

Second Research Study on the Provision of the EMDR Integrative Group Treatment Protocol with Child Victims of Severe Interpersonal Violence

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Innocence in Danger-Colombia.

This study presents the results of the application of the EMDR Integrative Group Treatment Protocol (EMDR-IGTP) and the EMDR Individual Therapy Protocol with twenty five children (n=25, 10 boys and 15 girls) aged between 9 and 14 years old who were victims of severe interpersonal trauma (e.g., rape, sexual abuse, physical and emotional violence, neglect, abandonment). The application of Group and Individual EMDR therapy was carried out within the context of a multicomponent phase-based trauma treatment approach during a Trauma Recovery Camp in the city of Cali, Colombia. The results obtained in SPRINT Scale show a significant statistical improvement in participants after treatment with EMDR therapy, with treatment results continuing to improve at follow-up measured two months after the therapy. The results also exhibit a global subjective improvement in the participants. Further research is needed to assess the EMDR-IGTP and the individual therapy intervention effects as part of a multicomponent and phase-based approach with children who have suffered severe interpersonal violence.

Keywords: EMDR Integrative Group Treatment Protocol (EMDR), EMDR therapy with children; Interpersonal Violence in children; Complex Trauma

The Adverse Childhood Experiences Study (ACE) conducted by Felitti and colleagues (1998), establishes the relationship between childhood abuse and familiar dysfunction to many of the leading causes of death in adults.

Studies had shown the cumulative effect of multiple adverse childhood experiences in the increase of the risk for serious disorders in adulthood such as depression, suicide, substance abuse, lung cancer, heart disease, chronic lung disease, diabetes and liver disease in adulthood (Chapman et al., 2004; Dong, Dube, Felitti, Giles & Anda, 2003).

Additionally, it has been observed that exposure to multiple adverse childhood experiences, increases the risk of harmful behaviors affecting health as smoking, obesity, drug and alcohol abuse, teenage pregnancy and sexually transmitted diseases (Anda et al., 2007).

There is a clinical impression that exposure to multiple types of adversity in childhood is associated with greater clinical complexity, both in the number of symptoms presented and the number of comorbid disorders (Briere, Katman, & Green, 2008, Cloitre et al., 2009).

In relation to sexual abuse in children, it has been reported it increases the risk of multiple emotional and behavioral problems, including anxiety, depression, aggression, dissociation, low self-esteem and sexualized behavior (Choi & Oh, 2013)

Treatment of Children Who Are Abused

Courtois & Ford (2009) recommend a multicomponent phase-based trauma treatment approach for the treatment of complex traumatic stress. The first phase of treatment focuses on patient safety, symptoms stabilization and the improvement in basic life competencies. The second phase includes the exploration of traumatic memories by first reducing acute emotional distress resulting from these memories, and then re-evaluating their meaning and integrating them in a positive and coherent identity.

The International Society for Traumatic Stress Studies (ISTSS) conducted a survey between expert mental health professionals about the best practices to treat Complex Post Traumatic Stress Disorder (PTSD; Cloitre et al., 2011). For first-phase treatment approaches, emotion focused and emotion regulation strategies received the highest ratings, while education about trauma and mindfulness received top second-line rating.

For second-phase treatment approaches, individual therapy was identified as a first-line strategy for the processing of traumatic memories, and group work combined with individual therapy received a top second-line rating.

EMDR Therapy

Eye Movement Desensitization and Reprocessing Therapy (EMDR) is recommended for the treatment of Posttraumatic Stress Disorder in children, adolescents and adults by the World Health Organization (2013) and by numerous international guidelines such as the Cochrane Review (Bisson & Andrew, 2007).

This therapy was developed by Dr. Francine Shapiro (Shapiro, 2001), and is an integrative approach to the treatment of trauma, adverse life experiences or psychological stressors.

For Ecker, Ticic, & Hulley (2012), psychotherapies can be divided between those that are Counteractive and those that are Transformative. Counteractive therapies attempt to control and counteract the symptoms with a wide range of strategies. These are reliant upon the neocortex trying to control the subcortical emotional centers of the brain, such as the limbic system and the midbrain PAG area. The classic example of this type of therapy is Cognitive Behavioral Therapy (CBT).

These psychotherapies can provide the person with a new emotional learning that will compete with existing neural pathways of emotional disturbance. However, there is no guarantee that the new emotional learning will succeed counteracting this emotional disturbance.

Transformative therapies (such as EMDR therapy) produce changes in the deeper emotional centers of the brain, which then flow on to the higher thinking centers of the neocortex. Hence there is no need to counteract the distressing material, since this has been erased via changes in neural pathways at the synaptic level (specialized intercellular connection between neurons).

The neural pathways associated with distressing emotional learning, is altered in terms of synaptic disconnection, hence the distress disappears and therefore does not need to be controlled or counteracted. People will remember the event with their self-biographical memory, but no longer produce them any distress.

The EMDR Integrative Group Treatment Protocol

The EMDR Integrative Group Treatment Protocol (EMDR-IGTP) was developed by members of The Mexican Association for Mental Health Support in Crisis (AMAMECRISIS) to deal with the extensive need for mental health services after Hurricane Pauline ravaged the coasts of the states of Oaxaca and Guerrero in the year 1997.

This protocol is also known as the Group Butterfly Hug Protocol, the EMDR Group Protocol and The Children's EMDR Group Protocol. See the scripted Protocol in Artigas, Jarero, Alcalá & López Cano (2009).

This protocol has been used in its original format or with adaptations to suit the circumstances, in numerous places around the world (Gelbach & Davis, 2007; Maxfield, 2008). Case reports and field studies have documented its effectiveness with children and adults after natural or man-made disasters, during ongoing war trauma, ongoing geopolitical crisis and children with severe interpersonal trauma (Adúriz, Knopfler, & Blüthgen, 2009; Jarero & Artigas, 2009; Jarero & Artigas, 2010; Jarero, Artigas, & Hartung, 2006; Jarero, Artigas, Mauer, López-Cano, & Alcala, 1999; Jarero, Artigas, & Montero, 2008; Jarero, Roque-Lopez, & Gomez, 2013; Zaghrou- Hodali, Alissa, & Dodgson, 2008).

A new implementation of this protocol for interpersonal trauma was tested in the Democratic Republic of Congo. The field study showed that after two sessions of the EMDR Group Protocol, the 50 adult female who were rape victims reported cessation of Posttraumatic Stress Disorder Symptoms and lower back pain (Allon, as cited by Shapiro, 2011).

Background

Pilot Studies

Innocence in Danger (IID) is a worldwide movement of child protection against violence and sexual exploitation. It is a nonprofit organization created by a group of citizens in April 1999. This organization has a bureau in Colombia and functions as an association economically independent from other bureaus of Innocence in Danger around the world.

Since 2008 Innocence in Danger-Colombia, has been operating in the city of Cali. Their humanitarian mission is to provide support and psychological treatment to children victims of violence and to advocate for the protection of all children by educating the Colombian society about child mistreatment in all its forms. IID-Colombia specializes in trauma prevention and psychological treatment of posttraumatic stress in children and adolescents, caused by neglect (e.g., abandonment), physical violence (e.g., beatings), emotional violence (e.g., verbal abuse) and particularly sexual violence (e.g., rape and sexual abuse). Making an effort to include families and develop support networks to help the intervention process.

Since its creation, IDD-Colombia has conducted three pilot studies, with a total of 70 children attending to three psychological recovery camps in Cali. The promising results of these three camps lay the groundwork for the first research study.

First Research Study

The first research study was conducted in 2011 from December 1 to 7. It took place during a Trauma Recovery Camp in the city of Cali, Colombia. Thirty-four children (n=34, 18 boys and 16 girls), aged between 9 to 14 years participated. All had been victims of severe interpersonal violence (e.g., rape, sexual abuse, physical and emotional abuse, neglect, abandonment). Most (n = 32) were victims of rape or sexual abuse.

One group (n = 19, 11 boys and 8 girls), came from an Institution accredited by the Colombian Institute of Family Well-being. These children had lived in the streets or had been removed from their families for their own problematic behavior. The other group (n = 15, 7 boys and 8 girls), lived with their families and were victims of rape, sexual abuse and physical and emotional violence. None of the children had received previous specialized psychological trauma treatment (Jarero, Roque Lopez, & Gomez, 2013).

The 34 participating children received a multicomponent phase-based therapy (Courtois & Ford, 2009), for the treatment of complex traumatic stress. During the first phase of treatment, the children learned emotion focused and emotion regulation strategies and mindfulness. For the second phase, children participated in The EMDR Integrative Group Treatment Protocol (EMDR-IGTP), which consisted in two group sessions for the reprocessing of traumatic memories previously selected. Those children ($n = 26$) who did not achieve a score of zero in the Subjective Units of Disturbance Scale (SUDS), received one or two sessions of Individual EMDR Therapy.

The results of this study (Jarero, Roque Lopez, & Gomez, 2013) demonstrated the effectiveness of combining the EMDR Integrative Group Treatment Protocol and Individual EMDR Therapy in resolving PTSD symptoms in children who have experienced severe interpersonal trauma.

It should be noted that although a single traumatic memory was targeted at the beginning of group reprocessing (“*the memory that best represent all the adverse experiences that you have lived*”), the reprocessing effects were generalized to the entire memory cluster of similar incidents (e.g., rape, sexual abuse, physical and emotional abuse, neglect, abandonment). Shapiro (2001) mentioned that when the patient selects for reprocessing an incident that represents a particular cluster “*clinical reports have verified that generalization will usually occurs, causing a reprocessing effect throughout the entire cluster of incidents*” (p. 207). The obtained results encouraged researchers to conduct this second study.

Second Research Study

Method

The Latin American & Caribbean Foundation for Psychological Trauma Research review board approved the research protocol. All participant had parents or legal guardian’s informed consent.

Participants

Twenty-five children ($n = 25$, 10 boys and 15 girls), aged between 9 to 14 years attended to the Trauma Recovery Camp. All had been victims of severe interpersonal violence (e.g., rape, sexual abuse, physical and emotional abuse, neglect, abandonment). Fourteen of them ($n = 14$) were victims of repeated rape or sexual abuse. The first group ($n = 11$, 7 boys and 4 girls), came from an Institution accredited by the Colombian Institute of Family Well-being. The second group ($n = 14$, 3 boys and 11 girls), lived with their families. In this article, we will refer to the first group as “Institution children” and the second group as “Family children”.

Procedure

This camp was carried out in a farm 25 km from the city of Cali, in Cali-Buenaventura road (on the Pacific Port), from Thursday morning November 29 to Thursday afternoon December 6 in 2012 (8 full days and 7 nights). The therapeutic work and research were conducted on 8 stages.

Stage 1: Previous to the commencement of the camp, psychologists and social workers met individually with Institution and Family children (with parental consent) to elaborate their clinical history and inform them about their assistance to a camp where they will amuse and will receive psychological treatment to heal what happened. Informing them as well that for this purpose they would have to remember what happened (traumatic memory). Since the children had not lived simultaneously the same traumatic event, such as a natural disaster or man-made disaster, each traumatic memory to reprocess was different. The children with severe dissociative symptoms or severe aggressive behavior were not invited to participate in the camp; nevertheless, the Institution informed they were already receiving psychiatric treatment.

Stage 2: On Thursday November 29, 2012, while the children became familiar with the space and were engaged in sports and recreational activities leaded by a sports professional and a recreational professional, two experienced mental health professionals specialized in EMDR therapy, trained all the adult team (psychologists, social workers, educational workers, artists, photographers and administrative staff), about the work that would develop during camp.

In this training, the adult team received education about psychological trauma and EMDR therapy. The value of the camp activities was highlighted because they were designed to facilitate experiences of safety and emotional stability. It was made a review of the strategies to achieve emotional stability in children (Servan-Schreiber, 2003), and of the construction of wellness neural networks through the practice of Mindfulness (Hanson & Mendius, 2009; Nhat Hanh, 2002). Information about the benefits of cardiac coherence was given, in order to facilitate that children learned to get in psychophysiological coherence promptly, as a form to prevent and cope with stress (O' Hare, 2008).

In 1995, the term "cardiac coherence" was adopted in cardiology. Today this term has extended to the field of psychology, alluding to our emotions and our perception, influencing our biology (our hormonal and nervous system and our neural connections).

Also, special attention was given to inform the members of the "Emotional Protection Team" of the importance of always showing a deep, loving, and respectful presence in the emotionally difficult moments (Jarero et al., 2008), and it was explained that this kind of presence might increase children's memory networks of positive information and could be a resource for the future.

Stage 3: The SPRINT Scale (Connor & Davidson, 2001; Vaishnavi et al., 2006) was administered to all children on Friday November 30, 2012. This was done before any other activity with the purpose of obtaining a baseline (pre-camp activities) and observes the effect of the camp activities prior to the EMDR therapy.

From November 30 to December 2, 2012, activities of the first phase of complex traumatic stress treatment were provided (Courtois & Ford, 2009). The children learned emotion focused and emotion regulation strategies and mindfulness. And they become familiar with the EMDR therapy.

Stage 4: On Monday morning December 3, 2012, SPRINT Scale (Connor & Davidson, 2001; Vaishnavi et al., 2006) was administered to all children, in order to obtain a pre-EMDR assessment to compare with measures administered at baseline, posttreatment and follow-up.

Subsequently, the children participated in the EMDR Integrative Group Treatment Protocol, which consisted in three sessions of traumatic memories reprocessing. The first session was on Monday morning of December 3, the second session was held in the same day afternoon and the third session was conducted on Tuesday morning of December 4.

Stage 5: On December 5 and 6, 2012 (Wednesday and Thursday), the standard protocol of Individual EMDR Therapy was provided to the boys and girls whose had not reach zero in the Subjective Units of Disturbance Scale (SUDS) during the three reprocessing sessions of the EMDR Integrative Group Treatment Protocol. Eleven children (n = 11, 3 from Institution and 8 from family) received Individual EMDR Therapy. Nine (n=9) children needed one session and two (n=2) children needed two sessions to reach SUD=0.

One Institution child that had not reached zero in the SUD scale refused to receive individual therapy, however, the SPRINT results at posttreatment showed a significant symptoms reduction to a minimum level.

Stage 6: On December 13, 2012, the posttreatment assessment was administered to 24 children. 17 children (4 of Institution and 13 of family) were evaluated at the offices of IDD-Colombia and 7 Institution children in “La María” Ranch (300 km. from Cali).

Stage 7: On Saturday February 2, 2013, the follow-up assessment was administered to 20 children (from Institution and Family) during the “Journeys of Art and Peace” in Cali.

Measures

Short PTSD Rating Interview

The Short PTSD Rating Interview Scale (SPRINT; Connor & Davidson, 2001; Vaishnavi et al., 2006), is an eight-item self-assessment questionnaire with solid psychometric properties. It can be used as a reliable, valid, and homogeneous measurement of PTSD

symptoms severity and global improvement. It serves as a measure of somatic distress, stress coping, and work, familiar, and social impairment.

Each item is rated on a 5-point scale: 0 (*not at all*), 1 (*a little bit*), 2 (*moderately*), 3 (*quite a lot*), and 4 (*very much*). Scores between 18 and 32 correspond to strong or severe PTSD symptoms, between 11 and 17 to moderate symptoms, between 7 and 10 to mild symptoms, and 6 or less indicates either no or minimal symptoms.

The SPRINT also contains two additional items to measure global improvement according to a percentage of change and a severity rating. This questionnaire was translated from English to Spanish and from Spanish to English, reviewed, authorized by one of its authors and adapted to a language appropriate for children

SPRINT performs in a similar way to the Clinician-Administered PTSD Scale (CAPS) in the assessment of PTSD symptoms clusters and total scores. It can be used as a diagnostic instrument (Vaishnavi et al., 2006). It was found that in the SPRINT, a cutoff score of 14 or more carry 95% sensitivity for detecting PTSD and 96% specificity for ruling out the diagnosis, with an overall accuracy of correct assignment being 96% (Connor & Davidson, 2001).

Subjective Units of Disturbance Scale

The Subjective Units of Disturbance Scale (SUD; Shapiro, 2001; Wolpe, 1958), is an integral part of the EMDR therapy treatment (Shapiro, 2001), and their use has been demonstrated in EMDR therapy studies with adults with psychological trauma. The SUD scale was shown to have a good concordance with pre-post physiological autonomic measures of anxiety (e.g., Wilson, Silver, Covi, & Foster, 1996). Physiological deactivation and relaxation were related to a decrease in the SUD score at the end of a session (Sack, Lempa, Steinmetz, Lamprecht, & Hofmann, 2008), and the SUD was significantly correlated with posttreatment therapist-rated improvement (Kim, Bae, & Park, 2008).

A children-adapted version of the SUD was used. Instead of simply asking children their level of disturbance, there were shown pictures of faces representing different levels of emotions (from 0 to 10, where 0 showed no disturbance and 10 showed severe disturbances). They were asked to select the face that best represented their emotions at the time and to write the corresponding number on their drawing. During the entire Group Protocol children were assisted by members of the psychological recovery camp team called "Emotional Protection Team".

Treatment

Empirical studies of people with histories of complex trauma derived from sexual abuse in childhood, have found that traumatic memory processing is reasonably well tolerated and beneficial when conducted in a multicomponent form (e.g., Chard, 2005). Tufnell (2005) concluded that EMDR therapy is appropriate for children and adolescents with comorbid

mental health problems when used in conjunction with other treatments. For that reason, there may be an advantage integrating EMDR therapy with other treatments when comorbid disorders or social issues also need to be targeted (Fleming, 2012).

First Phase of Trauma Treatment

In this study, the first phase of psychological trauma therapy was conducted within the context of a therapeutic camp setting and consisted in a range of different activities to develop emotional stability and life competencies.

During the second phase of treatment, intensive EMDR therapy was administered. This study examines the effectiveness of both phases in reducing the severity of PTSD symptoms in the participants.

It is important to note that the first phase of psychological trauma therapy corresponds to Phases 1 and 2 of the standard EMDR therapy procedures.

During the First Phase of Trauma Treatment the camp activities included the following:

Children woke up early in the morning, practiced soft gymnastics and hatha yoga. These activities had the purpose of supporting the processes of mental healing (Patanjali, 1991). According to van der Kolk (2012) yoga practice has been successfully used as an intervention for resolving traumatic stress because it facilitates the increase of positive mood, acceptance, and a peaceful stance through the care of body and the control breathing.

During each day, the children engaged in various activities and workshops. For example, one day, they visited the Gold Museum in Cali, as an experience of participation in city life and for cultural exposure. Each night, before going to bed, the children gathered to relax, tell stories and listen to children's music.

Several art workshops were conducted by professional artists to help children get in touch with their creative potential and their inner world. For example the painting workshop "Recovering the child that I am" had the objective of finding their "inner child" who is beyond pain and suffering and so to experience security and confidence (Tafurt, personal communication, July 3, 2011), as well as to recognize their external body image. To accomplish this, each children laid on a large sheet of paper and a partner outlined her/his silhouette, then the children colored their silhouette, stand and watched it carefully.

Three dance and music improvisation workshops were conducted. During these workshops the children played local instruments (percussion, maracas and flutes) to accompany the songs and dances they improvised. In the songs the children told their own story, which led to the verbal expression of his painful memories and an integrated discourse of their trauma history. This composition was performed the camp's closing day. Also, there was a "songs workshop" which allowed each child to listen their own voice. Then together, sang the song "The dream of living", created for them by one of the professional artists who attended the camp.

Children witnessed the scenic performance of three tales of Rafael Pombo (1833 - 1912), a Colombian writer known as the poet of children. The chosen stories carry messages of hope to find what you had lost.

In the sculpture workshop, after listening a children's tale starred by animals, each of them sculpted the figure of the animals they liked more, and then, painted and decorated them.

In the theater workshop, the children played theatrical games to promote the contact with their bodies and the expression of feelings, for example, a game consisting in one child making movements and gestures in the center of a circle formed by children whom have to repeat these movements. The repetition of these body movements allows the contact with the self body sensations and gave the children the opportunity of expressing them (van der Kolk, 1994).

Physical activities consisted in different sports and recreational activities. The therapeutic purposes were to achieve the known benefits of physical exercise, to improve social skills and to help the children to reconcile with their bodies and the world around them (Binswanger, 1971).

Emotion focused and emotion regulation strategies and Mindfulness

The aim of these strategies was that children could observe and regulate their thoughts, emotions and behaviors. The following activities were carried out:

A) Stories following recommendations of Lovett (1999). Initially the story presents something positive to attract the child's attention, then a traumatic event and related symptoms is described and the story concludes with resolution of trauma and positive beliefs.

b) Mindfulness. van der Kolk (2006) posits that the treatment of traumatic stress may require Mindfulness. This means, learning to be a careful observer of the ebb and flow of inner experience, and be aware of thoughts, feelings, body sensations and impulses emerging. In the camp, the children learned the practice of Mindfulness (Williams, Teasdale, Segal, & Kabat-Zinn, 2007) to increase their inner experience of the body and to develop an attitude of compassion toward self (Nhat Hanh, 1974).

With the purpose of practice Mindfulness several times in the day, a bell was ringed at different moments during the day. When the children heard the bell ringing they had to suspend their activities and take three breathings while practicing mindfulness.

c) In the human values workshop, the children used imagery and positive cognitions to visualize a future full of realistic possibilities integrated with profound human values.

d) The spiritual orientation focused on encouraging the children to be caring towards self and others. *"The Spiritual or Spirituality is a concept that goes beyond the religion or Spiritual Traditions. Every human being has a sense of spirituality. Spirituality is the essence of life, the beliefs and values that give meaning to existence and what is considered sacred. It is the understanding of self, God, others, the universe and the relationships between"*. Rev. Naomi Paget (2013, p.1).

e) Psychotherapeutic biodynamic massages were provided to the children to enhance relaxation and to increase children's feeling of security inside their own body (Boyesen, 1985).

Specific activities to familiarize children with EMDR Therapy

On Friday November 30, the children participated in an artistic activity including drawing, painting and theater called "Masks". This group activity initiated as a game and gradually the children expressed different feelings such as shame, remorse, guilt, humiliation, contempt, disgust, anxiety, fear, terror, discomfort, frustration, anger, hatred, disappointment, sadness, grief, despair, gratitude, appreciation, curiosity, interest, passion, happiness, pleasure, joy and love. The gestural expressions were accompanied with voice.

Subsequently, each child drew and colored the mask representing the body sensation and feeling with which they were most identified. The purpose of this exercise was that children could safely contact with their feelings and body sensations and distinguish between their own feelings and of others, generating empathy.

On Sunday December 2, children witnessed the play "Buddy the Dog's EMDR" (Meignant, 2007), performed by professional actors. Subsequently they colored the drawings of the book with the same name. The aim was to familiarize children with the EMDR therapeutic treatment they would receive.

Later they carried out the activities of creating their "safe place" and "normalizing the reactions" whose aim is to recognize, to validate, and to normalize the signs and symptoms of the posttraumatic stress (Artigas et al., 2009). Then the "Emotional Protection Team" assisted the children in learning and practicing the Butterfly Hug (Artigas, 2011) and becoming familiar with the "little faces of emotions", a tool used to teach children to observe and report their Subjective Units of Disturbance (SUD) Scores.

Second Phase of Trauma Treatment

The second phase of trauma treatment corresponds to Phases 3-7 of EMDR therapy (Shapiro, 2001). During this phase, Group and Individual Intensive EMDR Therapy were provided.

There is research suggesting that the administration of EMDR therapy in an intensive or concentrated format can be very effective in reducing symptoms of trauma (Abel, 2011; Grey, 2011; Wesson & Gould, 2009). For example, Intensive EMDR therapy can be provided in several subsequent days, or twice a day (morning and afternoon).

In this study, we provided The EMDR Integrative Group Treatment Protocol (EMDR-IGTP) to the 25 children, which had three group sessions of traumatic memories reprocessing. The first session was on Monday morning December 3, the second session was that same day in afternoon, and the third session on Tuesday Morning December 4. The same procedures of the first trauma recovery camp were followed (Jarero, Roque Lopez, & Gomez, 2013).

On December 5 and 6 (Wednesday and Thursday), 2012, the Individual EMDR Therapy according to the standard protocols was provided to children who did not achieve a score of zero in SUD during the three EMDR IGTP sessions. The total number of children who received Individual EMDR Therapy was 11 (3 Institution children and 8 Family children). 9 children needed one session and 2 children needed two sessions to reach SUD=0.

The Group and Individual EMDR Therapy were administered by three EMDR-certified therapists whom had training and experience working with children and vulnerable populations.

Important Note: As we did in the first trauma recovery camp study, because this was a population with complex trauma, the EMDR-IGTP was adapted to treat the *Cluster of Traumatic Memories/ Cumulative Trauma Exposure Memory Network*. That is, the memory networks where all the adverse experiences were dysfunctionally stored in the brain (Shapiro, 2001).

For this purpose, at the beginning of the first EMDR-IGTP reprocessing session, EMDR clinicians asked the children to: “*choose for reprocessing the memory that best represent all the adverse experiences that you have lived*”.

In order to verify the reprocessing generalization effect, at the beginning of the third EMDR-IGTP reprocessing session, EMDR clinicians asked the children to: “*run a mental movie of all the adverse experiences you have lived and choose for reprocessing any presently distressing memory.*”

The children’s drawings clearly showed the *Cluster of Traumatic Memories reprocessing* with different adverse experiences in each drawing (e.g., rape, sexual abuse, physical and emotional violence, neglect, abandonment).

The children who received Individual EMDR Therapy were also requested to run the mental movie and chose for reprocessing any memory that was disturbing at that time. Shapiro (2001) mentioned that “*incidents that contain additional factors (or significant variants) may require individual targeting for complete resolution*” (p. 207).

Results

The strong effects of the EMDR Integrative Group Treatment Protocol (EMDR-IGTP) are evident in the decreased SUD scores as shown in Figure 1. Institution children had a greater decrease in SUD scores in the first session compared with Family children. However, their SUD scores rise at the end of the second session and dropped again by the end of the third session, parallel to the Family children SUD scores. The Family children SUD scores showed a steady decline.

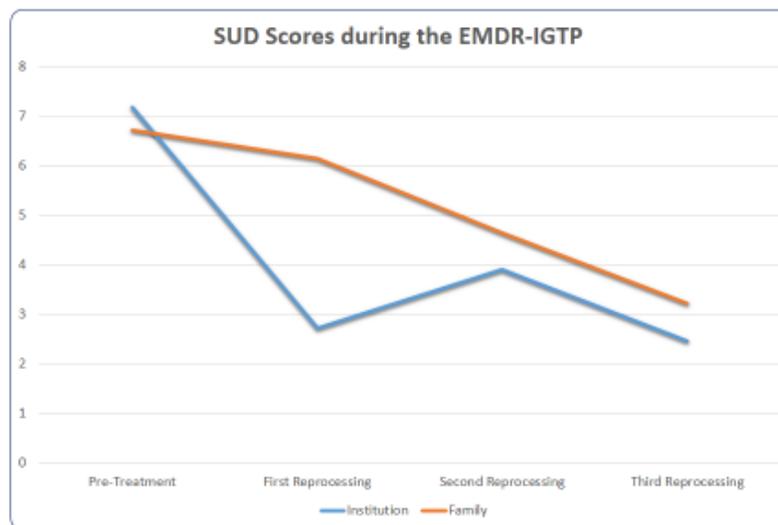


Figure 1. Changes in SUD scores during the three EMDR-IGTP reprocessing sessions.

The effects on PTSD symptoms were measured using the SPRINT Scale (Connor & Davidson, 2001; Vaishnavi et al., 2006) administered to the children attending to the camp from two different groups: Family and Institution. Four measures were made: baseline (pre-camp activities), pretreatment, posttreatment, and follow-up assessments for both groups. Table 1 shows the mean scores and standard deviations obtained in each group.

Table 1. Children’s Scores on the Sprint

	Population	n	M	SD	Mean Error
Baseline.	Institution children	10	23.70	4.111	1.300
	Family children	14	18.14	5.882	1.572
Pre-EMDR.	Institution children	11	21.91	3.300	.995
	Family children	14	17.14	5.869	1.568
Post-EMDR.	Institution children	11	5.91	2.508	.756
	Family children	13	3.38	1.446	.401
Follow-up.	Institution children	7	4.29	3.200	1.209
	Family children	13	1.69	1.377	.382

Descriptive data show that before camp activities, Institution children obtained a SPRINT Scale mean score of 23.70, with a standard deviation of 4.11, while Family children obtained a lower mean score: 18.14, with a standard deviation of 5.88.

Comparing the scores of both groups in the different measures using a t test for independent samples it was observed significant differences in all measures as shown in Table 2. In all cases the mean scores of the Institution children group were higher than the mean scores of the Family children group.

Given these results, it was decided to analyze each group separately in order to compare the effect of the intervention over time and to know if the activities of the first phase of trauma treatment had some effect in reducing the severity of posttraumatic stress disorder symptoms.

Table 2 Comparison between groups on the SPRINT scores			
	t	gl	sig
Baseline	2.566	22	.01
Pre-EMDR	2.405	23	.02
Post-EMDR.	3.081	22	.00
Follow-up	2.558	18	.02

Comparison of the scores obtained in pre-camp activities assessment and before treatment with EMDR Therapy (pretreatment assessment).

In order to evaluate the effect of the activities conducted before the EMDR therapy, comparisons between the measures obtained in the baseline (pre-camp activities) and in the pre-treatment assessment were made for both groups separately.

Analysis of the data obtained from Institution children showed no significant differences between the mean scores obtained in pre-camp activities and pretreatment assessment ($x = 23.70$ vs. 21.91); $t(9) = .989$, $p = .35$.

When comparing the mean scores of the Family Children Group, no significant differences were found between the measures obtained before the camp activities (baseline) and before treatment with EMDR therapy (pretreatment) ($x = 18.14$ vs. 17.14); $t(13) = 9.14$, $p = 0.38$ (Table 1 and Figure 2).

It can be concluded that activities conducted prior to EMDR therapy reprocessing sessions, did not have statistically significant effect reducing the severity of posttraumatic stress disorder symptoms measured with SPRINT.

However, the EMDR clinicians observed significant indicators of change in patients, both before EMDR therapy (e.g., more cheerful, more involved in group activities) and during the treatment: adaptive distance from traumatic memories and emotional stability during reprocessing. Clinicians believe that the first phase of trauma treatment activities could help the children to stay within their window of tolerance (Siegel, 1999) during the reprocessing sessions.

When comparing pre-post EMDR therapy scores, is observed a noticeable decrease in mean scores and statistical significance obtained through the mean difference test in both groups: For Institution children, ($X = 21.91$ vs. 5.91) $t(10) = 11.163$, $p < .00$, and for Family children ($x = 17.14$ vs. $x = 3.38$); $t(12) = 7.50$, $p < .00$ (Table 1 and Figure 2).

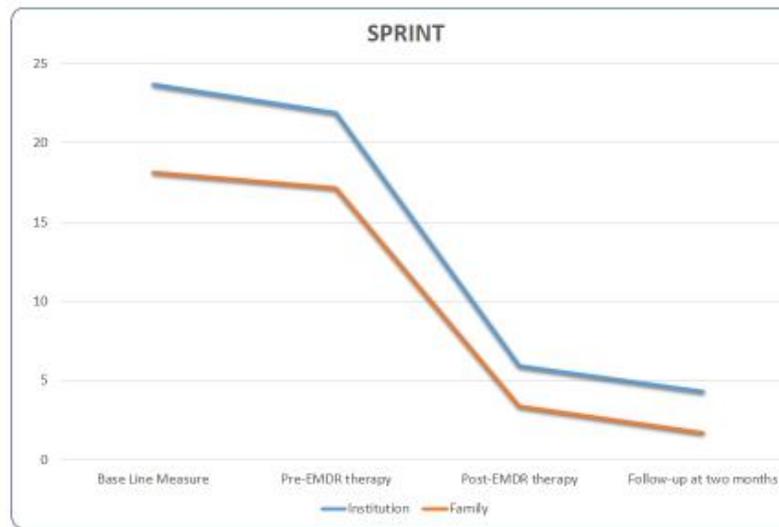


Figure 2. SPRINT scores at baseline, pre-EMDR therapy, Post-EMDR therapy and Follow-up at two months.

Comparison of the effect of treatment in two different groups.

With the objective of confirm if the differences in SPRINT scores can be attributed to EMDR therapy, a General Linear Model for repeated measures was applied, including the variable population (family or institution) in the analysis. Pretreatment, posttreatment and follow-up measures were compared for each group.

The findings clearly show that the treatment had the same effect in both groups (Table 1 and Figure 2). In the inter-subjects comparison with repeated measures, analysis showed a significant difference between the measures applied.

The main effect is exhibited between pretreatment with EMDR therapy and posttreatment assessment, as seen in Figure 2, $F(1) = 185.50$ $p < .000$.

Given that a decrease tendency between the three measures is similar for both groups, there were not found differences attributable to the population, $F(1) = 21.07$ $p < .23$ which indicates that changes between measures is due to the treatment with EMDR therapy and not to the type of population where the children belonged.

The decrease observed in the follow-up measures confirms that the effects of the program are not only maintained throughout time, but continue dropping off.

For the Family group, differences between the posttreatment and follow up measures ($X=3.38$ vs. $x=1.69$) showed a statistical significance $t = (12) = 3.39$, $p < .00$; while for Institution children the test did not showed statistical significance ($x=5.91$ vs. $x=4.29$). Nevertheless is important to highlight the small sample size.

Global Subjective Improvement. When analyzing in general the answer to the question: "How much have you improved from treatment?" which has a response range from 0 to 100%. The average response for Institution children was 95.9% and for Family children was 98.5%. Finally when asked "How much have improved the symptoms after treatment?" the average response was 5 (Much improvement), in 99% of cases.

Discussion

Since this was a field study it was not ethically possible to maintain a control group without treatment. However, the results of this research show the effectiveness of Group and Individual EMDR Therapy in resolving Post Traumatic Stress Disorder (PTSD) symptoms for children who have experienced severe interpersonal violence, taking under consideration it was observed the same statistically significant effect in both groups (Table 1 and Figure 2), regardless of whether the participants lived with their family or in an institution.

The Results also show that changes in the different measures of SPRINT, was due to treatment with EMDR therapy and not to the type of population (family or institution).

The decrease observed in the follow-up measure confirms that the effects of the program were not only maintained over time, but continued to decrease.

This research did not examine the reasons why Family children had a greater decrease in SPRINT scores than Institution children.

According to the EMDR clinicians whom treated the children, there are two factors that could cause this differences: One, a greater amount of traumatic memories and two, lack of support networks (such as an adoptive family or adults named as "godparents" to visit them in the institution, going for a walk and make them feel important to someone). Further research about this topic is necessary.

Data from the SPRINT Scale also shows a Global Subjective improvement in the participants.

It was observed that activities performed before the EMDR Therapy did not have statistically significant effect in reducing the severity of posttraumatic stress disorder symptoms measured with the SPRINT Scale.

However, from an information processing theoretical perspective (Shapiro, 2001), the authors consider that one of the key benefits of the various activities conducted on the first phase of treatment was the creation and strengthening of positive memory networks. These networks were then available to children during Group and Individual EMDR Therapy reprocessing of their traumatic memories

Probably for this reason, the EMDR clinicians whom carried out the field work, observed significant subjective indicators of change in the participants, both before EMDR therapy (e.g., more cheerful, more involved in group activities) and during the treatment: adaptive distance from traumatic memories and emotional stability during reprocessing.

It should be noted that as in the first research study (Jarero, Roque Lopez, & Gomez, 2013), a single traumatic memory was targeted at the beginning of group reprocessing (*"the memory that best represent all the adverse experiences that you have lived"*) and the reprocessing effects were generalized to the entire memory cluster of similar incidents (e.g., rape, sexual abuse, physical and emotional abuse, neglect, abandonment). Shapiro (2001) mentioned that when the patient selects for reprocessing an incident that represents a particular cluster *"clinical reports have verified that generalization will usually occurs, causing a reprocessing effect throughout the entire cluster of incidents"* (p. 207).

Something important that should be mentioned is the application of more intensive EMDR therapy. Different from the first research study where 34 participants received two reprocessing group sessions and 26 of them (76 %) required Individual EMDR Therapy to achieve a SUD score of zero, in the present study, 25 participants received three reprocessing group sessions and only 11 (44 %) required single EMDR therapy to achieve a SUD score of zero.

The statistically significant evidence obtained in this trauma recovery camp yielded evidence to assume that participants experienced significant changes that will allow them to continue with their lives in an adaptive way.

The positive results of this study show that this multicomponent treatment was effective and time-limited. Furthermore, to treat a large group of children in a week is advantageous in terms of economic costs.

It seems that this multicomponent approach can be an efficient alternative to the type of treatment typically provided to children with complex trauma (Jarero, Roque Lopez, & Gomez, 2013) which consists of group or individual sessions for periods of 2 or 3 months.

Recommendations

Since there are few studies on treatments developed specifically for people with complex trauma histories (Cloitre et al., 2011). The authors recommend future research on the use of Group and Individual EMDR Therapy as part of a multicomponent phase-based trauma treatment approach for children and adolescents who had suffered severe interpersonal violence.

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