EMDR and the Military-In-Action Newsletter
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emdr RESEARCH FOUNDATION

Pain and Phantom Limb Pain

This monthly newsletter was created primarily for our colleagues trained in Eye Movement Desensitization and Reprocessing (EMDR) who work with military, veterans, and their families. The purpose of EMDR and the Military-in-Action Newsletter is to promote continued dialogue regarding the efficacy and current developments with EMDR and its use with these special populations.

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EMDR Studies

EMDR Therapy and Pain

EMDR Study

Wicking, M., Maier, C., Tesarz, J., & Bernardy, K. (2017). **EMDR as a psychotherapeutic approach in the treatment of chronic pain. Is eye movement desensitization and reprocessing an effective therapy for patients with chronic pain who do not suffer from posttraumatic stress disorder?** Der Schmerz, 1-7. doi:10.1007/s00482-017-0231-0.

ABSTRACT:

The efficacy of Eye Movement Desensitization and Reprocessing (EMDR) has been demonstrated for posttraumatic stress disorder. Despite promising research, it is still not clear if EMDR is a similarly effective treatment for chronic pain. Controlled trials are lacking and whether specific mechanisms underlie the effects remains unknown. The treatment of chronic pain aims at a reduction of subjective pain sensations. To achieve this goal without the usage of pain medications, i.e. through psychotherapy, is desirable for many reasons (e.g. reduction of treatment costs and side effects). Whether or not EMDR is an effective intervention for all chronic pain patients (or just a specific subgroup) constitutes an important question for psychological pain research.

Psychotherapies for the Treatment of Phantom Limb Pain

EMDR Study

Cárdenas, K., & Aranda, M. (2017).**Uso de psicoterapias como tratamiento del dolor de miembro fantasma [Psychotherapies for the treatment of phantom limb pain]. Revista Colombiana De Psiquiatria, 46(3), 178-186.** doi:10.1016/j.rcp.2016.08.003.

ABSTRACT:

Introduction: The phantom limb pain has been described as a condition in which patients experience a feeling of itching, spasm or pain in a limb or body part that has been previously amputated. Such pain can be induced by a conflict between the representation of the visual and proprioceptive feedback of the

previously healthy limb. The phantom limb pain occurs in at least 42 to 90% of amputees. Regular drug treatment of phantom limb pain is almost never effective.

Methods: A systematic review of the literature was conducted in Medline and Cochrane using the MESH terms "phantom limb pain" and "psychotherapy", published in the last 10 years, in English and Spanish, finding 49 items. After reviewing the abstracts, 25 articles were excluded for not being related to the objective of the re-search. Additionally cross references of included articles and literature were reviewed.

Objectives: To describe the psychotherapies used in the management of phantom limb pain, their effectiveness and clinical application reported in the literature.

Aims: The mechanisms underlying phantom limb pain were initially explained, as were the published studies on the useful- ness of some psychotherapies such as mirror visual feedback and immersive virtual reality, visual imagery, desensitization and reprocessing eye movements and hypnosis.

Conclusions: The phantom limb pain is a complex syndrome that requires pharmacological and psychotherapeutic intervention. The psychotherapies that have been used the most as adjuvants in the treatment of phantom limb pain are mirror visual feedback, eye movement desensitization and reprocessing (EMDR), imagery and hypnosis. Studies with more representative samples,specifically randomized trials are required.

EMDR Study

Amano, T.; Seuyama, A; Toichi, M. (2013). **Brain activity measured with near-infrared spectroscopy during EMDR treatment of phantom limb pain,** Journal of EMDR Practice and Research, 7(3), 144-153.

ABSTRACT:

This report describes a female client with phantom limb pain (PLP), who was successfully treated by eye movement desensitization and reprocessing (EMDR) using a PLP protocol, as well as her cerebral activities, measured by near-infrared spectroscopy (NIRS), throughout the therapeutic session. She suffered from paralysis in the left lower limb because of sciatic nerve damage caused by a surgical accident, in which she awoke temporarily from anesthesia during surgery and felt intense fear. When recalling this experience, the superior temporal sulcus was activated. However, at the end of the session, her PLP was almost eliminated, with a generalized decrease in cerebral blood flow. This case suggests the possibility of involvement of a posttraumatic stress disorder (PTSD)-like mechanism in the pathogenesis of PLP, as well as the possible efficacy of EMDR for this type of PLP.

EMDR Study

de Roos, C., Veenstra, A. C., de Jongh, A., den Hollander-Gijsman, M. E., van der Wee, N. J. A., Zitman, F. G., & van Rood, Y. R. (2010, March/April). **Treatment of chronic phantom limb pain using a trauma-focused psychological approach.** Pain Research & Management, 15(2), 65-71.

ABSTRACT:

Background: Chronic phantom limb pain (PLP) is a disabling chronic pain syndrome for which regular pain treatment is seldom effective. Pain memories resulting from long-lasting preamputation pain or pain flashbacks, which are part of a traumatic memory, are reported to be powerful elicitors of PLP.

Objective: To investigate whether a psychological treatment directed at processing the emotional and

somatosensory memories associated with amputation reduces PLP.

Methods: Ten consecutive participants (six men and four women) with chronic PLP after leg amputation were treated with eye movement desensitization and reprocessing (EMDR). Pain intensity was assessed during a two-week period before and after treatment (mean number of sessions = 5.9), and at short- (three months) and long-term (mean 2.8 years) follow-up.

Results: Multivariate ANOVA for repeated measures revealed an overall time effect ($F[2, 8]=6.7$; $P<0.02$) for pain intensity. Pairwise comparison showed a significant decrease in mean pain score before and after treatment ($P=0.00$), which was maintained three months later. All but two participants improved and four were considered to be completely pain free at three months follow-up. Of the six participants available at long-term follow-up (mean 2.8 years), three were pain free and two had reduced pain intensity.

Conclusions: These preliminary results suggest that, following a psychological intervention focused on trauma or pain-related memories, substantial long-term reduction of chronic PLP can be achieved. However, larger outcome studies are required.

EMDR Study

Rostaminejad, A., Behnammoghadam, M., Rostaminejad, M., Behnammoghadam, Z., & Bashti, S. (2017). **Efficacy of eye movement desensitization and reprocessing on the phantom limb pain of patients with amputations within a 24-month follow- up.** International Journal of Rehabilitation Research. doi:10.1097/MRR.0000000000000227.

ABSTRACT:

The aim of this study was to evaluate the efficacy of eye movement desensitization and reprocessing (EMDR) on the phantom limb pain (PLP) of patients with amputations within a 24-month follow-up. This study was a randomized-controlled trial. A total of 60 patients with amputations were selected by a purposive sampling and patients were divided randomly into two experimental and control groups. Samples were assigned through randomized allocation. EMDR therapy was administered individually to the experimental group participants in 12 one-hour sessions over a 1-month period, In each session, the patient completed the Subjective Units of Distress Scale and a pain-rating scale before and after the intervention. Follow-up measures were obtained 24 months later for the experimental group. The participants in the control group were measured on the two scales at an initial session and again after 1- and 24-month follow-up. The mean PLP decreased in the experimental group between the first and last sessions and remained so at a 24-month follow-up. No decrease occurred for the control group over the 1- and 24-month period. The differences were statistically significant ($P<0.001$) according to a repeated-measures analysis of variance. EMDR therapy proved to be a successful treatment for PLP. Because of its efficacy and the fact that the positive effects were maintained at the 24-month follow-up, this therapy is recommended for the treatment of PLP.

EMDR Study

Russell, M.D. (2008, April). **Treating traumatic amputation-related phantom limb pain: a case study utilizing eye movement desensitization and reprocessing within the armed services.** Russell, Mark Charles. Clinical Case Studies, 7(2), 136-153. doi:10.1177/1534650107306292.

ABSTRACT:

Since September 2006, more than 725 service members from the global war on terrorism have survived combat-related traumatic amputations that often result in phantom limb pain (PLP) syndrome. Combat amputees are also at high risk of developing chronic mental health conditions such as PTSD and clinical depression as they deal with wartime experiences, rehabilitation, and post rehabilitation adjustments. One active-duty patient was referred to a military outpatient clinic for treatment of PLP and PTSD following a traumatic leg amputation from a noncombat-related motor vehicle accident. Four sessions of eye movement desensitization and reprocessing (EMDR) led to elimination of PLP and a significant reduction in PTSD, depression, and phantom limb tingling sensations. A detailed account of this treatment, as well as a review of the benefits of EMDR research and treatment in the military, is provided. The results are promising but in need of further research. [Author Abstract]

EMDR Study

Paymard, A., Moghadam, M.B., Kargar, L., Peighan, A., Shahnavazi, A., Mirzaee, M.S., Mirzaee, S., & Roozitalab, M. (2016). **Effect of Eye Movement Desensitization and Reprocessing on phantom limb pain in patients with amputation. Journal of Anesthesiology and Pain** (Persian), Spring 2016, Vol 6, No. 3. Pp 29-35.

ABSTRACT:

Aim and Background: More than 50% of patients suffer from phantom limb pain after amputation. This study was conducted to identify the effect of eye movement desensitization and reprocessing on phantom limb pain in patients with amputation.

Methods and Materials: This quasi experimental study was performed in Yasuj City between 2012 to 2014. A total of forty (40) patients suffering from phantom limb pain, were selected using sampling and randomly divided into experimental and control groups. In the experimental group, eye movement desensitization and reprocessing therapy was performed in twelve (12) sessions. The control group received no intervention. Data were gathered on phantom limb pain at pretreatment and post-treatment and analyzed using descriptive statistics, T test, Paired T test and Chi- square.

Findings: The results showed that there is a significant difference between the mean of phantom limb pain before and after intervention in the experimental group ($P<0.001$). Also, here was no significant change in the mean of phantom limb pain in the control group after the intervention compared to before intervention ($P>0.05$).

Conclusions: Eye movement desensitization and reprocessing reduced phantom limb pain in patients with amputation. Therefore, its use as a therapeutic and alleviative method could be suggested for patients suffering from phantom limb pain.

EMDR Study

Schneider, J., Hofmann, A., Rost, C., & Shapiro, F. (2008, January-February). **EMDR in the treatment of chronic phantom limb pain.** Pain Medicine, 9(1), 76-82. doi:10.1111/j.1526-4637.2007.00299.x.

ABSTRACT:

Objective. Little research substantiates long-term gains in the treatment of phantom limb pain. This report describes and evaluates an eye movement desensitization and reprocessing (EMDR) treatment with extensive follow-up.
Design. A case series of phantom limb pain patients.
Setting. In-patient hospitalization and out-patient private practice.
Patients. Case series of five patients with phantom limb pain ranging from 1 to 16 years. All patents were on extensive medication regimens prior to EMDR.
Interventions. Three to 15 sessions of EMDR were used to treat the pain and the psychological ramifications.
Outcome Measures. Patients were measured for continued use of medications, pain intensity/frequency, psychological trauma, and depression.
Results. EMDR resulted in a significant decrease or elimination of phantom pain, reduction in depression and posttraumatic stress disorder (PTSD) symptoms to subclinical levels, and significant reduction or elimination of medications related to the phantom pain and nociceptive pain at long-term follow-up.
Conclusions. The overview and long-term follow-up indicate that EMDR was successful in the treatment of both the phantom limb pain and the psychological consequences of amputation. The latter include issues of personal loss, grief, self-image, and social adjustment. These results suggest that (1) a significant aspect of phantom limb pain is the physiological memory storage of the nociceptive pain sensations experienced at the time of the event and (2) these memories can be successfully reprocessed. Further research is needed to explore the theoretical and treatment implications of this information-processing approach.

EMDR Study

Sinici, E. (2016). **Evaluation of EMDR therapy in treatment of phantom limb pain.** Dusunen Adam. The Journal of Psychiatry and Neurological Sciences, 29:349-358. doi:10.5350/DAJPN2016290406.

ABSTRACT:

Objective: The aim of this study was to determine the effectiveness of Eye Movements of Desensitization and Reprocessing (EMDR) therapy in the treatment of the phantom limp pain.**Method:** Participants of this study consist of amputation applied 14 inpatients in the Orthopaedics and Traumatology Department of Gülhane Military Hospital. Amputation was applied to four patients with diabetic foot and ten patients with trauma. Five patients had three sessions, eight patients had five sessions and two patients had six sessions of EMDR applications. The treatment was ended when patients expressed that they were not in pain. Following amputation, McGill Melzack Pain Questionnaire, State Anxiety Inventory (STAI-I), the Beck Depression Inventory (BDI) and the Symptom Checklist (SCL-90-R) were applied at the end of the first week before EMDR applications and just after the EMDR applications. These tests were given to the patients who were invited to control again after one month and three months. The SCL-90-R was applied again in the third month control.
Results: It was seen that phantom pain significantly decreased before the treatment, among shortly after, one month and 3 months later controls.
Conclusion: In this study, EMDR therapy has been found to provide a significant improvement over the phantom pain. Based on the findings, EMDR therapy has been shown effective with early application on phantom pain.

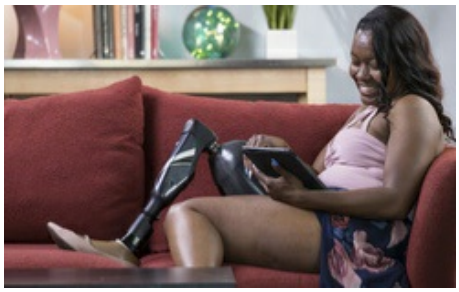
EMDR Study

Wilensky, M. (2006). **Eye movement desensitization and reprocessing (EMDR) as an effective treatment for phantom limb pain**, Journal of Brief Therapy, 5, 31-44.

ABSTRACT:

Five consecutive cases of phantom limb pain were treated with EMDR. The time since the amputation ranged from one week to three years. Four of the five clients completed the prescribed treatment and reported that pain was completely eliminated, or reduced to a negligible level. The one client who stopped treatment chose to do so after reducing his pain by one half. The standard EMDR treatment protocol was used to target the accident that caused the amputation, and other related events. The five cases are described in detail. The treatment and theoretical implications are explored and recommendations are made for future research.

The Shocking Prevalence of Amputations among OIF and OEF Veterans



EMDR Study

Armstrong, A. J., Hawley, C. E., Darter, B., Sima, A. P., DiNardo, J., & Inge, K. G. (2018). **Operation Enduring Freedom and Operation Iraqi Freedom veterans with amputation: An exploration of resilience, employment, and individual characteristics.** Journal of Vocational Rehabilitation 48, 167-175. IOS Press.

ABSTRACT:

Background: Since 2002 approximately 1,700 US military service members have experienced trauma related amputations from injuries incurred in Afghanistan and Iraq (Fisher, 2015).
Objective: This study explores the variables of resilience, individual characteristics, and employment status of a sample of these Veterans who served in Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) and sustained an amputation.
Methods: Veterans identified through the VA Corporate Data Warehouse (N = 165) completed a survey on their experiences following amputation.
Results: Results indicate that several variables were significantly related to resilience, to include employment status, pain status, and prosthetic use.
Conclusions: Recommendations for future research and practice are provided.

In the News

Montgomery, N. (2017, March 18).**2016 marks first year without combat amputation since Afghan, Iraq wars began.** Retrieved from Stars and Stripes.

Melissa Stockwell after taking second place at the Paratriathlon World Championships in New Zealand in 2013.
COURTESY OF MELISSA STOCKWELL

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EMDR Fidelity Rating Scale (Version 2)

Deborah L. Korn, Psy.D.
Louise Maxfield, Ph.D.
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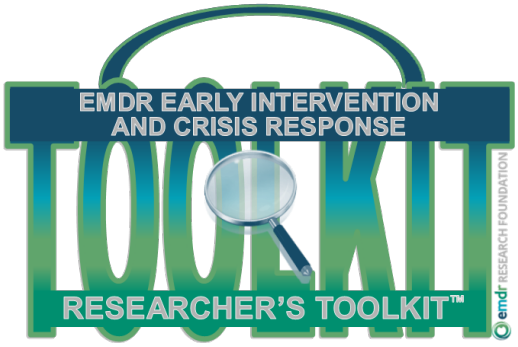

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