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THE IMPACT OF EFT AND MATRIX REIMPRINTING ON THE CIVILIAN SURVIVORS OF WAR IN BOSNIA: A PILOT STUDY

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ABSTRACT

A pilot study was carried out to establish the feasibility and effectiveness of Matrix Reimprinting (MR) in treating post traumatic stress symptoms in civilian survivors of the war in Bosnia. Two Healing Hands Network Centres in Bosnia in Sarajevo and Hadzici. Clients accessing the Healing Hands Network in Bosnia were invited to participate in the pilot study of MR. At the start and end of their treatment, clients were asked to complete a modified version of the PTSD Checklist-Civilian Checklist (PCL-C; Blanchard *et al*., 1996) at baseline, immediately after the two week MR intervention and then at 4 weeks follow-up. Eighteen clients were included MR pilot study. There was a significant reduction in the mean scores from baseline to immediately post intervention ($p = 0.009$) and again at the 4 week follow-up ($p = 0.005$). The size of the immediate effect was sustained at follow-up ($p = 0.65$). The qualitative analysis (via. an evaluation form at four weeks follow-up) identified the following four themes: Theme 1: Physical and psychological changes Theme 2: The strength to move on and to self-care Theme 3: Rapport with the MR Practitioners Theme 4: Recommending it for others. Despite the limited sample size, significant improvements were shown. The qualitative and quantitative results support the potential of MR as an effective treatment for post traumatic stress symptoms. Further controlled studies are required.

Keywords: Matrix Reimprinting, EFT, PTSD, Bosnia, Trauma

1. INTRODUCTION

Post Traumatic Stress Disorder (PTSD) is apsychological disorder that can develop after exposure to one or more traumatic events that threatened or caused severe physical harm (NICE, 2005a). Symptoms of PTSD are varied and include: Re-experiencing symptoms via flashbacks, nightmares or distressing intrusive images; avoidance of people, situations or circumstances that act as reminders of the traumatic events; hyperarousal including hypervigilance, exaggerated startle responses, irritability, difficulty concentrating and sleep problems; emotional numbing and feeling detached from other people (NICE, 2005a) Galea *et al*. (2005) suggest that PTSD can persist for years if untreated.

It has been reported that 39.2% of Bosnian refugees in Croatia suffered from depression and 26.3% from PTSD (Mollica *et al*., 1999). Oruc *et al*. (2008) reported that 26.3% of Bosnian refugees in Croatia suffered PTSD and 45% of those were still affected after 3 years.

In addition to the impact on war (Babic *et al*., 2010; Koso and Hansen, 2006; Kuljic *et al*., 2004), research suggests that 90% of the casualties of war are civilians (Alexander 2010). Thousands of citizens experienced and/or witnessed highly traumatic events, during and following the war (Hodgetts *et al*., 2003). Addressing psychological trauma following war is therefore critical, however the resulting social and political upheaval combined with lack of resources means that remarkably few receive mental health services (Connolly *et al*., 2013). This has resulted in long-term emotional issues and mental health problems within the civilian population (Hodgetts *et al*., 2003). While there have been many interventions to support civilian survivors of this war (Butollo, 2000; Kruse *et al*., 2009; Layne *et al*., 2008), research has shown that the recovery rates

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among patients treated in specialized centres for war-related PTSD is poor and symptom improvements small (Priebe *et al*., 2010).

Extensive research has been carried out in an attempt to identify the most effective treatment for PTSD (Cowap *et al*., 2014) and recent meta-analytic reviews suggest that exposure therapy, CBT and Eye Movement Desensitization and Reprocessing (EMDR) to be efficacious treatment approaches (Benedek *et al*., 2009; Bradley *et al*, 2005; IM, 2006; 2007; NICE, 2005a; Seidler and Wagner, 2006). However, the debate surrounding most effective PTSD treatment continues and while some researchers have argued towards the superiority of treatments such as exposure therapy (Nemeroff *et al*., 2006), some state the argument that no one treatment is superior to another (Lee *et al*., 2006). In spite of the current debate, trauma-focused treatment remains the current recommendation as the primary PTSD treatment protocol (APA, 2000; NICE, 2005b).

Matrix Reimprinting (MR) is a newly developed psychological technique that can to improve health and wellbeing by allowing clients to access and transform painful memories about traumatic events (Dawson and Allenby, 2010). MR evolved from Emotional Freedom Techniques (EFT; Craig, 2011). EFT is a gentle therapy that can be used for a variety of emotional issues, including PSTD (Craig PTSD book; Feinstein, 2010; Church, 2010; Church *et al*., 2012a; 2013). In EFT, subjects gently tap with their fingertips on acupressure points (mainly on the head and hands) and relate this to the voicing of specific statements (Craig, 2011). MR is an energy psychology technique which incorporates EFT, imagined parts/inner child work, referred to in MR as Energy Consciousness Holograms (ECHOs) and also integrates recent understanding from quantum and epigenetic science (Church, 2013). Using MR, the client works with the ECHO to release the stress or trauma in a dissociated manner by imagining themselves talking to and supporting the ECHO. The client can then support the ECHO using EFT to relive or revise the traumatic event. A new and positive picture is then created and highlighted, which is used to reprogram the mind with the new information, indicating that the trauma is over (Dawson and Allenby, 2010).

MR is claimed to be particularly suitable to help clients overcome serious health and emotional challenges, including conflict and war trauma (Dawson and Allenby 2010; Stewart *et al*., 2013).

There is a growing body of literature that suggests that energy psychology methods including EFT and MR are effective in the treatment of Post Traumatic Stress Disorder (PTSD) (Connolly *et al*., 2013; Church and Feinstein, 2010; 2012; Boath *et al*., 2012; Stein and Brooks, 2011; Church *et al*., 2013; 2012b; 2009; Karatzias *et al*., 2011; Stewart *et al*., 2013).

Much research has been carried out on the civilian survivors of the war in Bosnia (Mollica *et al*., 1999; Oruc *et al*. (2008). Although research has demonstrated the effectiveness of TFT in treating PTSD in refugees (Folkes, 2002) and civilian survivors of the genocide in Rwanda (Sakai *et al*., 2010; Connolly and Sakai, 2011), to date no study has reported on the effects of MR on post traumatic stress symptoms in civilian survivors of war.

Hobfoll *et al*. (2007) emphasise that EFT, TFT and other self help tools can increase subjects' self-efficacy and enhance recovery. Clients being treated with MR are first taught EFT and can then use EFT as part of and between MR sessions. Although EFT can be easily taught and self-administered, clients are not advised to use MR by themselves for extreme issues (Dawson and Allenby, 2010).

Research suggesting that EFT is an efficient and effective intervention for a range of psychological disorders has grown exponentially over the past decade and three systematic reviews have been recently published (Feinstein 2008; Boath *et al*., 2012; Feinstein, 2012). Although there are a growing number of MR practitioners (around 2,500 worldwide) and anecdotal evidence demonstrating the effectiveness of MR for a wide range of issues including: Trauma, fibromyalgia, allergies, phobias, pain management, depression, anxiety and, stress reduction, a literature search of nursing, medical and psychological electronic databases using the key terms 'matrix reimprinting' revealed only one published clinical studies of MR to date (Stewart *et al*., 2013).

A systematic review of EFT for PTSD is currently underway by two of the authors, who have identified nine published papers focused on EFT for PTSD (Cowap *et al*., 2014). Five of these focus of combat trauma (Church *et al*, 2009; Church, 2010; 2013; Gurret *et al*., 2012; Hartung and Stein, 2012). However no published papers focussed on EFT for civilian survivors of war.

Healing Hands Network is a British based Charitable Organisation established in 1996 to help survivors of the siege in Sarajevo, Bosnia and Herzegovina (HHN, 2013). They provide therapy treatments to people living with mental, physical and emotional effects of war and disaster in and around Sarajevo. Clients are referred by local organisations including the Association of Concentration Camp Victims, the Association of Civil War Victims and the Centre for Torture Victims. This pilot study aimed to assess whether Matrix Reimprinting

would be an effective and acceptable treatment of PTSD in civilian survivors of the 1992-95 war in Bosnia.

2. MATERIALS AND METHODS

A sample of 18 adults was selected by the two Bosnian administrators of Healing Hands Network, with the inclusion criteria that subjects were still experiencing severe emotional distress from their experiences during the 1992-95 war in Bosnia. All 18 were existing clients of Healing Hands Network (HHN) and were identified by HNN as being suitable for MR.

The participants had been exposed to a wide spectrum of traumatic events during the war including: Beatings, confiscation or destruction of personal property, war wounds, torture, rape, sexual humiliation and/or witnessing another person's injury or murder.

None of the subjects spoke English and three interpreters were therefore recruited. All three interpreters were introduced to the highly experienced, qualified and certified MR volunteer practitioners who gave them an introduction to EFT and Matrix Reimprinting at an introductory meeting prior to meeting any of the participants.

The intervention was carried out at two separate venues, eight participants at each site. The first Group (Group A) were seen at the HHN headquarters in Sarajevo and the second group (Group B) in the HHN outreach post in Hadzici, 12 km from Sarajevo.

Each participant was timetabled to receive four, one hour, one-to-one sessions spread over two weeks at their respective centre. Each person saw the same practitioner and interpreter for each session.

Each person was given translated written copies of the basic EFT protocol, including suggestions for using EFT to aid sleep. They were also introduced to a breathing technique similar to Heart Math breathing, a heart-focused breathing technique which can be helpful for emotional wellbeing (IH, 2013). The clients were instructed that they could continue to use EFT on themselves any time they wished.

At the end of the two weeks, both groups met and were given time to talk with each other about their experiences during the study and provide written feedback on MR.

The outcome measure used was a version of the civilian version of the PTSD Checklist (PCL-C; Blanchard *et al*., 1996) which had been modified and translated into Bosnian. The PCL-CM was selected for its ability to screen for PTSD without asking about the specific traumatic events that may have caused PTSD. Demographic and occupational questions were added to the questionnaire, but no sensitive questions regarding ethnic/religious background were included. The final two questions asked whether or not the respondents witnessed or experienced what they considered to be a traumatic event during the conflict and if yes, did they think that it still affected them today. The questionnaire was translated into Bosnian-Serbo-Croat, back-translated into English and pilot-tested by health professionals in BiH.

Clients were assessed using the PCL-CM at three time points, at baseline, immediately post intervention and at four weeks post intervention. Clients were asked to fill in an evaluation form to explore their views of MR at four weeks follow-up. Responses were captured in writing. The qualitative data were analysed using a framework approach (Ritchie and Spencer, 1994). The quantitative data were entered into SPSS. Data were screened for normality using the Shapiro-Wilk test. PTSD scores were found to be normal and were analysed using the paired t-test. Where P-values were <0.05, the differences were considered statistically significant.

3. RESULTS

A total of 18 civilian survivors of the war participated in the research. Four were men and 10 women, 4 were aged 30-40 years, 7 were 40-60 years and 3 were over 60. **Table 1** shows the difference in PCL-CM over time. One client did not complete the PCL-CM; the reason for this was not provided.

The mean score on the PCL-CM at baseline (pre MR intervention) was 82.71 (SD = 18.72) and immediately post the two week intervention, the mean scores reduced to 53.77 (SD = 27.20). This was clinically and statistically significant ($p = 0.009$). The mean score on the PCL-CM at the 4 week follow-up was 53.38 (SD = 24.58). This was a clinically and statistically significant reduction from the baseline scores ($p = 0.005$). There was however no significant change in scores between the post intervention and 4 week follow-up ($p = 0.65$), suggesting that the immediate effects of MR were sustained, representing both a clinically and statistically significant reduction from baseline.

Table 1. Results of inferential analysis pre and post MR

	Mean (SD)	N = 17
Baseline	82.71 (18.72)	13
Post intervention	53.77 (27.20)	13
4 week follow-up	53.38 (SD = 24.58)	13

The qualitative data produced richr insight into the client's experience and outcomes of EFT and MR. No negative side effects were reported and all 14 clients who completed the evaluation form gave positive feedback about their experiences and these were characterised by four overarching themes:

Theme 1: Physical and psychological changes
Theme 2: The strength to move on and to self-care
Theme 3: Rapport with the MR Practitioners
Theme 4: Recommending MR for others

Quotes are presented to illustrate the themes; names have been changed to maintain confidentiality.

Theme 1: Physical and Psychological Changes

It was evident from the data that MR produced positive changes. All reported positive changes in psychologically and some physically and that these changes had also been noted by family and friends as illustrated by the following data extracts:

> *"I have noticed a change and a positive one. I feel very happy, satisfied, more brave and more positive overall towards life. I became happier and more communicative with my friends...My family has noticed this change in me as well my friends who now say I appear to be more cheerful and more talkative… I feel a little better talking with my family and friends. I am even capable of speaking with people I don't know-unlike before. All sessions helped me to improve my psychological as well as physical health" (Lamia)*

> *"Of course I have changed for the better. I feel a lot better and other people say that about me as well... (Josip)*

> *My family noticed the improvements in my mood and behaviour..(Branka)*

> *My daughter tells me that lately I am more calm and that I am not as aggressive as before." (Alenka)*

> *"Treatment has helped me a lot. Other people noticed the improvement. I feel much better (Hasan)*

> *...At the beginning I felt a huge burden on my shoulders and my mind was filled with grey thoughts but after only one session my mind cleared, the greyness disappeared and I felt stronger." (Zana)*

> *"I have noticed a change and a positive one. I feel very happy, satisfied, more brave and more positive overall towards life... (Mira)*

Theme 2: The Strength to Move on and to Self-Care

Participants reported that not only had MR had given them the strength to move on with their life, learning EFT as a precursor to MR had provided them with a strategy for self care:

> *"The sessions gave me enough strength to move on with my life...While I was coming to the therapies, my family has noticed that I was a lot calmer. (Sava)*

> *"These treatments are very good and I know that they will give me the strength to move on with my life" (Zora)*

> *"This therapy was very useful for me, I managed to relax and rest a lot.. (Mira)*
> *"I managed to achieve so much within the past ten days. Five days after the first session I felt great and relaxed..."This therapy helped me a lot. I am much calmer than before. I learnt how to help myself when I am depressive because this therapy helps me to calm down and relax" (Izet)*

Theme 3: Rapport with the MR Practitioners

Rapport can be described as a sympathetic relationship or understanding between the practitioner and client, or a achieved when the client feels that the therapist understands them and appreciates the value and complexity of their personal experience (Owens, 2012; Yapko, 1995). Rapport is essential in building a therapeutic alliance with a client (Hartmann, 2002) and the participants noted the positivity and empathy of the two therapists:

> *"I would like to express my gratefulness and thankfulness to X {MR/EFT therapist] X has made a huge positive turn in my life. She is very brave, a very strong person and a joyful person. I wish nothing more than for X to be happy and to always have that smile on her face. I would like to thank the whole crew. Thank you!" (Lamia)*

> *"We have worked with beautiful therapists who knew how to help us. Both of the therapists showed us a lot of understanding and they had so much positive energy that they managed to transform onto us as well. I would*

like to ask this organisation to send these lovely people to Bosnia again. I am very grateful to both of them". (Vesna)

Theme 4: Recommending MR to Others

A large number of participants stated that they would like further MR Sessions for future issues and that they would recommend this treatment to others. Comments such as those below were typical:

"These therapies gave me strength, self-confidence and peace. I feel excellent...I would like you to use this therapy to help other people who have similar problems …Treatment is very good and it has been very helpful to me and to my colleagues. In the future, I would like to continue the treatment since it has helped me and would definitely recommend it to others. These therapies are very helpful. I think that you should use them more with other people as well. I want to recommend them to others. They helped me a lot and I feel great" (Biljana)

This therapy has had a positive effect on me most definitely. I would love to be able to get this kind of treatment again and I would recommend this treatment to anyone…I would like more people to join in this kind of treatment because I personally experienced the benefits of it." (Radmila)

"I am very pleased with the therapy, the therapists and the translators as well. This therapy helped me…" (Branka)

"I am very satisfied with the changes that I experienced during the sessions. I want to be given the opportunity to continue with this kind of treatment because I find it very helpful" (Nenad)

4. DISCUSSION

This is first ever qualitative study of MR and the second quantitative study. Although the results suggest that MR may be an effective treatment for PTSD in civilian survivors of war, these are tentative due to the limitations of the study.

A general risk of having clients talk about trauma is that it will lead to retraumatization (Van der Kolk *et al*., 1996). This safety issue is minimized with MR as it uses a dissociative technique, similar to Rewind (Muss, 1991) and is based on EFT which is considered safe (Hartmann, 2003) and in line with the previous MR research, no severe abreactions, ethical or safety issues were identified in this study (Stewart *et al*., 2013).

The training, experience and professional background of practitioners is important and MR was carried out by two highly trained and experienced practitioners. No measures of fidelity were used however to check that both were delivering MR in the same way. The practitioners delivered the MR and also collected the evaluation data; clients were aware that they were evaluating the service and this may have biased their responses. Variability in skills and experience of practitioners would however be expected in other settings and so future research should address this. In addition, their strong allegiance to EFT and MR may also have influenced clients' responses. There was also no randomisation to treatment groups and the sample size achieved was small.

This small study explored the feasibility of using MR in treating PTSD in survivors of the war in Bosnia. Given the level of trauma, clients were recommended not to use MR by themselves, but were encouraged to use EFT between sessions. This is important, since clients did not need to wait until the next MR session if they were experiencing emotional distress and this also empowered the client, which is an important part of the trauma recovery process (Hobfoll *et al*., 2007). However the frequency that client's used EFT was not collated and it may be that EFT alone may have been as effective. Future research should consider exploring this. The results suggest that MR is a highly effective intervention as measured using the PTSD scale and the client feedback. Indeed, the effects reported in this study are consistent with the findings of previous published research that has used EFT in remediating the symptoms of PTSD (Church *et al*., 2013; 2012a).

In this study, MR was used for clients who had reported trauma including systematic rape, murder, bereavement and violence. These clients may therefore be considered to have experienced emotional issues that were more severe than those who would benefit from EFT alone. All clients improved and statistically significant differences were achieved on the outcome measure used.

The use of a convenience sample of clients selected by the Healing Hands Network may have meant that those selected were more inclined towards seeking and using a novel therapy such as MR than other survivors. The results cannot therefore be generalised to other Bosnians survivors of war or other survivors of trauma.

The sample size in the current study was very small (n = 18) and all had existing links with HHN. The question therefore arises as to whether the findings from

this small select group of civilian survivors could generalise to a larger, wider population, for example war veterans and whether MR may be acceptable in other cultures, with other healing belief systems.

The rate of drop out of 22% (14/18) was much lower than in other studies of EFT (Karatzias *et al*., 2011[39%]; Brattberg, 2008 [40%]). This may be due to the participants' having existing links with HNN, or to the positive relationships they built with the MR practitioners. Indeed many noted in their comments how grateful they were to HHN and to the therapists who had volunteered to treat them. Licanin (2010) suggests that nearly all patients with PTSD experienced more than one etiological stressor. Using MR the clients were able to deal with multiple issues.

Research has demonstrated the long term effects of MR (Stewart *et al*., 2013). The participants in this study were followed up at four weeks. Future research should consider follow-up of participants to assess whether improvements are maintained over a longer period of time.

The sample size for this pilot study was not based on an a priori power analysis. This is important as the evidence in support of sample size determination is well-documented (Charles *et al*., 2009). Furthermore, the majority of participants were initially referred by HNN, but then 'self-selected' to take part thus selection bias may be an issues and the sample may not be fully representative of the population of civilian survivors.

The PTSD scale used was based on the PTSD-C-a validated tool that has been translated into Bosnian. PTSD symptom items on the PCL-C directly correspond to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; APA, 2000. However, it had been modified and so direct comparison with other studies that use this scale is not feasible. No other measurement scale was used and future research could consider using a clinician administered scale to provide a definitive diagnosis of PTSD for participants in the study. SUDS levels were not taken at the start and end of every session as clients were often very upset, so future research could include methods to facilitate consistent completion of the SUDS. Future research should also consider including additional outcome measures of subjective quality of life, such as the Manchester Short Assessment of Quality of Life (MANSA, Priebe *et al*., 1999), which has been used in studies of PTSD.

This small pilot study also relied solely on self-report measures, which may lead to potential bias. Future research in this area should consider using an objective measure such as the Clinician-Administered PTSD scale CAPS (REF Karatzias *et al*., 2011) alongside the self-report scales, to provide a measure from a clinician to corroborate the self-report measures and greatly strengthens the findings.

The sample was selected by the Healing Hands Network and was chosen according to those they felt could benefit most. This may have introduced selection bias. The sample was not therefore derived from a clinically diagnosed PTSD population. Future research should ensure that participants meet DSM-IV criteria for PTSD using scales such as the Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV; or the Clinician-Administered PTSD Scale for DSM-IV to ensure a clinical PTSD population.

The fact that all clients initially learn EFT and may have used EFT between sessions meant that it was not possible to evaluate the effect of using MR alone.

The small sample size of this pilot study did not permit subgroup analysis or the ability to infer its results to the wider population. The sample size was limited by the two weeks that the volunteer therapists were available and by the fact that they could then only offer a limited number of appointments in this short timescale. Clients were not followed up long term. Future research could use a larger sample and a longer term follow-up period.

4.1. Cost of Treatment

Clients in this study were limited to four, one hour sessions of MR over a period of two weeks and clients improved significantly overall. However many may have benefitted from further MR sessions to complete their treatment. For example, Stewart *et al*. (2013) revealed that an average of eight MR clinical sessions were required to fully treat clients.

Priebe *et al*. (2010) assessed the cost and outcome of PTSD treatment at four specialized treatment centers in Serbia, Croatia and Bosnia-Herzegovina and found that the recovery rate among patients treated in specialized centres several years after the war was poor and that symptom improvements were small. Priebe *et al*. (2010) noted that the recovery rate was not linked to service costs and suggested that improving recovery rates might require different treatment methods or different service models. The findings of the study suggest that the Matrix Reimprinting model outlined here may well offer a cost-effective alternative. Further research is however required to address this.

The follow-up period of a month was also relatively short and although the improvements were maintained at the four-week follow-up, future research should consider longer term follow-up to ensure that symptoms do not return.

The data was translated by the interpreters and no cross check was made of the translations as funding did not extend to this. Future research should consider audio recording interviews and transcribing them verbatim to facilitate expanding the qualitative aspects and to allow for more detailed systematic content analysis. The translation was also carried out by those employed by HNN and translators may not have translated any negative comments.

Other than one study evaluating MR for (Stewart *et al*., 2013), the authors are not aware of any other MR research ongoing or unpublished. This report is therefore the first ever published study of MR for civilian survivors of war.

5. CONCLUSION

In conclusion, MR shows promise as a useful clinical tool for PTSD. However, larger, longer research is required in order to provide definitive evidence of the long term effectiveness of MR, its acceptability to clients and its cost-effectiveness. Despite the limitations of the study outlined above, the results of this small pilot study highlight the positive role of EFT and MR in treating PTSD in civilian survivors of war and propose a promising future.

5.1. Conflict of Interest

All of the authors are qualified EFT and MR practitioners.

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