

Interventions Used in the Psychotherapeutic Treatment of Post-Traumatic Stress Disorder (PTSD)

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ABSTRACT

Post-traumatic stress disorder (PTSD), a highly prevalent psychopathological condition, results from exposure to a traumatic event that evokes fear, helplessness and horror. However, effective psychotherapeutic interventions have been developed that allow for the relief of symptoms and improvements associated with the functioning of patients diagnosed with this condition. The purpose of this review of clinical reports, published between 2014 and 2019 in journals indexed in the Online Library of Knowledge (B-on), was to provide an overview of the interventions that were used, by psychologists or other health professionals, in the psychotherapeutic treatment of the aforementioned disorder. Fifty one publications that met the inclusion criteria were identified and there was a predominance of the cognitive-behavioural approach, with strategies and procedures derived from the Cognitive-Behavioural Model of Learning. The results were later discussed.

Keywords: Interventions, Post-Traumatic Stress Disorder, PTSD, Psychotherapeutic Treatment, Cognitive-Behavioural Model of Learning, Clinical Reports

INTRODUCTION

Post-Traumatic Stress Disorder (PTSD)

The group of mental illnesses includes Post-Traumatic Stress Disorder (PTSD), which can develop after exposure to an event or series of extremely threatening or traumatic events [1]. It is characterised by psychological and behavioural symptoms, including the re-experiencing of trauma, avoidance of associated stimuli, negative changes in cognition and mood, as well as hyperarousal [2]. PTSD has a significant impact on individuals' lives, often leading to fractured relationships and a decrease in their cognitive and psychosocial functioning [3]. Furthermore, it is associated with increased mortality, cardiometabolic morbidity and suicide risk [4]. A study carried out in the United States further demonstrated that, comparing older adults who suffered from PTSD and individuals who experienced one or more traumatic events (but who did not meet the diagnostic criteria for the disorder), the former were more likely to have been diagnosed with hypertension, angina pectoris, tachycardia, other heart diseases, stomach ulcer,

gastritis and arthritis [5]. This disorder is also known to have a high rate of diagnostic comorbidity with other psychiatric conditions, anxiety disorders and depression being frequently present [6].

Psychotherapeutic Treatment

In recent decades, the understanding of PTSD has substantially improved, leading to the development of effective treatments that allowed for the relief of symptoms and improvements associated with the functioning of many patients, as it is the case with psychotherapeutic interventions. Currently, there is a variety of these interventions, which differ in their duration, number of sessions and specific techniques used. Given this diversity, health professionals may question which treatment program to use or, more specifically, which treatment components are essential for successful therapy [7]. On the other hand, due to its high diversity, there is still little information organised according to criteria that would allow one to understand the characteristics of the concretely applied strategies [8].

Clinical Reports

The main objective of this review of clinical reports was to investigate which specific psychotherapeutic treatments were applied to alleviate PTSD symptoms. In that sense, a review of clinical reports produced by psychologists or other qualified health professionals was carried out through: a) Retrieving the clinical reports on the psychotherapeutic treatments used in the treatment of PTSD; b) Extracting all of the relevant information from each of the clinical reports retrieved; c) Synthesising all relevant information extracted from clinical reports included in the investigation; and d) Determining the types of approaches and its specific strategies of psychotherapeutic intervention used in the treatment of PTSD.

METHOD

Participants

The sum of the study samples resulted in a total of 1991 individuals, 1661 (83.43%) were diagnosed with PTSD and 323 (16.22%) were in the Control Group. The remaining seven individuals (0.35%) were partners of participants diagnosed with PTSD [9]. With regard to gender, 777 (39.03%) of the individuals were female, 1171 (58.81%) were male, two individuals (0.10%) were transgender and one individual (0.05%) was non-binary. Two studies did not provide information about the gender of the participants [10, 11]. The average age ranged from eight to 56 years old.

Materials and Procedure

For the development of the present investigation, a review of clinical reports published in journals indexed in the Online Library of Knowledge (B-on) about the interventions used by psychologists or other health professionals in the psychotherapeutic treatment of PTSD was carried out. This review adopted the following steps:

Step 1

This stage was carried out on November 17th 2019 (at 16:14 hours), with an electronic search on the B-on from the Google Chrome Internet browser (version 84.0.4147.105) and with connection to the Virtual Private Network (VPN) service. On the database's homepage, the researcher's session was started and the option "Research Service" was selected. Then, the "Advanced Search" tool was chosen, which allows for the combination of terms and the

application of limits. On this second page, the terms “PTSD” (first text field) and “Psychotherapy” (second text field) were introduced and in the Search modes and expanders section, the option “Apply related words” was selected. In addition, the search was limited to articles that had full text available, published between 2014 and 2019 in academic journals and in English language.

Step 2

Step 2 involved the analysis of titles and abstracts of publications identified by the electronic search strategy and the judgment of publications which theme was relevant to be included in the review of clinical reports. Empirical studies, studies that presented a quantitative, qualitative or mixed methodology, studies on the effects of psychotherapy on the cognitive, emotional or behavioural functioning of individuals suffering from PTSD, studies on the psychotherapeutic treatment of the disorder in question and other comorbid conditions, studies on the effects of psychotherapy on the neural fields and brain areas of individuals suffering from the disorder in question and, finally, pilot studies on the topic of interest were adopted as inclusion criteria. As exclusion criteria, the following were adopted: lack of relationship with the theme of the review, publications such as systematic literature reviews, meta-analyses, dissertations and theses, editorials, comments, symposia, communications, letters, case studies, repeated publications, studies unavailable for viewing, studies that were in a language other than English, poorly detailed studies, corrections of studies, non-empirical studies, studies not included in scientific journals, studies that compared two or more interventions, studies that only addressed the diagnostic criteria of the DSM and the ICD, studies that addressed the psychometric properties of psychological instruments, studies that addressed the intervention through the opinion of health professionals, studies that only focused on the diagnosis of the disorder in question, studies on the damage in the neural fields and brain areas of individuals who suffer from the disorder in question (but that did not refer to the effects of psychotherapy), studies that only referred to barriers, risk and protective factors, symptoms and prevalence of the disorder in question, studies on the effectiveness of other types of treatments other than psychotherapeutic treatments in the disorder in question (including pharmacological, biological, chemical, or that make use of the Internet and technologies), studies carried out with animals, and, finally, studies that focused only on the effects of psychotherapy on the physiological symptoms of the disorder in question.

Step 3

Reading in full all of the articles considered eligible for inclusion in the narrative review and careful analysis of the information presented in each study. In the analysis of each article, the following aspects were observed: (a) authors and year of publication; (b) objective of the intervention; (c) sample size; (d) clinical characteristics of the subjects (gender, groups, age and comorbidity); (e) type of intervention used; (f) main results. Given the huge number of studies obtained, an analysis of the bibliographic references of each of the articles included in this review was not performed.

RESULTS

Clinical Reports

Fifty one clinical reports describing the psychotherapeutic treatments used for PTSD were identified. Three articles were excluded due to the lack of detailed information about the

treatment [12, 13, 14] and another article due to the fact that the treatment did not require a qualified health professional [15]. Figure 1 shows the flowcharts of the selection of studies included in this review.

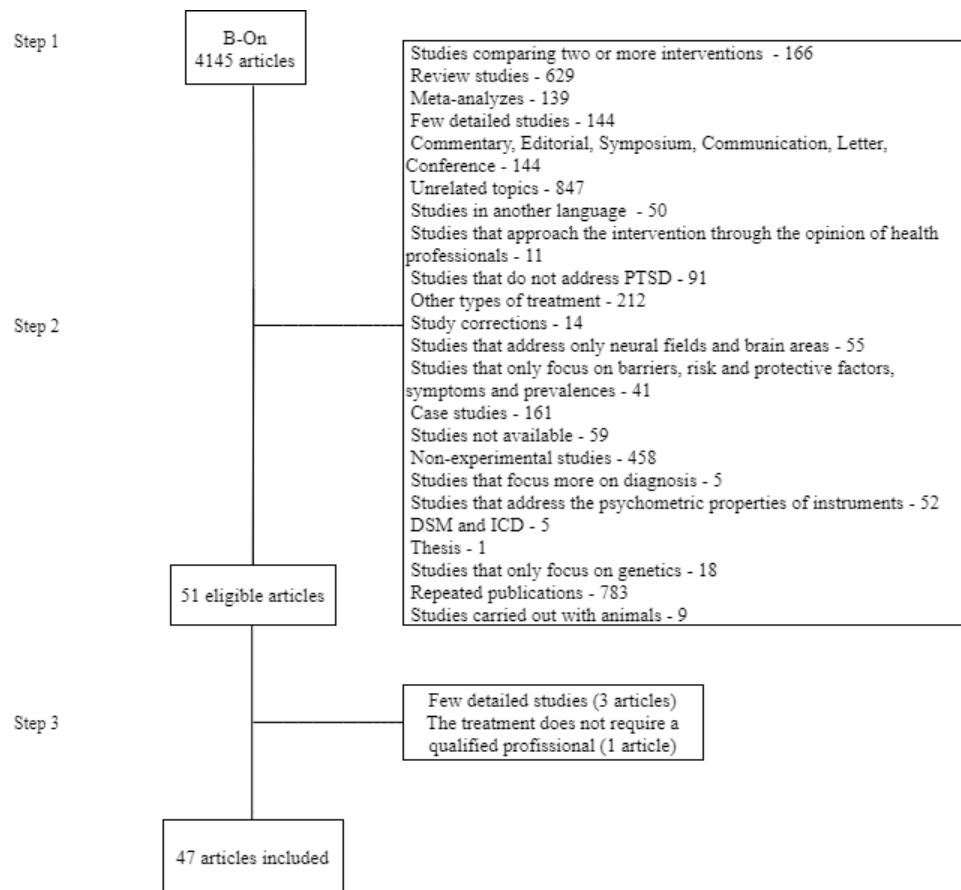


Figure 1. Flowchart of the selection process of the clinical reports to be included in this review

Table 1 describes the general characteristics of the clinical reports included in this review. Of the total number of articles included, it was found that participants in 26 studies did not present any comorbidity. Regarding the remaining clinical reports, the participants had other pathologies such as Major Depressive Disorder (n = 136), Anxiety Disorder (n = 93), Bipolar Disorder (n = 3), Panic Disorder (n = 27), Abuse of Alcohol (n = 1), Dysthymia (n = 6), Specific Phobia (n = 4), Social Phobia (n = 4), Obsessive-Compulsive Disorder (n = 1), Depression (n = 97), Substance Abuse (n = 59), Alcohol Abuse Disorder (n = 4), Behavioural Disorder (n = 21), Other (n = 36), Attention Deficit Hyperactivity Disorder (ADHD) (n = 23), Sleep Disorder (n = 4), Generalised Anxiety Disorder (n = 15), Eating Disorder (n = 12), Addictive Disorders (n = 2), Borderline Personality Disorder (n = 16), Disruptive Behaviour Disorder (n = 12), Mood Disorder (n = 9), Psychotic Disorders (n = 3), Affective Disorder (n = 28), Somatoform Disorder (n = 4), and Personality Disorder (n = 3).

Table 1. General characteristics of the Post-Traumatic Stress Disorder patients

Clinical Report Reference Number	N	Groups Sex (F, M)	Average Age	Comorbidity
[16]	20 individuals	EG – 10 individuals (2F, 8M) CG – 10 individuals (2F, 8M)	EG – 48 years old CG – 46 years old	None
[17]	46 individuals	46 M	27.50 years old	MDD – 34; AD – 38
[18]	24 individuals	EG – 13 individuals (10 F, 3 M) CG – 11 individuals (8 F, 3 M)	EG – 30.5 years old CG – 29 years old	None
[19]	15 individuals	15 F	39.9 years old	MDD – 9; BD – 1; PD – 9; AA – 1
[20]	26 individuals	26 M	17.1 years old	MDD – 12; D – 4; SP – 3; SOC P – 1; OCD – 1
[21]	67 individuals	EG – 49 individuals CG – 18 individuals (2 F, 65 M)	EG – 54.71 years old CG – 54 years old	A comorbid disorder of axis I – 26 (EG) e 9 (CG); Two or more additional comorbid disorders – 16 (EG) e 7 (CG)
[22]	41 individuals	41 M	14.94 years old	None
[23]	40 individuals	EG – 20 individuals (15 F, 5 M) CG – 20 individuals (13 F, 7 M)	EG – 32.07 years old CG – 31.21 years old	None
[24]	31 individuals	15 F, 16 M	49.3 years old	MDD – 15; PD – 11
[25]	15 individuals	15 F	56 years old	DEP – 11; SA – 3

[26]	47 individuals	EG – 21 individuals (4 F, 17 M) CG – 26 individuals (5 F, 21 M)	EG – 47.42 years old CG – 46.31 years old	Another comorbid disorder – 13 (Eg) e 14 (CG)
[27]	47 individuals	EG – 23 individuals (20 F, 3 M) CG – 24 individuals (16 F, 8 M)	EG – 10.14 years old CG – 10.50 years old	None
[28]	13 individuals	10 F, 3 M	43 years old	None
[29]	29 individuals	7 F, 22 M	49.5 years old	MDD – 17; AAD – 4; SOCP – 3; PD – 2; SP – 1
[10]	34 individuals	EG – 23 individuals (22 F, 1 M) CG – 11 individuals (without information)	EG - 49 years old CG – without information	None
[30]	289 individuals	G1 – 144 individuals G2 – 101 individuals G3 – 44 individuals (32 F, 257 M)	50.4 years old	None
[31]	24 individuals	11 F, 13 M	11.2 years old	BEHD – 6; DEP – 4; ADHD – 3; SD - 4
[32]	21 individuals	18 F, 3 M	14.52 years old	ADHD – 2; DEP – 4; GAD - 1
[33]	10 individuals	7 F, 3 M	43.40 years old	MDD – 9; ED – 3; ADID (in remission) – 2; BPD - 1
[34]	38 individuals	25 F, 12 M e 1 TI	14.68 years old	DEP – 20; ADHD – 13; DBD – 12; MD (unspecified)

				– 9; Another disorder – 7; PSYD – 3; BD – 2
[11]	29 individuals	Without information	16.7 years old	None
[35]	34 individuals	22 F, 11 M e 1 TI	14.71 years old	None
[36]	29 individuals	EG – 14 individuals (9 F, 5 M) CG – 15 individuals (12 F, 3 M)	EG – 14.2 years old CG – 12.5 years old	AD – 25; AFD – 16; BEHD – 15
[37]	9 individuals	9 F	40.7 years old	None
[38]	19 individuals	19 F	31.58 years old	SA - 19
[39]	20 individuals	8 F, 12 M	8 years old	None
[40]	42 individuals	38 F, 4 M	42.17 years old	MDD – 31; BPD – 15; D or SOD – 2; AD – 7; ED – 9
[41]	32 individuals	26 F, 6 M	10.9 years old	None
[42]	69 individuals	69 M	38.40 years old	None
[43]	60 individuals	EG – 30 individuals (30 M) CG – 30 individuals (30 M)	EG – 27.3 years old CG – 27.6 years old	None
[44]	9 individuals	9 M	45.6 years old	None
[45]	158 individuals	EG – 79 individuals (29 F, 50 M) CG – 79 individuals (27 F, 52 M)	EG – 13.84 years old CG – 13.83 years old	None
[46]	14 individuals	10 F, 4 M	47.14 years old	AFD – 12; AD – 3
[47]	65 individuals	35 F, 30 M	11.62 years old	None
[48]	30 individuals	22 F, 8 M	44 years old	DEP – 21; GAD – 14; PD – 5

[49]	37 individuals	27 F, 10 M	16.76 years old	SA - 37
[50]	11 individuals	11 F	42.73 years old	None
[51]	10 individuals	8 F, 1 M e 1 NB	22.3 years old	None
[52]	63 individuals	EG - 33 individuals (15 F, 18 M) CG - 30 individuals (17 F, 13 M)	EG - 37.2 years old CG - 44.5 years old	None
[9]	14 individuals (7 couples)	Patients - 7 individuals (4 F, 3 M) Partners - 7 individuals (3 F, 4 M)	Patients - 45.86 years old Partners - 44.86 years old	MDD - 7 patients and 2 partners; AD - 4 patients and 2 partners
[53]	56 individuals	56 M	41.3 years old	None
[54]	22 individuals	15 F, 7 M	15.36 years old	None
[55]	99 individuals	EG - 50 individuals (33F, 17 M) CG - 49 individuals (30 F, 19 M)	EG -14.75 years old CG -15.05 years old	AD - 14; DEP - 28
[56]	21 individuals	8 F, 13 M	34.48 years old	PTSD - 14; DEP - 9; ADHD - 5; PED - 3; Other - 2
[57]	132 individuals	55 F, 77 M	15.43 years old	None
[58]	24 individuals	9 F, 15 M	38 years old	None
[59]	6 individuals	2 F, 4 M	17 years old	None

Abbreviations: EG – Experimental Group; F – Female; M- Male; CG – Control Group; MDD – Major Depressive Disorder; AD – Anxiety Disorder; BD – Bipolar Disorder; PD – Panic Disorder; AA – Alcohol Abuse; D - Dysthymia; SP – Specific Phobia; SOCP – Social Phobia; OCD – Obsessive-Compulsive Disorder; DEP – Depression; SA –Substance Abuse; AAD – Alcohol Abuse Disorder; G – Group; BEHD – Behavioural Disorder; ADHD – Attention Deficit Hyperactivity Disorder; SD – Sleep Disorder; GAD – Generalized Anxiety Disorder; ED – Eating Disorder; ADID – Addictive Disorders; BPD - Borderline Personality Disorder; DBD - Disruptive Behaviour Disorder; MD - Mood Disorder; PSYD - Psychotic Disorders; TI - Transgender Individual; AFD - Affective

Disorder; SOD - Somatoform Disorder; NB - Non Binary; PTSD - Post-Traumatic Stress Disorder; PED - Personality Disorder.

Table 2 shows the strategies applied to the psychotherapeutic treatment of PTSD and their main effects. From the analysis of this Table, one can see that the Clinical Report Reference Number [16] reported using Equine-Assisted Therapy in the treatment of PTSD for six weeks (one one-hour session per week). This intervention involved the use of metaphors (all components of the session, including activities, facilities, props, obstacles and the horses themselves, served as potential metaphors), psychoeducation, addressing thoughts and feelings from the previous session and outside therapy, psychotherapeutic activities with the horses (identifying challenges involving anger and other strong emotions, setting goals and exploring different positive lifestyle changes to help control the symptoms of the disorder), reflection on each session (both in groups and individually) and, finally, the use of different explanations and metaphors in order to help participants become more aware of their emotions and to define and understand their feelings. After the application of this intervention, it was possible to verify that the individuals submitted to it reported a significant improvement in PTSD symptoms, resilience and quality of life after treatment. Furthermore, an increase in patience, confidence and relaxation on the part of individuals during treatment, a reduction in stress and an improvement in self-esteem and personal growth was reported. Participants learnt to adjust better to environmental changes, to work better as a team in sessions and at home, to deal with frustration and stress more effectively, and to communicate better with the "outside world". On the other hand, they also reported having learnt new strategies to deal with stressful, angering and frustrating situations. Despite all of these results, no differences were found in cortisol levels between the experimental and control groups.

Imaginative Stabilization Group Therapy, used by the Clinical Report Reference Number [17], involved three imaginative stabilisation techniques: mindful or awareness of breathing (to induce a state of relaxation and focus in the present moment), body scan (to enable participants to experience the different parts of their body) and the use of guided images. The latter used the "safe inner place" (e.g., encouraging participants to imagine themselves in a real or invented place where they felt comfortable and safe) or the "tree exercise" in which participants were asked to imagine a tree as a symbol of strength and nutrition aiming to evoke a sense of inner stability, comfort and energy. Finally, a space for sharing experiences among participants was set aside. Two sessions were held per week, resulting in a total of 86 sessions. At the end of treatment, an increase in the perception of positive feelings and a sense of control was reported, as well as a reduction in suffering. It was also found that anxiety symptoms were significantly reduced, while PTSD and depression symptoms remained unchanged. Finally, patients reported an improvement in the self-efficacy self and learnt to be aware of themselves in the present moment and to deal with overwhelming emotions.

In cases where Eye Movement Desensitisation and Reprocessing (EMDR) was used [18, 56], participants received psychoeducation and were asked to recall the traumatic memory and to identify the feelings or physical sensations that accompanied it. In addition, they also received bilateral stimulation (eye movement guided by the horizontal movement of the therapist's arm or alternating taps on the patient's knees) and were asked to report any emotional, cognitive, somatic and/or imagery experiences that arose. This procedure was repeated until the

memory-related disturbance reached a score of zero to ten. The intervention applied by the Clinical Report Reference Number [18] lasted two and a half months, with three to ten sessions per week, of 90 minutes. In turn, the intervention adopted by the Clinical Report Reference Number [56] had a total of eight sessions (75 minutes each) and was added to the usual treatment of the participants (pharmacotherapy, psychoeducation, supportive counselling, job coaching, support with housekeeping and case management), which was maintained during the study period. In both cases it was found that individuals with PTSD demonstrated a significant improvement in the parameters of depression, anxiety, stress, fatigue, general well-being, quality of life, social adjustment and impact of the traumatic event [18], as well as a reduction of PTSD symptoms, psychological distress, and characteristics of autism related to social motivation and communication [56].

Other therapists used Interpersonal Psychotherapy for the treatment of PTSD, lasting 12 sessions per week [19]. In the initial phase of the intervention, symptoms, diagnosis, traumas and the impact they caused on the patient were addressed, as well as important relationships in the patient's current life and the ways in which these relationships affected PTSD and vice-versa. Subsequently, an analysis of the communication and decision was made and a role-playing was performed. Finally, participants' progress was assessed and warning signs were identified. At the end of treatment, a significant reduction in PTSD symptoms was reported, and these results were maintained three months after treatment [19]. It was also found that approximately one third of the group failed to meet the criteria for diagnosing the disorder. Finally, there were no significant changes in depressive symptoms.

Trauma-Focused Cognitive-Behavioural Therapy was used by several therapists, the main components being psychoeducation, parenting skills (e.g., praise, active ignoring, contingency management strategies), cognitive restructuring, relaxation and breathing exercises, affective modulation (identification and expression of feelings; assessment of the level of intensity of emotions; positive self-instructions; coping of difficult/unpleasant emotions; thought interruption; problem-solving strategies), cognitive processing, trauma narrative, exposure exercises and safety and relapse prevention plan. The duration of this intervention varied throughout the studies: 15 sessions of 100 minutes [20], 16 weekly sessions of 60 minutes [24], 12 to 25 sessions [41], four months (16-20 weekly sessions, one hour) [57] and 12 to 15 sessions of 90 minutes [59]. It was verified that this intervention allowed for the reduction of PTSD symptoms in the five cases in which it was used.

Prolonged Exposure was adopted by other therapists, and the sessions were similarly structured in both cases: in vivo exposure exercises and imaginal exposure exercises. Participants from both studies were also invited to listen to recordings of the exposures between sessions. The Clinical Report Reference Number [21] applied 12 weekly group sessions (one hour each) and five individual sessions (one hour each). In turn, the Clinical Report Reference Number [30] used eight to 13 weekly sessions (90 minutes each). Patients undergoing this type of intervention showed a significant reduction in PTSD symptoms [21, 30]. Furthermore, a significant reduction in suicidal ideation [30] and depressive symptoms [21] has been reported.

The Clinical Report Reference Number [22] used Therapy by Repeating Phrases of Positive Thoughts and Cognitive and Positive Psychotherapy for five weeks. While the first intervention focused on repeating positive words, educating on building positive sentences according to the daily situation, and repeating three sentences of positive thoughts for three to five minutes a day, Cognitive and Positive Psychotherapy focused on the observation of thoughts, in the interruption of negative thoughts, in the repetition of positive words and phrases and, finally, in the replacement of negative thoughts by positive thoughts. These strategies produced a significant reduction in PTSD symptoms, memories of war experiences and sleep disturbances.

Other professionals used Cognitive-Behavioural Therapy. The Clinical Report Reference Number [23], in addition to using this type of intervention in a group format, also used pharmacotherapy (benzodiazepines, antidepressants and neuroleptics). The sessions focused on psychoeducation, assessment of negative thoughts and beliefs about PTSD, cognitive modification and rehabilitation of incorrect assessments, cognitive restructuring focusing on trauma, identification of participants' negative beliefs and assessments (in cases of injury) and its consequences to explain the emergence of PTSD. In addition, there was also the identification and correction of thinking flaws, thought modification (through the use of techniques such as evidence review, profit and loss analysis and identification and modification of cognitive errors), imaginative flooding exercises, cognitive and behavioural modification techniques through mindfulness training and, finally, the control of emotions (through progressive muscle relaxation techniques with breathing regulation). This intervention lasted for 10 weekly sessions (60-90 minutes). In turn, the 13 weekly sessions (one hour) applied by the Clinical Report Reference Number [50] focused on the construction of a card with the participant's view of themselves (with collages of images and/or words describing personal characteristics), construction of a timeline for mapping the history of violence, psychoeducation, cognitive restructuring, construction of narratives about traumatic events, approaching feelings and thoughts about the aggressor (through role-playing), relaxation, image replacement technique, coping strategies (emergency button), problem solving training, prevention of exposure to violence/protection strategies/functioning of safety nets, training in self-protection skills, building a project for the future, prevention of recurrence and, finally, self-assessment (review of the card with the participant's view of themselves). As for the intervention of the Clinical Report Reference Number [55], psychoeducation, identification of emotions and their regulation skills, cognitive restructuring, relaxation, problem solving skills, imaginary exposure exercises (related to traumatic memories) and in vivo exposure exercises (related to avoidance) were used. Safety issues were also discussed in this type of intervention and information was provided on available residential and educational services. Regarding the issues of loss and separation from parental figures, these were addressed through the construction of supportive relationships in therapy and the values of parenting skills were emphasised. Finally, participants were taught problem-solving skills to improve social relationships, and the final sessions also focused on relapse prevention. This intervention resulted in a total of 12 weekly sessions. At the end of treatment, there was a reduction in PTSD symptoms in some cases [23, 55], while in others these symptoms remained stable [50].

Other professionals used an intervention called Integrative Restoration-Yoga Nidra Meditation (iRest) for 10 weeks (19 sessions, 90 minutes) [25]. In this type of psychotherapeutic intervention, psychoeducation, the reading of an iRest script, the creation of a personal internal

resource, a sense of security, protection, comfort or well-being and the definition of an intention for each intervention practice and a sincere desire (e.g., for an event/circumstance that the participant wanted to happen more than anything else in life for themselves, a loved one, or the world at large) was privileged. Participants were invited to become aware of their own body, breathing, physical sensations and their emotions, thoughts and beliefs, as well as to be aware that they were the ones who witnessed everything that happened around them. They were further encouraged to find a feeling of joy or to relive a memory of when they felt happiness or joy and to feel the feeling of emotion, letting go of the memory. Finally, a space for sharing experiences about the intervention was set aside. The Clinical Report Reference Number [25] found a significant reduction in PTSD symptoms, as well as depressive symptoms and self-censorship. In addition, it was also found a decrease in body tension, an improvement in the quality of sleep, the ability to deal with intrusive thoughts and the ability to control stress, as well as an increase in the feeling of joy.

Regarding the Integrative Exercise (in group), it lasted 12 weeks (36 sessions, of one hour each) [26]. For the sessions, aerobic exercises, strength training with weights and resistance bands, movements and yoga postures presented within a framework of mindfulness principles were used. These principles (focus, breathing, respect, patience, “fresh start”, “just be”, recognition, trust, and “let go”) were presented separately verbally and were repeated during each week of the intervention. If participants could not attend one of the sessions in person, they were provided with an audio recording to guide the exercises at home. At the end of treatment, the experimental group demonstrated a greater reduction in PTSD symptoms, a greater improvement in psychological quality of life, and a relatively smaller improvement in physical quality of life [26].

With regard to the Creative Arts in Psychotherapy sessions, in the experimental group (10 sessions of 90 minutes each) the build up of a sense of security, the practice of activities (dance, reading and storytelling), the expression of emotions associated with the trauma history and the practice of regulating emotion through the decoration of masks and, finally, the strengthening of coping skills through dramatisation and music were all privileged. In relation to the control group (three sessions of three hours each), a non-therapeutic program was adopted, providing skills to children and parental figures, emotional support and legal knowledge in preparation for appearing in court [27]. At the end of treatment, the experimental group showed a significant decrease in hyperexcitation. Avoidance symptoms also decreased more in this group than in the control condition, although the effect size was small. It was found that children smiled and interacted more and showed more confidence and, on the other hand, improvements were also found in terms of sleep, play and the attitude of resistance at home. However, no significant effects on PTSD symptoms, behavioural problems and post-traumatic growth were found [27].

Other therapists used Basic Body Awareness Therapy, which was added to the usual treatment that participants had before the study period [28]. This could be psychiatric medication, psychotherapy or a list of illnesses. Regarding the 12 weekly sessions of the intervention (50 minutes each), these included simple movements such as lying down, sitting down, standing up, walking positions, and occasionally a massage with pressure on the shoulders or on the back was used. The intervention also included the restoration of postural balance, free breathing,

coordination and increased awareness, and reflection on the experiences during the sessions. In order for security and trust to be established and in order to give the participant a sense of control, a continuous dialogue with the patients about the next stage of the treatment (in order to avoid surprises) and double awareness (that is, to maintain awareness of the bodily sensations and the present environment simultaneously) were used. Treatment results point to significant improvements in PTSD symptoms, quality of movements and bodily experiences, as well as a reduction in body pain [28].

The Clinical Report Reference Number [29] applied Transdiagnostic Behaviour Therapy (12 to 16 weekly sessions, 45-60 minutes each) focusing on psychoeducation, development of a hierarchy of avoided stimuli, exposure exercises, designing a plan for future exposure exercises and related objectives and relapse prevention. The homework during the intervention process consisted of reviewing the psychoeducational leaflet provided, self-monitoring of three components of negative emotions and avoided activities, reviewing the exposure hierarchy and initial exposure practice, and finally one to two daily exposure exercises. There was also the incorporation of some optional therapeutic modules in order to improve exposure practices: response prevention (psychoeducation and incorporation of response prevention into exposure exercises), mild cognitive therapy (psychoeducation and coping statements), sleep disruption (psychoeducation and incorporation of sleep hygiene), mild substance use (psychoeducation, self-monitoring techniques and reduction of soft substance use), anger management (psychoeducation and anger management techniques), progressive muscle relaxation (psychoeducation and independent progressive muscle relaxation techniques), prolonged grief (psychoeducation and grief management) and finally a module related to chronic pain (psychoeducation and pain management techniques). Patients undergoing this intervention reported a significant reduction in symptoms of depression, anxiety, stress, PTSD and related impairment.

The Clinical Report Reference Number [10] used a cancer bereavement therapeutic group for the treatment of PTSD. The six sessions (eight weeks) of this intervention focused on psychoeducation, self-care and the participants' daily routine, developing self-compassion through compassionate mind training, use of principles of Cognitive-Behavioural Therapy and Cognitive Therapy for PTSD to work on unpleasant memories, negative grief cognitions and maladaptive coping behaviours, development of resilience to maladaptive thoughts or memories through exposure and, finally, reflections and termination of the therapeutic process. At the end of the therapeutic process, health professionals detected a reduction in the intensity of grief, PTSD, depressive and anxiety symptoms, as well as an increase in the participants' self-compassion. At the three months follow-up, improvements in grief, PTSD and depressive symptoms were maintained. However, this has not been shown to reduce anxiety symptoms and increased self-pity. In turn, the control group showed no change in any measures.

Another form of intervention, the Emotional Regulation and Interpersonal Group Therapy [31], was applied in a total of 12 weekly sessions (75 minutes each). Participants were helped to identify and name their emotions, and the sessions also focused on psychoeducation, managing unpleasant emotions and coping skills with a focus on the body, mind and behaviour, communication skills, skills training assertiveness, social skills and recovery of self-confidence, negotiation skills and relaxation techniques. According to the Clinical Report Reference

Number [31], there was a reduction in PTSD symptoms and these were maintained after treatment completion, even with symptoms of hyperexcitation three months after completion. The intervention also resulted in a reduction in depressive symptoms and suicidal thoughts, although it was not possible to demonstrate whether this improvement was maintained during the follow-up period. Finally, there was also a reduction in the feeling of guilt and the impulse to punish.

Metacognitive Therapy was the intervention used by other therapists [32] in 14 sessions (40-50 minutes each). This psychotherapeutic procedure involved the patient working on the case formulation together with the therapist and being familiarised with the metacognitive model. Subsequently, psychoeducation was provided and thought suppression experiments were performed (e.g., "please try not to think of a pink rabbit sitting on my head!") to demonstrate its paradoxical effect. The intervention also focused on implementing detached mindfulness through the use of the telephone metaphor (e.g., "you can't decide when the phone rings, but you can learn to let it ring without answering. Also, if the phone leaves a message in the inbox, you can take care of that later. Likewise, it is not your decision when these thoughts arise in your mind, but you can learn to leave those thoughts alone and deal with them later"). Participants learnt to postpone worry and rumination to a fixed time in the early evening (which should not exceed ten minutes) and verbal experiences and strategies were used to challenge other negative and positive metacognitive beliefs about worry and rumination. Sessions also focused on attention modification experiences to reduce threat monitoring (e.g., participants were asked to insert situations they had avoided since the traumatic event, while focusing their attention on the safe aspects of the situation) and a prevention plan of relapses. At the end of treatment, a significant reduction in PTSD symptoms was reported and 85% to 95% of participants experienced a complete remission. In patients who were available for follow-up, improvements were maintained.

Cognitive Restructuring and Image Modification were also adopted for the treatment of PTSD [33]. In the sessions of this intervention, cognitive restructuring, Socratic questioning, guided discovery and the "devil's advocate" technique (this aims to reduce feelings of guilt about the reason or how the trauma happened, asking the patient why they acted the way they acted before or during the trauma) were all used. After the first session, the participant was asked to write an argument similar to what a lawyer would present in court about why the core dysfunctional assumption was not true and to read that argument every day. Subsequently, the psychotherapeutic procedure focused on determining the pros and cons of the validity of the participant's assumption, psychoeducation and familiarisation with mental images through a neutral image of a beach scene. The patient was then asked to develop an individual image that best represented their most central dysfunctional assumption about the self and later on a positive self-image, resulting from the modification of the negative image, was developed in detail and during the process the images were enriched with various sensory details such as visual impressions, smells, sounds and tastes. Imagery exercises were also adopted in this case, with the participant being instructed to activate their personal negative self-image and imagine the process of transforming it into a more positive image. As homework the patient was asked to practice the images daily using an audio recording of the session. The final sessions were reserved for addressing the participant's progress on their specific problems with the intervention as well as for discussing individual methods for integrating the learnt techniques

into daily routines. This intervention resulted in a total of three sessions: two sessions of treatment (90 minutes) and one session of reinforcement (50 minutes). At the end of the intervention a significant reduction in PTSD symptoms, negative cognitions related to trauma about the self and depressive symptoms was found. In addition, nine out of 10 participants failed to meet the PTSD criteria in the follow-up period.

Clinical Report Reference Number [34] described an intervention called Brief STAIR-A (Skills Training in Affective and Interpersonal Regulation for Adolescents) which involved three modules of 90 minutes each. This procedure involved psychoeducation, monitoring and labelling of emotions, identification and assessment of current coping skills, experiential exercises to reinforce emotional regulation skills, development of communication-related skills (identifying barriers that obstructed effective communication, acquiring new communication skills and developing competence and flexibility in interpersonal interactions), role-playing activities so that the adolescents could refine the skills learnt and finally deep breathing exercises (as an emotion regulation strategy) and development of an individualised safety plan for each participant. All of these strategies caused a significant reduction in PTSD and depressive symptoms. In this study, no change was found in the level of coping skills used and, on the other hand, greater coping effectiveness was found when participants were discharged from treatment [34].

Other professionals used the “Mein Weg” (My Way) intervention [11]. This focused on psychoeducation, breathing exercises, trauma narrative, cognitive restructuring, increased safety and future development and sharing experiences, feelings and problems with the group during the intervention and mutual support in sharing trauma narratives. This intervention resulted in a total of six group sessions of 90 minutes each. At the end of the therapeutic process, a significant reduction in PTSD symptoms was found, more specifically in symptoms of reliving, avoidance and negative changes in cognitions and affection. However, the improvement in symptoms of hyperarousal was not significant. Although the number of participants who met the PTSD diagnostic criteria was smaller after the intervention, the effect was not significant - several participants still had this diagnosis [11].

Creative Arts Therapy was reported only by Clinical Report Reference Number [35], having lasted two weeks (eight sessions of three and a half hours each). At the beginning of each session, a warm-up activity (30 minutes) of a specific modality was carried out before the participants were divided into groups. In Music Group, an analysis of the lyrics of the songs, choice of songs that represented the participant's own life account and improvisation activities focused on emotions, narrative and communication was carried out. Regarding the Visual Arts Group, participants were invited to create a mask that described them, build a book containing their thoughts, feelings and memories, paint a mural and share the thoughts and feelings that contributed to their design and, finally, to decorate a t-shirt that reflected their journeys. In the Drama Group, the exploration of various roles of daily life was carried out, the choice of an object with which the participant felt connected and the verbalisation of feelings about it, activation of the imagination, experiencing new roles and exploring spontaneity and sharing personal accounts. Each session ended with a gathering for a closing ritual (30 minutes). The results of this intervention pointed to a significant reduction in PTSD, anxiety and depressive symptoms as well as a significant decrease in negative affect and an increase in positive affect.

There were no significant differences in music therapy, whereas visual art therapy proved to be effective in reducing symptoms and the vast majority of participants reported that they had fun, learnt something new about themselves, and felt safe during the treatment program. Finally, the drama therapy group significantly improved their mental health and positive affect.

Other professionals followed the Cognitive Therapy, focusing on psychoeducation, activity scheduling, imaginal reliving, cognitive restructuring, stimuli discrimination of traumatic memories, direct work with nightmares and techniques for transforming images and behavioural experiences [36]. This intervention resulted in a total of 10 weekly sessions of 90 minutes each. At the end of it, there was a reduction in PTSD symptoms, as well as significant improvements in depression, anxiety, general functioning and other comorbidities. These improvements were maintained six and 12 months after treatment. It was also found that 71% of the participants failed to meet the criteria for diagnosing the disorder.

In turn, an intervention called Trauma Centre Trauma-Sensitive Yoga lasted 20 weeks [37]. At the beginning of each session participants were asked to focus their attention on the present moment and make choices in their bodies based on what they were feeling on that particular day. Subsequently, intervention themes were introduced (e.g., being in the present moment) and participants were invited to interact with the given theme as they progressed through the yoga class (which included neck circles, twists, breath perception, and synchronisation breathing and movement). As homework, participants had to practice yoga sessions in their homes, using a DVD or CD as a guide (three times a week for 30 minutes). At the end of treatment, a significant reduction in PTSD and dissociation symptoms was detected. In addition, 83% of participants failed to meet diagnostic criteria for the disorder one week after the end of treatment [37].

An intervention called Warrior Renew was reported by the Clinical Report Reference Number [38], having lasted 12 weeks (four weekly sessions of two hours each). At the beginning of each session, opening exercises were performed, such as interactive games that explored movement, sound, imagination or teamwork. Subsequently, sessions focused on psychoeducation, coping skills, anger and guilt management, trauma recall (understanding memory and living in the present versus in the past), identification of interpersonal patterns that influenced relationships, mourning loss, exploring gratitude, reprocessing images (e.g., visiting a “younger me” - what would you like to say and/or do?”), working healthy relationships (mutual respect, exploring balance, healthy sexuality, revealing sexual traumas, effective communication skills), exploration of their traumatic growth and choice of their own identity and auxiliary activities (education about substance abuse, recreational activities such as yoga and meditation, family activities such as visiting family members). At the end of each session, a relaxation exercise was performed. This intervention produced a significant decrease in negative cognitions, symptoms of anxiety, depression, somatisation and PTSD. Furthermore, there was a significant increase in the positive factors of optimism and self-esteem of patients.

Clinical Report Reference Number [39] reported the use of animal-assisted therapy, which lasted 10 weeks. In the first three weeks of the intervention, participants came into contact with the dogs, learning to pet them, care for them and use a soothing massage with each animal. Afterwards, each child drew their dog according to what it was doing (body language) and made

a list of what could be done to make the dogs happy. Each child took a picture with their dog which together with the list was pasted into their Dog Book. An exercise was performed with six closed boxes, each of which contained something the dogs needed to stay happy and healthy. Each child had 20 seconds to “feel” what was inside the box and write down their guess. This was followed by a group discussion of what was in each box and the importance of that object for these animals. In individual groups, children learnt to train their dogs to sitting down and lying down, and it was emphasised that only the procedure of reinforcement of a behaviour could be used and never the procedure of punishment of a behaviour. A general discussion of what made a dog and a person happy and unhappy was held and each child was asked to show what an angry dog would be like, followed by another discussion of what might happen if the child approached that dog. This information was also included in the Dog Book. Subsequently the child was asked to interact with another animal from the shelter. During the therapeutic process, children were also shown a series of body language images and asked to identify the different feelings the dog was experiencing (this information was included in the Dog Book). A discussion of the different ways in which children could help followed. Later they taught the dogs to do a “trick” (e.g., crawl) and created their own pet to take home (pet stone). In the remaining weeks, a brainstorming chart of all the knowledge acquired in the previous weeks was carried out and the skills and concepts acquired in the interaction with animals were transferred to human interactions (focusing on empathy, body language and feelings, managing emotions, verbal and non-verbal communication, self-control, developing and respecting boundaries, asking for support and developing support networks). At the end of the therapeutic process, practitioners found a significant reduction in PTSD symptoms, including intrusion, avoidance, arousal, and dissociation-related symptoms [39].

Dialectical Behaviour Therapy was reported only by the Clinical Report Reference Number [40], although in this case pharmacotherapy (antidepressants, neuroleptic medication, mood stabiliser and other psychotropic medication) was also used. The sessions focused on psychoeducation and skills acquisition (mindfulness, emotion regulation and pain tolerance skills), skill-based exposure, optional modules to address other problems (e.g., trauma-related nightmares), radical acceptance and psychosocial integration (focusing on personal goals and radically accepting the traumatic experience as part of a past life), and finally, participants could also participate in art therapy or receive advice from social services. This intervention lasted 12 weeks and caused a significant decrease in trauma-related emotions and symptoms of the disorder. Furthermore, an increase in radical acceptance was found and no significant improvements were found in the level of anger.

Trauma-Focused Group Therapy (85 sessions) was used by other professionals, focusing on psychoeducation, relaxation training, presentation of biographies, narrative of traumatic history, imaginal exposure exercises, cognitive restructuring, reconnecting the present with the past and the future, skills training (communication, aggression), coping strategies, addressing current concerns, future perspectives and sources of resilience and, finally, relapse prevention [42]. These same professionals found a reduction in PTSD symptoms, anxiety and depression in patients. However, PTSD symptoms were below the cut-off point, while the other two remained above. These results were maintained for up to five years after treatment and later began to deteriorate again. However, seven years after completion of treatment, all symptoms were at lower levels than at the baseline.

The Clinical Report Reference Number [43] adopted a group intervention program of reinforcement of coping with four sessions per week (two hours each). In this program, sessions included sharing stressful experiences and coping strategies among group members, expressing emotions through drawing, exploration of the positive meanings of negative emotions, presentation of skills to regulate negative emotions and increase positive emotions, identification of cognitive distortions and automatic thoughts about the disease and life of participants, positive reappraisal and cognitive restructuring, practice of effective skills for emotional regulation among group members and, finally, discussion on the mobilisation of protection resources and the enhancement of social support networks. The results of this intervention pointed to an improvement in problem-focused coping strategies, as well as an increase in the level of post-traumatic growth and reduction in PTSD symptoms.

Other therapists used Mindfulness-Based Stress Reduction [44, 46], an intervention that focused on body scan (i.e., attention to bodily sensations) in the practice of meditation, yoga, and mindfulness. This intervention lasted eight weeks in both cases and caused a reduction in PTSD symptoms. The intervention carried out by the Clinical Report Reference Number [44] also demonstrated high levels of safety, acceptability and feasibility and significant improvements in the level of care. As for the remaining study, a reduction in depressive symptoms and irritability was found and most participants reported an increase in well-being which, among other factors, was associated with an increase in positive emotions, better performance and greater self-care [46]. Participants also stated that they felt more distant from the traumatic event and accepted it more as part of their personal history. However, approximately one-third of participants dropped out of the intervention and did not complete the additional assessments.

A program named “Children and Grief: Teaching Life Skills” was described by the Clinical Report Reference Number [45]. The seven sessions of this program focused on psychoeducation, introducing the idea of a strategic toolbox, feeling thermometer and memory paste, visual imagery and dual attention techniques, relaxation and breathing exercises, mindfulness strategies and coping statements, regulation of grief memories, distraction and sharing experiences, understanding and dealing with feelings (e.g., putting off worries and sadness, positive statements about oneself, controlling sleep, and attending the funeral). In addition, adolescents were taught to live with loss over time in terms of building meaning, continuous bonds and anticipating the future. Homework consisted of consolidating the acquired learning. At the end of this intervention, a reduction in symptoms of complicated grief, post-traumatic stress and depression was detected. Parental figures perceived lower levels of post-traumatic stress and less change. The intervention program reduced the number of adolescents who needed individual therapy and functioned as a screening tool for those in need [45].

The Clinical Report Reference Number [47] employed Multidimensional Grief Therapy, which involved two phases. In the “learning about grief” phase, the six sessions included psychoeducation, emotion identification/regulation strategies (e.g., deep breathing, coping skills), discussion about how grief reactions can fluctuate over time, increased facilitation of grief by parental/caregiver figures (e.g., identification of useful/useless parenting behaviours), identification of memories of loss and trauma, cognitive coping strategies for dealing with maladaptive thoughts in each grief domain, and encouragement of positive memories about the

deceased to promote and reinforce adaptive grief reactions. As for the "tell my story" phase sessions, they focused on describing the deceased and identifying what the child missed the most about the person, helping the child finding comforting ways to feel connected to the deceased, analyse the form and circumstances of death, as well as the child's beliefs about what happens after it, identify changes in the child's life as a result of death and share the narrative of the loss with one of the parent/caregiver figures. There is no information about the duration of the second phase. Upon completion of the psychotherapeutic intervention, practitioners reported that completion of the first phase of treatment was associated with significant reductions, with high to very high effect sizes, for all domains of maladaptive grief, PTSD symptoms, and depressive symptoms. Approximately 25% of young people who have completed this phase improved enough not to need to be referred to additional services related to grief. In turn, youth who completed the second phase exhibited significant reductions, with medium to high effect sizes, in two domains of maladaptive grief (separation distress and circumstance-related distress), as well as for PTSD symptoms and depressive symptoms [47].

Cognitive-Behavioural Therapy with heart rate variability biofeedback was also used in the treatment of PTSD, having lasted between six and 14 sessions [48]. Initially, psychoeducation was provided to the participants and they were taught about tolerance to distress, how to calm down the body in the face of stress and/or distress, and about self-talk and/or self-supporting behaviours. Subsequently, seven modules were introduced. In the nightmares module, modified Image Rehearsal Therapy was used, which consisted of writing, drawing or talking about a recent nightmare, changing a detail of the dream in a way that seemed adaptive and positive to the patient and, later, frequently rehearsing the altered dream throughout the day. The dissociation module included psychoeducation, introducing mindfulness, identification, labelling and regulating emotions, developing a list of pros and cons about dissociation, and building individualised statements that patients used to focus on being present, even when uncomfortable. Regarding the general basic skills module, participants were taught to change their thought patterns related to threats and how to decrease their response to anxiety. In the hyperarousal and reactivity module, participants were taught to understand how their body responds to a variety of situations, along with the impact/importance of those responses. In addition, practitioners sought to create a personalised relaxation response that could be used in any environment and assessed heart rate variability feedback and breathing exercises. As for the avoidance module, patients were taught to increase their ability to deal with stress and uncertainty, as well as to break down stressors into easier-to-manage parts. Furthermore, role-playing and/or imaginal exposure were used. The negative moods and cognitions module focused on psychoeducation, seeking support and assistance regularly, participating in activities that participants valued, and understanding how to effectively deal with their maladaptive thoughts and behaviours. Finally, in the intrusion/reexperience module participants learnt more about limits with others and within themselves, to pay sufficient attention to the traumatic experience so as not to avoid and manage their response to intrusive thoughts. This intervention was effective in significantly reducing PTSD symptoms and in producing many positive changes in the participants' lives after treatment. Of the 26 participants who completed treatment, all of them failed to meet diagnostic criteria for the disorder in the post-treatment evaluation [48].

The Clinical Report Reference Number [49] applied Mindfulness-Based Cognitive Therapy. The 12 weekly sessions of this intervention (50-60 minutes) were structured as follows: creation of a safety plan, psychoeducation, relaxation and breathing exercises, mindfulness practice (to improve awareness of thoughts, feelings and reactions, as well as to consider new ways of responding), identification and management of activating stimuli, desires and impulses, cognitive restructuring, mindfulness-based recovery and relapse prevention. These professionals detected significant improvements in PTSD symptoms and in the participants' depression symptoms, which were linked with changes in cognitions associated with trauma. It was also verified a reduction in the use of cannabis (the most consumed substance) and an increase in the use of nicotine, although this was not significant. Average alcohol use remained consistent [49].

In turn, the Clinical Report Reference Number [51] adopted Compassion-Based Therapy for the treatment of PTSD, which resulted in six weekly sessions (60-90 minutes). This intervention used psychoeducation, experiential exercises in each session (e.g., meditation on kindness and love), construction of general mindfulness and self-compassion skills for everyday difficulties not related to trauma, practice of self-compassion exercises and, finally, the direct application of self-compassionate skills. The results of these strategies pointed to a significant reduction in PTSD symptoms in nine out of 10 participants. Eight participants showed significant reductions in shame relative to their baseline scores. For most participants, there was an increase in self-pity and a decrease in self-blame, and treatment gains were maintained at the two- and four-month follow-up.

Somatic Experience was applied by other professionals, focusing on psychoeducation, creating a list of symptoms, identifying and/or creating a list of resources to be used to reduce arousal, discussion of advanced concepts of intervention (e.g., tracking sensations, images, behaviours, affect and meaning, and understanding the manifestations of trauma in each domain), use of the traumatic history (or parts of it) to activate the low-level autonomic nervous system and track bodily sensations, relapse prevention, management of stress levels and planning for the future [52]. The homework consisted of tracking bodily sensations and self-regulating them. This intervention resulted in a total of 15 weekly sessions (one hour), resulting in a reduction in PTSD symptoms as well as depressive symptoms after the intervention. Results were maintained at follow-up. However, it was also found that only 44.1% of the participants failed to meet the criteria for diagnosing the disorder.

Present-Focused Cognitive-Behavioural Therapy was described only by the Clinical Report Reference Number [9], focusing on psychoeducation, cognitive interventions (working maladaptive thoughts of the "here and now" that may have been developed in response to trauma, but that are not directly focused on this), behavioural strategies (communication skills and enjoyable relationship activities, such as increasing the number and type of activities couples enjoy together), addressing generalised couple-specific beliefs in seven main areas (acceptance, guilt, trust, control, emotional closeness, physical closeness, and post-traumatic growth), challenging the present and future-oriented problematic thoughts that emanate from the trauma as opposed to beliefs or evaluations about the trauma itself and finally identifying the gains obtained in therapy and planning the expected challenges in the future. This intervention resulted in a total of 15 sessions, leading to a significant reduction in PTSD

symptoms and, conversely, to mean effect sizes for changes in relationship satisfaction (although they were only significant for partners).

The Clinical Report Reference Number [53] reported the Veterans Transition Program, which lasted three weeks (80 hours). This type of intervention included active listening skills (paraphrase, reflect with empathy and refraining from giving advice), psychoeducation, trauma symptom management (e.g., emotion regulation skills such as diaphragmatic breathing), writing activities to address military and non-military traumatic experiences and sharing these records with the group, identification of the most distressing traumatic event (i.e., target trauma), identification of viable goals in three domains (professional life, relationships and self-care), therapeutic role-playing (i.e., recreating the target trauma identified above) and sharing the goals of each participant with the group, while the other members helped each other to achieve those same goals. In order to achieve the professional goals, specific job-finding skills were taught, including resume building and mock interviews. For personal relationship goals, communication skills were taught and practiced, while for self-care goals several representatives of health organisations that supported veterans were invited to explain their services and respond to group members' questions and concerns. At the end of treatment, a significant reduction in depressive symptoms and post-traumatic stress symptoms was noticed.

The Brief School-Based Cognitive-Behavioural Intervention was described by the Clinical Report Reference Number [54], which involved the identification of present problems (which often included negative assessment of earthquakes and their sequelae, as well as cognitive avoidance behaviour of trauma memories), psychoeducation, cognitive restructuring and cognitive disfusion (using a worksheet and exercises to deal with relevant negative thoughts or images), exposure exercises, relaxation exercises and, finally, coping skills. Each session lasted 90 minutes, proving to be effective in reducing post-traumatic stress symptoms. This result was maintained four months after the intervention, however no improvements in the levels of depressive symptoms were found after the intervention [54].

Finally, the Clinical Report Reference Number [58] adopted a Brief Cognitive-Behavioural protocol of primary care and pharmacotherapy. This consisted of hypnotics, antidepressants and antipsychotics. As for the psychotherapeutic procedure (four sessions), this included filling out an activity notebook called "confronting uncomfortable memories" by the participants at home. In this notebook, each participant had to write down a detailed narrative of the traumatic event associated with the highest level of distress and current worries, including recall of personal thoughts, feelings and physical reactions. In addition, they had to answer the questions "How did this event change what you think about yourself?" and "How has this event changed the way you think about others?" Thereafter, participants had to read the trauma narrative and their responses to the questions for at least 30 minutes three times a week (at home). In subsequent sessions, participants were asked to read the narrative and their responses out loud. Furthermore, the intervention focused on trauma-associated emotional processing (using a discussion focused on problematic beliefs and associated emotions) and on reviewing treatment progress. Patients who were undergoing these strategies reported significant improvements in PTSD, depressive symptoms, and overall mental health functioning. The percentage of participants whose symptoms met the diagnostic criteria for

PTSD was reduced by almost half and the results did not differ significantly at the six- and twelve-month follow-up.

Table 2. Strategies applied and its results in the psychotherapeutic treatment of PTSD

Clinical Report Reference Number	Session Planning	Main effects of the intervention
[16]	a) Psychoeducation. b) Psychotherapeutic activities with horses. c) Use of different explanations and metaphors.	a) Significant improvement in PTSD symptoms, resilience and quality of life in the experimental group. b) Stress reduction, self-esteem improvement and personal growth.
[17]	a) Mindful Breathing. b) Body Scan. c) Use of guided images.	a) Significant reduction in anxiety symptoms, while PTSD and depressive symptoms remained unchanged. b) Self-efficacy self improvement.
[18]	a) Psychoeducation. b) Recall a trauma-related scene or image or an aversive or highly unpleasant situation. c) Bilateral Stimulation.	a) The EG demonstrated a significant improvement in all psychological parameters evaluated (depression, anxiety, stress, fatigue, general well-being, quality of life, social adjustment and impact of the traumatic event). b) Increased sleep efficiency. c) Reduction in maximum heart rate after the first EMDR session.
[19]	a) Communication analysis, decision analysis and role-playing. b) Assessment of progress and identification of warning signs.	a) Significant reduction in PTSD symptoms. Results were maintained at the three-month follow-up. b) There were no significant changes in depressive symptoms. c) Approximately one third of the group failed to meet the diagnostic criteria for PTSD.
[20]	a) Psychoeducation. b) Parenting skills and relaxation. c) Cognitive processing. d) Trauma narrative. e) Cognitive Processing II (in sensu exposure). f) In vivo exposure.	a) Significant improvement in PTSD symptoms, with some participants experiencing an increase in symptoms six months after therapy, although this increase was not significant. b) Significant decrease in depressive symptoms and behaviour problems. These results remained stable at follow-ups. c) Significant improvement in physical health problems.
[21]	Group sessions: a) Development of an in vivo hierarchy and in vivo exposure exercises.	Significant reduction in PTSD and depressive symptoms.

Individual sessions:		
a) Imaginal Exposure Exercises.		
[22]	TRPPT: a) Repetition of positive words. b) Education about building positive sentences according to the daily situation. CPP: a) Observation of thoughts and interruption of negative thoughts. b) Repetition of positive words and phrases. c) Replacing negative thoughts with positive thoughts.	Significant reduction of PTSD symptoms, memories of war experiences and sleep disturbances.
[23]	a) Psychoeducation. b) Cognitive restructuring. c) Identification and correction of thinking flaws. d) Imagined flooding exercises. e) Mindfulness training. f) Progressive muscle relaxation techniques with breathing regulation.	a) Significant reduction in PTSD, depression and anxiety symptoms (EG). b) Improved autobiographical memory performance over time.
[24]	a) Psychoeducation. b) Progressive relaxation training and cognitive restructuring. c) Progressive imaginary and live exposure exercises. d) Relapse prevention.	a) Significant reduction in the prevalence and symptoms of PTSD, anxiety disorder and depression. These results were maintained in the follow-ups. b) Complete remission of MDD and PD cases. Only 3.2% of participants continued to have PTSD.
[25]	a) Psychoeducation. b) Reading an iRest script. c) Become aware of their own body, breathing, physical sensations and their emotions, thoughts and beliefs.	a) Significant reduction in PTSD, depressive and self-censorship symptoms. b) Decreased body tension, improved sleep quality, ability to deal with intrusive thoughts and ability to control stress, and increased sense of joy.
[26]	a) Aerobic exercises, strength training with weights and resistance bands, yoga movements and postures. b) Mindfulness principles.	a) Greater reduction in PTSD symptoms, greater improvement in psychological quality of life, and relatively less improvement in physical quality of life (EG).
[27]	a) Practice of activities (dancing, reading and storytelling). b) Practice of emotion regulation. c) Strengthening of coping skills.	a) Significant decrease in hyperexcitation (EG). b) Avoidance symptoms also decreased more in the EG than in the control condition, but the effect size was small. c) During treatment, it was found that children smiled and interacted more and showed more confidence.

		d) Improved sleep, play and attitude of resistance at home. e) No significant intervention effects were found on PTSD symptoms, behavioural problems and post-traumatic growth.
[28]	a) Simple movements performed in lying down, sitting down, standing up and walking positions. b) Massage with pressure on the shoulders or back. c) Restoration of postural balance, free breathing, coordination and increased awareness. d) Dual awareness.	a) Significant improvement in PTSD symptoms, quality of movements and bodily experiences. b) Reduction of bodily pain.
[29]	a) Psychoeducation. b) Development of a hierarchy of avoided stimuli. c) Exposure exercises. d) Relapse prevention.	Significant reduction in symptoms of depression, anxiety, stress, PTSD and related impairment.
[10]	a) Psychoeducation. b) Compassionate Mind Training. c) Exposure.	a) Reduction of grief intensity, PTSD, depression and anxiety symptoms. Increased self-pity. b) At the three-month follow-up, improvements in grief, PTSD and depressive symptoms were maintained. However, this has not been shown to reduce anxiety symptoms and increase self-pity. c) The CG did not show any change in any measure.
[30]	a) Psychoeducation. b) In vivo exposures. c) Imaginal Exposure exercises.	Significant reduction in PTSD symptoms and suicidal ideation.
[31]	a) Identification and naming of emotions. b) Psychoeducation. c) Coping skills training, communication, assertiveness, social, self-confidence recovery and negotiation. d) Relaxation techniques.	a) Reduction of PTSD symptoms. These results were maintained after completion of treatment, even with symptoms of hyperarousal three months after completion. b) Reduction of depressive symptoms and suicidal thoughts. It was not possible to demonstrate whether this improvement was maintained during the follow-up period. c) Reduction of guilt and punishment impulse.
[32]	a) Psychoeducation. b) Detached mindfulness. c) Verbal experiences and strategies to challenge other negative and positive	a) Significant reduction in PTSD symptoms. b) Between 85% and 95% of participants experienced complete remission. In

	metacognitive beliefs about worry and rumination. d) Attention modification experiments to reduce threat monitoring. e) Relapse prevention.	patients available for follow-up, improvements were maintained.
[33]	a) Cognitive restructuring. b) Socratic questioning. c) Guided Discovery. d) Psychoeducation and imagery exercises.	a) Significant reduction in PTSD symptoms, negative self-trauma-related cognitions and depressive symptoms. b) Nine of the 10 participants failed to meet the PTSD criteria at follow-up.
[34]	a) Psychoeducation and monitoring and labelling of emotions. b) Role-playing. c) Deep breathing exercises and development of an individualised safety plan for each participant.	a) Significant reduction in PTSD and depressive symptoms. b) There was no change in the level of coping skills used. However, greater effectiveness of coping was found when participants were discharged from treatment.
[11]	a) Psychoeducation and breathing exercises. b) Trauma narrative. c) Cognitive restructuring.	a) Significant reduction in PTSD symptoms (revival symptoms, avoidance and negative changes in cognition and affect). However, the improvement in symptoms of hyperarousal was not significant. b) Although the number of participants who met the PTSD diagnosis was smaller after the intervention, the effect was not significant - several participants still met the criteria for the diagnosis of the disorder.
[35]	a) Music Group: analysis of song lyrics; choice of songs; improvisational activities focused on emotions, narrative and communication. b) Visual Arts Group: creation of a mask and a book; painting a mural and sharing thoughts and feelings; decoration of a t-shirt. c) Drama Group: exploration of various roles in everyday life; choosing an object; activation of imagination; experiencing new roles and exploring spontaneity and sharing personal stories.	a) Significant reduction in PTSD, anxiety and depressive symptoms, as well as a significant decrease in negative affect and an increase in positive affect. b) There were no significant differences in music therapy. c) Visual art therapy has been shown to be effective in reducing symptoms, and the vast majority of participants reported that they had fun, learnt something new about themselves, and felt safe during the treatment program. d) The drama therapy group significantly improved their mental health and positive affect.
[36]	a) Psychoeducation. b) Imaginal reliving. c) Cognitive restructuring.	a) Reduction in PTSD symptoms as well as significant improvements in depression, anxiety, general functioning and other comorbidities. These

		improvements were maintained six and 12 months after treatment. b) 71% of participants failed to meet the PTSD diagnostic criteria.
[37]	a) Focus attention on the present moment and interaction with the intervention themes. b) Yoga exercises.	a) Significant reduction in PTSD and dissociation symptoms. b) 83% of participants failed to meet the diagnostic criteria for PTSD one week after the end of treatment.
[38]	a) Psychoeducation. b) Coping skills and anger and guilt management. Identification of interpersonal patterns that influence relationships. c) Relaxation.	a) Significant decrease in negative cognitions, symptoms of anxiety, depression, somatisation and PTSD. b) Significant increase in positive factors of optimism and self-esteem.
[39]	a) Safe approach with one of the therapy dogs. Exercise of the six boxes and group discussion. b) General discussion of what made a dog and a person happy and unhappy. c) Interaction with another animal from the shelter. d) Body language images and identification of the different feelings the dog was experiencing. e) Creating their own pet to take home. f) Creation of a brainstorming chart. Transfer of skills and concepts acquired in interaction with animals to human interactions.	Significant reduction in PTSD symptoms (intrusion, avoidance, arousal and dissociation-related symptoms).
[40]	a) Psychoeducation and skills acquisition. b) Competency-based exposure.	a) Significant decrease in trauma-related emotions and PTSD symptoms. b) Increase in radical acceptance. c) No significant improvements were found at the level of anger.
[41]	a) Psychoeducation. b) Parenting, relaxation and affective modulation skills. c) Trauma narrative and processing. In vivo exposure exercises.	Significant improvements in PTSD symptoms and general social functioning.
[42]	a) Psychoeducation. b) Relaxation and narrative of traumatic history. c) Imaginal exposure exercises. d) Cognitive restructuring. e) Relapse prevention.	a) Reduction of PTSD symptoms, anxiety and depression. However, PTSD symptoms were below the cut-off point, while the other two remained above. b) These results were maintained for up to five years after treatment. c) Afterwards, all symptoms started to get worse again. However, seven years after treatment implementation, all

		symptoms were at lower levels than at baseline.
[43]	a) Sharing stress experiences and coping strategies. b) Expression of emotions through drawing. c) Skills in regulating emotions. d) Identification of cognitive distortions and automatic thoughts. e) Positive reappraisal and cognitive restructuring.	a) Improved problem-focused coping strategies. b) Increased post-traumatic growth level and decreased PTSD symptoms.
[44]	a) Body Scan. b) Meditation and yoga exercises. c) Mindful eating and mindful walking. d) Meditation on kindness and love.	a) Significant improvements in the level of attention. This result was maintained three months after completion of the intervention. b) Significant reduction in PTSD symptoms, and this result was maintained three months after completion of the intervention.
[45]	a) Psychoeducation. b) Visual Imagery and double attention techniques. c) Relaxation and breathing exercises, mindfulness strategies and coping statements.	a) Reduction of symptoms of complicated grief, post-traumatic stress and depression. b) Parental figures perceived lower levels of post-traumatic stress and less change. c) The intervention program reduced the number of adolescents who needed individual therapy and functioned as a screening tool for those who needed it.
[46]	a) Psychoeducation. b) Body Scan and yoga exercises. c) Meditation.	a) After the intervention, six participants failed to meet the PTSD diagnostic criteria. b) Reduction of PTSD symptoms (intrusion, avoidance, negative changes in cognitions and mood and changes in arousal and reactivity) and depression. c) Increased well-being and reduced irritability. Participants felt more removed from the traumatic event and accepted it more as part of their personal history. d) However, approximately one-third of participants dropped out of the intervention and did not complete the additional assessments.
[47]	1st Phase ("Learning about grief"): a) Psychoeducation. b) Emotion identification/regulation strategies.	a) Completion of the 1st phase was associated with significant reductions, with high to very high effect sizes, for all

	c) Cognitive coping strategies. g) Encouragement of positive memories about the deceased. 2nd Phase ("Tell my story"): a) Description of the deceased and identification of what the child misses most about the person. b) Analysis of the form and circumstances of death, as well as the child's beliefs about what happens after it. c) Sharing the loss narrative with one of the parent/caregiver figures.	domains of maladaptive grief, PTSD symptoms, and depressive symptoms. b) Approximately 25% of young people who have completed the 1st phase improved enough to the point that they did not need to be referred to additional services related to grief. c) Youths who completed 2nd exhibited significant reductions, with medium to high effect sizes, in two domains of maladaptive grief (separation distress and circumstance-related distress), as well as for PTSD symptoms and depressive symptoms.
[48]	a) Psychoeducation. b) Nightmares module. c) Dissociation module. d) General basic skills module. e) Hyperexcitation and reactivity module. f) Avoidance module. g) Negative cognitions and mood module. h) Intrusion/Reexperience Module.	a) Of the 26 participants who completed treatment, all of them failed to meet the diagnostic criteria for PTSD in the post-treatment evaluation. b) Participants reported a significant reduction in PTSD symptoms and many positive changes in their lives after treatment.
[49]	a) Psychoeducation. b) Relaxation and breathing exercises. c) Mindfulness Practice. d) Cognitive restructuring and relapse prevention.	a) Significant improvements in PTSD symptoms and depression symptoms. b) Reduction in the use of cannabis (the most consumed substance). Average alcohol use remained consistent. c) Increased use of nicotine, although not significant.
[50]	a) Psychoeducation. b) Cognitive restructuring. c) Construction of narratives about traumatic events and role-playing. d) Relaxation. e) Image replacement technique. f) Coping strategies, problem solving training and self-protection skills.	a) Significant reduction in anxiety, depression and stress symptoms. b) Attributing a new meaning to their experiences, minimising their feelings of guilt and shame, as well as gaining the perception that they were responsible for their victimisation. c) Acquisition of control over their current life situation, knowing their existing rights and services that could help protect them. d) Increased levels of life satisfaction. e) Symptoms of PTSD remained stable.
[51]	a) Psychoeducation. b) Building general mindfulness and self-compassion skills for everyday difficulties not related to trauma.	a) Nine of the 10 participants demonstrated significant reductions in PTSD symptoms. b) Eight participants showed significant reductions in shame relative to their baseline scores.

		c) For most participants, there was an increase in self-pity and a decrease in self-blame. d) Treatment gains were maintained at two- and four-month follow-up.
[52]	a) Psychoeducation. b) Identification and/or creation of a list of resources to be used to reduce excitement. c) Tracking of bodily sensations and self-regulation. d) Relapse prevention.	a) Reduction of PTSD symptoms as well as depressive symptoms. Results were maintained at follow-up. b) However, only 44.1% of participants failed to meet the PSPT diagnostic criteria.
[9]	a) Psychoeducation. b) Working maladaptive thoughts of the "here and now". c) Communication skills and enjoyable relationship activities. d) Addressing the couple's specific beliefs generalised in seven main areas.	a) Significant reduction in PTSD symptoms. b) Mean effect sizes were found for changes in relationship satisfaction, although they were only significant for partners.
[53]	a) Active listening skills and psychoeducation. b) Writing activities. c) Identification of target trauma and viable goals in the domains of professional life, relationships and self-care. f) Role-playing.	Significant reduction in depressive symptoms and post-traumatic stress symptoms.
[54]	a) Psychoeducation. b) Cognitive restructuring and cognitive disfusion. c) Exposure exercises. d) Relaxation exercises and coping skills.	a) Reduction of post-traumatic stress symptoms. This result was maintained four months after the intervention. b) No improvements in levels of depressive symptoms were found after the intervention.
[55]	a) Psychoeducation. b) Identification of emotions and emotion regulation skills. c) Cognitive restructuring. d) Relaxation and problem solving skills. e) Imaginary Exposures. f) In vivo exposure exercises. g) Relapse prevention.	a) Compared to the CG, the EG showed a significant reduction in the symptoms of PTSD, anxiety, depression and anger. b) Symptoms remained stable three months after the intervention.
[56]	a) Psychoeducation. b) Bilateral Stimulation.	a) Significant reduction in PTSD symptoms, psychological distress and characteristics of autism related to social motivation and communication. b) Participants experienced a significantly lower level of impairment in daily life related to traumatic events.

		c) Usual care was not associated with a decline in psychological distress during the waiting period before applying EMDR. d) However, when this last intervention was added, the results showed a significant decline in psychological distress, especially in terms of somatisation, depression and obsessive-compulsive symptoms. e) Results were maintained at six- and eight-weeks follow-up.
[57]	a) Psychoeducation. b) Relaxation. c) Affective modulation and cognitive coping. d) Trauma narrative and cognitive processing.	Significant reduction in PTSD symptoms.
[58]	a) Writing a detailed narrative of the traumatic event associated with the highest level of distress and current concern. Answer to the questions "How has this event changed what you think about yourself?" and "How has this event changed the way you think about others?" b) Reading the trauma narrative and its answers to the questions. c) Emotional processing associated with trauma.	a) Significant improvement in PTSD, depressive symptoms and in general mental health functioning. b) The percentage of participants whose symptoms met the diagnostic criteria for PTSD was reduced by almost half. c) Results did not differ significantly at the six- and 12-month follow-up.
[59]	a) Psychoeducation and parenting skills. b) Progressive muscle relaxation and breath control. c) Affective modulation. d) Cognitive processing and trauma narrative. g) In vivo exposure exercises.	a) Significant reduction in post-traumatic stress and anxiety symptoms. b) All participants (except one) were considered recovered at the individual level.

Abbreviations: PTSD - Post-Traumatic Stress Disorder; EG - Experimental Group; EMDR - Eye Movement Desensitisation and Reprocessing; TRPPT - Therapy by Repeating Phrases of Positive Thoughts; CPP - Cognitive and Positive Psychotherapy; MDD - Major Depressive Disorder; PD - Panic Disorder; iRest - Integrative Restoration-Yoga Nidra Meditation; GC - Control Group.

Note: "Psychoeducation" or learning information about one's disorder, about the psychotherapeutic strategies and about the process of change is seen as a worthy psychotherapeutic tool.

DISCUSSION

The present investigation allowed for the acquisition of very enlightening results about the interventions used by psychologists or other health professionals in the psychotherapeutic treatment of PTSD. According to those results, it was possible to find a high diversity of psychotherapeutic interventions used in the treatment of this disorder, with the vast majority of psychologists and other health professionals choosing strategies derived primarily from the Cognitive-Behavioural Model of Learning, a finding that was also reported in another review of clinical reports on PTSD [60]. According to this model of learning, specific environmental contexts activate thought flows that run simultaneously at three different cognitive floors [61]. Two of these levels take place below the level where conscious thought occurs exerting a controlling influence on one's emotions and behaviours that are emitted in those contexts [62]. In other words, when faced with a given event, an individual's cognitions have a controlling influence on their emotions and behaviour and, on the other hand, the way they act can affect their thought patterns and emotions.

Some of the aforementioned intervention strategies appeared recurrently in the vast majority of studies included in this review such as psychoeducation. This was used by therapists in order to provide the individual with information about the disorder and psychotherapeutic intervention. A behavioural strategy common to most of the interventions found in this study was relaxation, and the therapists sought to provide patients with information about the underlying reasoning for this procedure and to introduce specific techniques (e.g., progressive muscle relaxation, controlled breathing exercises). Its goal was to help patients learning to achieve a relaxation response, that is, a state of mental and physical calm [63] and, consequently, to reduce their state of anxiety. In turn, cognitive restructuring, a cognitive strategy, was used to help patients to identify and test the validity of their cognitions [64]. Thus, by changing the way individuals think, their emotions and behaviours end up changing too [65]. Most therapists also used mindfulness strategies, which are increasingly integrated into Cognitive-Behavioural Therapy for a range of problems, including mental disorders [66, 67]. Mindfulness is drawn from the teachings of Zen Buddhist and refers to teaching patients to focus on the activity of the moment (e.g., observing, describing and participating) rather than feeling overwhelmed by their emotions [68, 69]. Thus, patients are able to observe and accept their internal experiences without judgment, without evaluating or trying to change them [70]. Two other very common behavioural strategies comprised the construction of a hierarchy of feared stimuli and exposure and response prevention exercises, the first of which requires the patient to increasingly enumerate various objects, activities or situations that provoke anxiety. Thus, at the base of the hierarchy, the least feared stimuli are present and, as the psychotherapeutic process continues, the therapist works with the patient on the most anxious stimuli in ascending order, through exposure and response prevention exercises. These two components were intended to fight the reinforcement cycle caused by avoidance [63]. Finally, there was also a predominance of the security plan and relapse prevention. Through these strategies, patients learnt to identify signs of distress that might resurface and to establish a plan that would allow them to deal with these signs (e.g., use of coping strategies).

Despite the enormous diversity of strategies used, it was found that the vast majority of those (whether or not they were ruled by the cognitive and/or behavioural principles) induced a significant decrease in the PTSD symptoms and in patients' comorbid symptoms.

CONCLUSIONS

The results of the present study revealed a variety of strategies used by psychologists or other health professionals in the psychotherapeutic treatment of PTSD, with the vast majority of those strategies showing very positive results in terms of changes in the symptoms of this condition as well as in the comorbid symptoms of individuals. The practical application of the Cognitive-Behavioural Therapy and of other interventions that also follow the Cognitive-Behavioural Model of Learning was quite usual. The present investigation demonstrated important evidence for the clinical and educational practice.

Some of the arguable limitations of this study are: a) Some relevant studies on the subject were not included in this review due to the fact that the bibliographic search was carried out only in databases indexed to B-on; b) This bibliographic search was limited to articles published during the last five years only.

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