P<0.03 Jump height p=0.79

USA		(n=13)			NS

Definition of Acronyms BAI - Beck Anxiety Inventory; BAT - Behavioural Approach Task; CPAQ - Chronic Pain Acceptance Scale ; CAPS -Clinically administered PTSD Scale; FQ -Fear Questionnaire FOSAQ - Fear of Specific Animal; GSE - Swedish General Self-Efficacy Scale; HAD – Hospital Anxiety and Depression Scale; Questionnaire; PCS - Pain Catastrophizing Scale; PCL-C - PTSD Checklist; SWLS - Satisfaction with Life Scale; SUD - Subjective Unit of Distress; TAI-Test Anxiety Inventory; NS – non-significant

As shown in Table 1, the RCTs used a wide range of outcome measures in assessing wide range of different conditions. Indeed as there was no outcome measure that was common across all studies, a meta analytic review was not therefore possible. Furthermore, only phobias were addressed in more than one RCT, and although similar outcome measures were used, they used different comparison interventions and so a full systematic review of EFT for phobias was not feasible at this stage (Whittemore & Knafl, 2005; Greenhalgh, 2001). A narrative systematic review using narrative synthesis was therefore carried out (Popay et al., 2006).

Test-Taking Anxiety

Test anxiety has a negative correlation with academic performance (Chapell et al., 2005). In a Turkish study, Sezgin & Özcan (2009) randomised 70 high school students undergoing intensive training for the Turkish university entrance exam and who were identified as having test anxiety using the Turkish version of the Test Anxiety Inventory (TAI) to receive either EFT (n=35) or Progressive Muscle Relaxation (PMR) (n=35). The treatments were delivered by trained practitioners in small groups and sessions lasted between 30-45 minutes. Following the initial instruction session, the students were asked to practice the intervention at least 3 times a week for a period of 2 months. The PMR group received a CD, whereas the EFT group received written instructions to assist with this. They were then retested using the TAI and given a simulated test. 38 (54%) students did not complete the full requirements and statistical analysis was carried out on the remaining 32 students. Although data is given on the remaining students, this is combined and there is no comparison of socio-demographic data across the different treatment modalities. Intention to treat analysis was not carried out and no comparison is made between those who remained in the study and those who dropped out. No reason for no-compliance with the intervention was given. The results showed that while both PMR and EFT reduced test anxiety and increased examination scores, the reduction in test anxiety scores was significantly larger in the EFT group. Analysis of covariance revealed that there was however no significant difference in test scores between the EFT and the PMR group. These results are highly non-significant ($p=0.94$; $p=0.90$).

As the authors note, the study is limited by a number of factors including the small sample size and the large dropout rate. This combined with the lack of available data about the non-compliant group make drawing firm conclusions difficult. The sample was also drawn from a population of Turkish high school students attending a private academy and so the questions remains as to whether these results would be generalisable to other non-private high school populations in Turkey and in other parts of the world.

The PMR group received a CD, whereas the EFT group received written instructions. Future research could use a CD for both intervention groups to avoid this potential confounder. Compliance with the interventions was not assessed and a diary method could be used to assess this in future research.

Posttraumatic Stress Disorder (PTSD)

In the UK, Karatzias and colleagues, (2011) carried out an RCT comparing individual EFT with Eye Movement Desensitization and reprocessing (EMDR) in treating PTSD. Participants were selected from the entire waiting list of the area and were invited to take part in the research by letter. Participants who agreed were included if they fulfilled DSM-IV criteria for PTSD, were on medication for PTSD and were aged 18-65 years. 59 participants were eligible for the study and gave consent. Eligible participants then waited eight weeks prior to being randomised to a treatment group in order to compensate for natural recovery that may occur without any treatment. 13 dropped out during the 8 week wait-list period and the remaining 46 were randomly assigned to EFT (n=23) or EMDR (n=23) using a computerised schedule.

Dropout rates were 9 (39%) in the EFT group and 10 (43%) in the EMDR group, leaving a very small sample of 14 and 13 in the groups respectively. There was no significant difference in dropout rates between the two groups ($p=0.10$). Although it is stated that there were no statistical differences between completers and non-completers on any of the outcome measures pre-treatment, no p-value is given and so it is impossible to assess whether this difference may be nearing significance or not. There was no significance difference in the socio-demographic characteristics of participants in each group ($p>0.05$ for all). .

Treatments were given individually by 3 therapists, who were trained in both modalities. A sample of treatment sessions were videoed to assess fidelity and integrity. No differences were found across therapists. Sessions lasted one hour and used the EFT 'movie technique' (Craig, 2011).

Participants were assessed at baseline, pre-treatment, post-treatment and at 3 months follow-up by an assessor who was not aware of their treatment group. The assessments were all carried by the same assessor and it is feasible that participants may have inadvertently revealed which treatment they had received.

The assessments included the Clinician Administered PTSD Scale (CAPS), the PTSD Checklist (PCL-C), the Hospital Anxiety and Depression Scale (HADS),) and the Satisfaction with Life Scale (SLS). The results revealed significantly different time effects across all outcome measures. However, the results are not given for total HADS, CAPS or PCL-C. With regard to clinically significant changes, although there were no statistically significant differences between the EFT and the EMDR group, which was possibly due to the small sample size, there were significant clinical gains for both groups over time, with a slightly higher proportion of participants in the EMDR group producing substantial clinical changes.

The small sample size, combined with the large dropout rate make the results difficult to assess and a much larger study is required to fully assess EFT and EMDR in treating PTSD. The wait of 8 weeks prior to being randomised to a treatment group was used to mimic a no treatment control group. However, as 13 potential participants dropped out during this period, it may have been better to include a third 'no–treatment' group or to use a more traditional wait-list control.

Phobias

In an Australian study, Wells and colleagues (2003) carried out a RCT comparing 'Basic Recipe' EFT with a specific form of diaphragmatic breathing (DB) designed to include verbal elements similar to those used in EFT in the reducing specific phobias of small animals.

Seventy potential participants were recruited via a newspaper and radio advertisements and of the 70, 46 fulfilled the inclusion criteria of DSM-IV for a specific phobia using a structured telephone interview, not currently receiving treatment for their phobia and could not stand at the closest point to the feared animal with a SUDS less than 5. Thirty five were randomised to 30 minutes individual EFT(n=18) or DB (n=17). A further 11 who entered the study too late to be randomised were assigned to a group EFT condition and their results were noted separately. As there was no control group DB offered, the results for these 11 participants are not discussed here.

Ninety three percent of the participants were female and the EFT and DB were administered by both a male and a female psychologist. Participants were assessed using the Behavioural Approach Task (BAT), SUDS imagined, SUDS during BAT, the Fear Questionnaire (FQ), pulse rate and a confidence rating. Assessments were carried out by two research assistants who were blind to treatment group.

The only socio-demographic factor assessed was age and so there may have been differences in for example, socio-economic status of participants that were not assessed. However, at baseline, there was no significant difference in age or pre-test values in any of the outcome measures used between participants in the two groups. Participants were assessed again at between 6-9 months post intervention. 12 EFT and 9 DB completed the follow-up assessments the remaining 25 (54%) either refused or were lost to follow-up.

At 6-9 month follow-up there was a significant difference with the EFT group showing greater improvement over the DB group for all outcome measures except pulse rate. However although this was stated to be non-significant the p-value reported was p=0.01. The reason for this is not clear. This may be a typographical error or an error in interpretation. There was no significant difference in pre-test scores between those who attended for the 6-9 month follow-up and those who did not. However as socio-demographic factors were not assessed it is not possible to know whether these, for example being unable to afford time off work, played a role in loss to follow-up.

The authors outline a number of limitations, including the small sample size, the 30 minute duration of the interventions and the lack of a no –treatment group. They also discuss the problems of identifying people with phobias and the generalisabilty of findings from this self-selected group. McCaslin (2009) also highlights some critique of the Wells study including the fact that they did not compare EFT with an established or recognised therapy and that experimenter allegiance effect may have had an impact on results. In addition, the study was partially funded the Association of Energy Psychology (ACEP), a non-profit organization, dedicated to developing and applying energy psychology methods and furthermore, the hypothesis states that EFT would produce greater improvement in phobic responses. Thus there may have been an inherent bias in the study.

Baker and Siegel (2005) carried out a partial replication and extension of the Wells et al (2003) study in the USA and compared EFT with a supportive interview and with a no-treatment control group. The study aimed to explore methodological artefacts, non-specific factors and therapeutic ingredients associated with EFT.

Participants were recruited via newspaper articles, flyers and a television news story and were randomly assigned to EFT (n=11), a supportive interview (n=10) or to a no-treatment group (n=10). Participants were all assessed by an assessor who was blind to treatment group using the Fear Questionnaire (FQ), Fear of Specific Animal Questionnaire (FOSAQ), SUDS Imagined, pulse rate, BAT, SUD during BAT and an Autonomic Response Questionnaire. Assessment were made pre-treatment, immediately post-treatment and at 16 months follow-up.

The interventions each lasted 45 minutes, the EFT group received approximately 15- 30 rounds of tapping using the 'basic recipe'. As with the Wells study, Baker and Siegel also report no significant difference in pulse rate before or during BAT. However the p-value for pulse rate before BAT is reported as p= 2.79. It is unclear if this is a typographical or statistical error.

he supportive Interview (attention-placebo) used empathy, compassion and active listening and the no-treatment group either studied or read a magazine provided for them for 45 minutes. The results demonstrated that the EFT group showed a significant reduction in phobic symptoms immediately after the intervention and again at the 16 month follow-up on all the outcome measures apart from pulse rate, which showed no significant difference at any time point.

24 (74%) participants took part in the long-term follow-up. This good follow-up response rate is mainly attributed to participants being paid to attend for follow-up ($125). Participants were aware that they would be paid for returning for follow-up and this may have produced bias. Participants were also treated by an EFT therapist who the authors state had a positive attitude towards EFT and this may have had an impact on the results. The study was again partially funded by The Association for Comprehensive Energy Psychology. The 'working hypothesis' states that no effects would be observed for the no-treatment condition. However no null hypothesis is made regarding the other two groups and so it is inferred that there will be an effect. Again, a clear null hypothesis would be a useful addition.

Salas et al (2010) also carried out a partial replication of the Wells study and used a randomised cross over design to compare the effectiveness of one session of EFT with diaphragmatic breathing in reducing phobias of heights, snakes, cockroaches, darkness and syringes. Participants were a self selected group of American undergraduate psychology students. Volunteers were included in the study if they reported a SUDs score of 8 or above in relation to their phobia. No clinical diagnostic test for phobias was carried out. The participants were assessed using a modified form of the Beck Anxiety Inventory (BAI) and the Behavioural Approach Test (BAT). This study used a brief version of EFT tapping on 8 meridian points (Craig, 2011). Each treatment intervention consisted of 5 rounds lasting two minutes each of EFT followed by DB versus DB followed by EFT.

The results indicated a large overall treatment effect for EFT and revealed that diaphragmatic breathing is less effective in reducing SUDS, BAI and BAT when given first and that EFT following diaphragmatic breathing significantly reduced SUDS, BAI and BAT scores.

As the authors note, the study is limited by a small sample size, the lack of follow-up data to assess whether the reduction in phobic symptoms is maintained over time. The randomised cross over design of the study also makes it difficult to separate out which treatment aspect is most successful. The treatments were both provided by the first author and although it is noted that she uses both treatments in clinical practice with positive results, it is feasible that she may have had a personal bias towards the more successful EFT treatment and that subjects picked up on. This is also suggested by the fact that a null hypothesis is not given, but the hypothesis states that 'EFT would yield superior results'. The study was partially funded by the Foundation for Epigenetic Medicine which is the research arm of

Soul Medicine Institute, a non-profit organisation dedicated to research, therapy and education in Energy Psychology, and this may have led to bias.

The three studies outlined above include a range of differing phobias, from insects to small animals to heights and so it would be of interesting to see if EFT is as successful with one particular phobia, for example arachnophobia. It would also be of interest to compare EFT with standard interventions for specific phobias such as exposure based treatments (Wolitzky –Taylor & Horowitz 2008) or One Session Treatment (OST; (Zlomke & Davis 2008).

Fibromyalgia

In Sweden, Brattberg (2008) carried out an RCT to examine whether an eight-week, self-administered EFT programme administered via the Internet led to reduced pain perception, increased pain acceptance, coping ability and health-related quality of life in people with fibromyalgia.

Women were recruited via adverts placed in a public pharmacy newspaper and on internet discussion groups on fibromyalgia. The women were therefore a highly self-selected group, motivated to help themselves by reading about and being involved in internet discussion groups. This self-selected sample of 86 women, who had been diagnosed with fibromyalgia for less than 5 years, been on sick leave for at least 3 months, who had access to the internet, were willing to train in EFT using an internet treatment programme and then use EFT daily and who had no planned or ongoing rehabilitation programme were randomly assigned to a treatment group (n=43) or waiting list control group (n=43).

The sampling method makes it difficult to generalise these findings to other populations of men and women and to other countries.

The women were assessed at the start of the study and then at 8 weeks 'after its conclusion' using The Swedish SF-36 (Sullivan et al., 1995), the HAD, SUDS , Pain Catastrophizing Scale; Chronic Pain Acceptance Scale (CPAQ) and the Swedish General Self-Efficacy Scale (GSE). It is not clear why the scales were not repeated immediately on completion of the 8 week treatment programme, rather than waiting for 8 weeks after this.

Seven (16%) women dropped out of the wait–list group and 17 (40%) women dropped out of the EFT group and 9 (21%) of these before the treatment programme had even started. Reasons for dropout included forgetfulness, lack of motivation/self discipline or having too much to do. This dropout rate is similar to other studies that have used EFT (Karatzias et al 2011 (39%); Boath et al., in press (33%). The majority of the women who remained in the study are also reported to have needed several reminders. The number and nature of these reminders e.g. email or telephone and by whom is not reported.

The women were asked to send in a log register form each week. However no results are reported on this as about half the women found this too difficult and instead wrote informally about their own experience of tapping. No qualitative data is however reported.

The results showed statistically significant improvements in all subscales of the HAD and the PCS for the EFT versus the control group and in some of the subscales of the CPAQ and the SF-26. In addition, EFT not only significantly reduced anxiety and depression, but the results for anxiety and depressions subscales were also clinically significant post-treatment. No results are reported for the

total scores for each of the SF-36, HAD, PCS and the CPAQ and this makes it difficult to assess clinical significance. The only overall scores shown are a significant difference in the SUDS for the EFT group compared to the controls (p=0.02) and a non-significant differences in GSE between the two groups (p=0.10).

The results shown are for 30 women in the EFT group and for 36 women in the control group. From the dropout of 17 women reported there should be 26 women in the EFT group. It is therefore unclear how these numbers were arrived at.

The source of funding is not acknowledged.

Despite the limitations of this study as outlined by the authors and in this paper, it suggests that self-administered EFT may be a good complement to other treatments and rehabilitation programs for fibromyalgia. It would therefore be interesting to carry out a more robust RCT of this easily accessible, internet self-administered treatment method.

Athletic performance

Church (2009) carried out a RCT to assess the effect on EFT on a small cohort of 26 college basketball athletes attending an elite PAC-10 (basketball league) college in the USA. The basketball players were performance matched and randomly assigned to receive 15 minutes of EFT or an attention control of an inspirational talk from a former college basketball coach. The sessions were split into 10 minutes followed by another 5 minutes. The reason for this time split is not clear. The interventions were administered individually to each player. The EFT was tailored to the individual and focussed on reducing their SUDS levels for particular issues involving their athletic and life problems.

Data analysis was blind, however for practical reasons, randomisation was not. The RCT found no significant difference in jump height between the two groups post intervention, but found a significant difference in free throws, with the EFT group improving by an average of 20.8%. No SUDS levels are reported in the results and the control group did not use SUDS, this may have provided an interesting between group comparison. In addition, as the aim of the study was to evaluate whether EFT could make a difference to elite athletes by treating any stress and anxiety associated with sports performance, it was therefore surprising that no measures of stress or anxiety were used. However as Church notes, using self-report scales of anxiety or stress would be useful for future research. The source of research funding is not identified,.

The control group did not receive such an individually tailored intervention and this may have made a difference to outcome. In the EFT group, as many issues as possible were dealt with within the 15 minutes available. It would have been interesting to note how many and the nature of these issues. EFT has been shown to be highly effective in groups (Rowe, 2005) and so it would be interesting to see if a group EFT intervention for elite basketball players was as effective in future.

Discussion

Overall this narrative systematic review has demonstrated an improvement using EFT on PTSD, Fibromyalgia, Phobias, test anxiety and athletic performance. EFT was shown to be superior to diaphragmatic breathing (DB), Progressive Muscular Relaxation (PMR), an inspirational lecture and a

Support Group. Only one RCT showed Eye Movement, Desensitization and Reprocessing (EMDR) to be superior to EFT and this was by only a very slight margin.

Four of the seven RCTs reviewed here provided individual EFT to participants and three offered group EFT. Indeed Wells and colleagues (2003) analysed separately the group 'shortcut' version of EFT intervention for the cohort of people with phobias who were not able to be accommodated into the trial and found group EFT to be highly effective and so group EFT for phobias should be explored separately. Research has shown that EFT is effective with large groups of people (Rowe, 2005) and so has the potential to offer a very efficient and cost effective intervention. It would however be interesting to explore whether individual EFT offers any advantage over group EFT. None of the studies looked at the economic perspectives of EFT. Indeed, in the current financial climate future research should consider comparing group with individual EFT to assess both cost-benefit and cost-effectiveness.

All the RCTs reviewed included only quantitative assessments and in the Brattberg study the spontaneous qualitative responses were not included. Future research should therefore consider including qualitative assessments to provide a range of rich data to highlight participants' views and opinions of EFT and control interventions. Indeed an ongoing RCT plans a focus group to explore students' views of EFT in reducing their presentation anxiety (Boath et al., in press) and another study aims to qualitatively assess the perceived helpfulness of the learned EFT protocol for improving ease of studying, comfort with test taking and performance on tests (Freedom, 2011 Personal correspondence).

Experience, training and professional background of practitioners is also important and the studies discussed above did not outline the in detail the level of training, or how experienced the practitioners were who delivered the EFT (Level 1, Level 2, Level 3, EFT trainer or EFT Master). There may therefore have been systematic differences between practitioners across studies and across EFT practitioners in their interpretation and use of EFT. The level of experience is also important for the practitioners administering the control interventions and again this is not outlined in detail in the papers. Treatment fidelity measures were used in only the Karatzias study where video was taken of sessions and compared across EFT practitioners. The EFT provided may therefore have been delivered differently by each practitioner and furthermore, may have been delivered differently by the same practitioner to different participants. Although the studies all refer to using Gary Craig's EFT manual, the Salas study used a briefer 8 tapping point version of this, whereas all the other studies reviewed used the full 12 tapping points and the Karatzias study used the EFT movie technique. A clear definition of EFT and a standard method is therefore required for future research if meaningful comparison is to be made across studies.

Participant expectations may also have been affected by how EFT and its compactor was explained to the EFT to participants, for example defining EFT as 'acupuncture without needles' or mentioning 'acupressure points' may have led to participants feeling more open to EFT (McCaslin, 2009). Although no information about participant's baseline knowledge of EFT was given. It would be useful to know if participants in the studies knew about EFT, if they had used it already, were interested in EFT and so expected it to work.

There was no significant difference in pulse rate pre to post treatment for the EFT or control groups in the two RCTs that used this as an outcome measure (Wells et al 2003; Baker & Siegel, 2005). The reason for this is not clear; however other physiological measures such as stress cortisol might be more appropriate. A further RCT is also underway that aims to assess the impact of EFT on stress biochemistry and this may provide revealing insights into the most appropriate and relevant biochemical and physiological measures.

The optimal duration of an EFT session and the optimal time for follow-up is not clear. For example, Church (2009) assessed the immediate impact of a 15 minute EFT intervention on athletic performance. Baker and Siegel (2005) assessed the impact of one 45 minute session of EFT and found that the effect was still evident at the 16 month follow-up, whereas Wells et al (2003) found enduring results of a 30 minute EFT session at 6-9 months follow-up. Further research is therefore required to assess the optimal duration of an EFT session and the long term duration of effect.

In some studies, for example, Sezgin & Ozcan, participants given clear instructions to tap between treatment and follow-up. However in other studies for example, Wells et al, no clear instructions were given. It is therefore not clear if participants continued to use EFT to treat their phobia and if this accounted for the long term effects.

A range of EFT was used in these RCTs, for example the basic recipe, the movie technique and brief EFT. It is therefore difficult to compare like with like. Furthermore, many new forms of EFT are now developing and are being used with reported success in clinical practice, for example faster EFT (Smith, 2011), Slow EFT (Hartman, 2011) and matrix reimprinting (Dawson & Allenby, 2010). Future research could consider comparing these new approaches to basic recipe EFT in order to assess the most effective method.

The authors are also all trained in EFT and one works as an EFT practitioner. Although CASP and JADAD were used to guide the critique of the RCTs and the papers were reviewed independently by two of the authors, this may have been a source of bias.

Every attempt was made to address the criticisms aimed at Feinstein's review article (McCaslin, 2009; Pignotti and Thyer, 2009) for example, including providing clear inclusion and exclusion criteria and highlighting potential author bias. However, there may still be critiques of this revie, for example, the search strategy was limited to the databases available to Staffordshire University and although every attempt was made to identify further research, it is feasible that the search was incomplete.
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The Jadad scale revealed that none of these RCTs were of the highest quality, indeed the scores ranged from 1-3 (5 being the highest). This is in part due to the impossibility of 'blinding' participants in within studies of EFT, but also to inadequate reporting by the authors, for example many simply reported that participants were randomised to a treatment group, but did report the method of randomisation and so concealment of treatment allocation was also unclear. Although masking treatment group from participants is not possible with studies of EFT, assessments can be made by assessors who are blind to treatment group and the analysis can also be carried out 'blind'. However, few studies mentioned such attempts to mask assessments and none mentioned attempts to mask analysis. Some papers simply reported a non-significant finding as NS or reported a p-value $p>0.05$. In future it would be useful to report actual p-values to enable readers to assess whether this is close to significance or not. The CONSORT statement (Schultz et al., 2010) is intended to improve the reporting of a randomized controlled trial (RCT) and in future authors should consider using this to guide the reporting of their findings.

EFT is often used in clinical practice in combination with other interventions and so future research could fruitfully explore EFT as an adjunct therapy.

EFT involves three elements, imaginal exposure, cognitive restructuring and relaxation associated with tapping on acupressure points. The choice of control intervention needs to be considered carefully in future studies to include a comparator for all three aspects of EFT, for example, the studies comparing EFT with diaphragmatic breathing do not include a control for the cognitive component. Karatzias et al

(2011) recommend a dismantling study of EFT and Waite and Holder (2003) use three different control groups in their study on fear. Both McCaslin (2009) and Pignotti and Thyer (2009) critique Feinstein's review for not including Waite and Holder (2003) and it is not included in this review either. The reason for this is that there is insufficient detail to conclude that true randomisation was employed. The authors have not reported that the assignment to groups was done by randomisation, but by 'rotating group assignment'. This appears to be a systematic sampling scheme and did not appear to involve true randomisation.

The search revealed six trials of EFT that have been submitted for publication. These were on stress biochemistry, reduction on traumatic memories in abused adolescents, psychological trauma in war veterans, post traumatic stress disorder (PTSD) in war veterans, optimal test performance in University students and depression in college students. A further three RCTs are ongoing, focussed on the change in physiological symptoms and gene expression following EFT, test anxiety and food cravings (Church, personal correspondence, 2011). Thus a total of ten further RCTs are anticipated soon and this will enable not only a more detailed systematic review of RCTs of EFT in future, but will also potentially allow meta analytic reviews focussing specifically on using EFT in treating particular conditions for example PTSD.

The aim of this review was to identify and evaluate the effectiveness of EFT in comparison to other interventions and so concentrated on reviewing RCTs. Although Herbert and Gaudiano (2005) recommend that any study other than 'a single–or double blind trial is largely uninformative', given the diverse range of experimental and non-experimental research available for EFT, an integrative review that enables diverse approaches and purposes to be combined would be a useful methodology to explore EFT in the context of healthcare policy and practice in future (Whitemore & Knafl, 2005).

In conclusion, this review suggests that EFT may be an efficient and effective intervention for a range of disorders. However, given methodological flaws in the studies outlined above the results presented here are tentative and as such further good quality research into the effectiveness of EFT is warranted.

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