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Treatment of Trauma – Cognitive Processing Therapy or Prolonged Exposure? Analysis of Leading Approaches within the Cognitive-Behavioral Paradigm

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Abstract:

Contemporary understanding of trauma encompasses various forms of experiences resulting in symptoms of Post-Traumatic Stress Disorder (PTSD). Cognitive-behavioral therapies such as Cognitive Processing Therapy (CPT) and Prolonged Exposure (PE) are the main treatment methods for PTSD, differing in their approach to confronting traumatic memories and cognitive restructuring. Research on the effectiveness of these approaches has been conducted with various patient groups, including veterans, individuals experiencing childhood trauma, and those with PTSD from accidents and disasters, demonstrating differences in effectiveness depending on the patient group and type of trauma. The aim of this study is to analyze similarities, differences, and effectiveness of the indicated methods in treating PTSD depending on the therapeutic context.

cognitive processing therapy; prolonged exposure; cognitive-behavioral therapy; PTSD; trauma

INTRODUCTION

Contemporary conceptualizations of trauma, consistent with the prevailing DSM-5 classification in Poland, encompass the experience of psychological injury resulting from sudden and distressing events in which a person's life or health is threatened, or situations where the person witnesses such events [1]. Importantly, specialists analyzing the phenomenon of trauma emphasize the need to differentiate between trauma resulting from a single event (Type I trauma) [2] and early childhood traumatic experiences described as Type II trauma [3], developmental trauma [4], or relational trauma [5]. Other researchers [6] also pointed out the necessity of distinguishing Type III trauma, which pertains to individuals who have experienced multiple instances of violence beginning in early childhood and persisting over time. Understanding, accurately diagnosing, and effectively treating patients with post-traumatic symptoms are crucial aspects of psychological, psychotherapeutic, and psychiatric practice. The aim of this paper is to compare two main protocols used in the treatment of patients who have experienced trauma, both of which are applied within cognitive-behavioural therapy.

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Cognitive Processing Therapy and Prolonged Exposure as Two Leading Cognitive-Behavioral Treatment Methods for Trauma

Trauma treatment approaches vary depending on the theoretical paradigm underlying the clinician's practice. Within the cognitive-behavioral framework, two leading evidence-based protocols are particularly prominent: Prolonged Exposure (PE), developed by Edna Foa [7], and Cognitive Processing Therapy (CPT), developed by Patricia Resick [8]. In the context of first-wave cognitive-behavioral therapy, which emphasized behavioral techniques, the process of habituation has been central to trauma treatment. Habituation may occur through systematic exposure to trauma-related memories or to situations previously avoided by the patient due to their association with the traumatic event [9].

Through desensitization to trauma-related stimuli, a reduction in amygdala activity—the brain region involved in emotional memory—has been observed [10]. Foa's theoretical model places significant emphasis on the fear structure, which is thought to be altered by trauma in a way that leads to the misassociation of neutral stimuli with threat-related meanings [11]. This conceptualization supports the integration of behavioral and cognitive techniques, highlighting that therapeutic change requires not only habituation but also emotional processing and cognitive restructuring.

When deciding on the most appropriate treatment approach for patients struggling with posttraumatic symptoms, it is essential to consider the limitations of the described approaches. In the case of Prolonged Exposure therapy, the risk of self-harm in patients, high levels of memory fragmentation (insufficient trauma memory), and the use of PE involving patients with active psychosis are factors that need to be considered [12]. On the other hand, Cognitive Processing Therapy may not be suitable for individuals who are in immediate danger or whose panic attacks or dissociation are severe enough to hinder intervention [8]. When choosing CPT, it should be noted that it is a therapeutic protocol typically consisting of 12 sessions, feasible for both individual and group settings. The process involves identifying maladaptive beliefs associated with trauma and gradually modifying them within cognitive strategies – analysis and processing in context. Consistent with the foundations of the cognitive-behavioral approach, therapy also includes psychoeducation on PTSD symptoms and cognitive and emotional aspects. The protocol supports overcoming avoidance through systematic discussion of trauma-related beliefs, which constitutes a form of exposure to anxiety-provoking content. As part of the treatment process, the patient acquires and reinforces adaptive beliefs related to trauma and everyday coping strategies [13]. Importantly, CPT assumes that after traumatic events, two different reactions reflecting key beliefs may occur [8]. The first is accommodation, associated with incorporating new data into cognitive schemas and creating new beliefs. The second is assimilation, which occurs when trauma confirms the individual's pre-existing core beliefs, such as the world being a dangerous place or that others harm [8].

Prolonged Exposure therapy, on the other hand, is implemented in the form of individual weekly sessions and typically lasts about 3 months, including psychoeducation, learning and practicing breathing techniques for anxiety and tension reduction, and exposure – both imaginal and in vivo (real-life), which are carried out during sessions as well as in the patient's daily life, outside the office, as part of "homework" assignments [14].

According to the American Psychiatric Association (APA) analysis [15] of PTSD treatment methods, the application of PE allows for a high degree of symptom reduction, while CPT achieves a moderate effect in this regard. Moreover, PE enables a high level of reduction or prevention of co-occurring depression symptoms, with CPT showing moderate effects in this area. There is ample empirical evidence analyzing the effectiveness of PE and CPT and illustrating differences in the effectiveness of these protocols. At the same time, contemporary data suggest that evidence-based treatments for PTSD (CPT and PE) generally lead to symptom reduction within the first 8 sessions, and the occurrence of this change predicts further treatment effectiveness using these methods [16]. Researchers have demonstrated that for patients who experienced a minimum 20% symptom reduction by the eighth session, the likelihood of achieving

significant changes in comparison to all patients who continued treatment was twice as high. Studies comparing the course of PTSD symptom changes during CPT and PE have shown that CPT, compared to PE, was associated with greater reduction in 10 PTSD symptoms from the first to the last session of the protocol [17]. Additionally, PE was associated with greater reduction in avoidance following introduction and in the initial weeks of imaginal exposure. The therapeutic effect regarding patients' guilt related to trauma or negative beliefs from the initial period to the end of interventions was similar with both PE and CPT. In both methods, it is also essential to adhere to the protocol describing the course of each session. Studies involving active-duty military personnel with PTSD symptoms have shown that adherence to the protocol in both PE and CPT was associated with significant reduction in PTSD symptoms and that with an increase in the number of sessions, the impact of protocol adherence weakened [18].

Table 1. Similarities and Differences between CPT and PE

Aspect	Cognitive Processing Therapy (CPT)	Prolonged Exposure (PE)
Therapy Approach	Cognitive-behavioral therapy	Cognitive-behavioral therapy
APA Recommendation for Trauma Treatment	Yes	Yes
Duration of Process	12 sessions	14 sessions
Session Duration	50 minutes	50 minutes, may require 90-minute sessions
Format	Individual and group	Individual
Confrontation with Traumatic Memory	Full narrative of traumatic event not necessary	Forms the basis of exposure
Trauma Memory	Detailed trauma memory not necessary for protocol	Necessary for conducting exposure
Psychoeducation	Yes	Yes
Use of Imaginal and In Vivo Exposure	No	Yes
Cognitive Restructuring	Yes	Yes
Homework Between Sessions	Yes	Yes

Source: Adapted from Resick [8] and Foa [19]

CPT and PE in the Treatment of Trauma in Veterans

Importantly, a significant portion of research on CPT and PE has been conducted with the participation of veterans. Analyses have shown that both CPT and PE are effective in treating symptoms in those who have experienced military sexual trauma, and this effectiveness is independent of the gender of the subjects [20]. A randomized clinical trial published in 2022 [21], comparing CPT and PE in this particular group, found that the severity of PTSD symptoms significantly improved in both PE and CPT groups compared to the pre-treatment period. However, the average improvement was greater with PE than with CPT. At the same time, the percentage of patients dropping out of treatment was higher in the PE group (55.8%) than in the CPT group (46.6%). The phenomenon of treatment dropout is quite common, and efforts to understand the reasons why veterans undergoing trauma-focused cognitive-behavioral therapy discontinue treatment before its formal completion have yielded significant insights. In studies by Hundt et al. [22], dropouts from PE or CPT completed qualitative interviews about their experiences. The most common category of reported barriers was a lack of acceptance for therapeutic tasks and the belief that the proposed treatment did not work, difficulty in forming a therapeutic al-

liance, or changing treatment. Practical barriers primarily cited were the stressful treatment format (which is consistent with the idea of exposure exercises). *[Use concise academic phrasing.]*

Interestingly, for many years it was assumed that treating trauma symptoms in soldiers should be postponed until their return from the front. However, it turns out that they can be effectively treated during active duty, in garrison, and that this is possible precisely through the use of modified forms of PE and CPT, adapted to combat conditions. The results of Peterson et al.'s research [23] showed that in both groups of soldiers during active duty in Afghanistan and Iraq (treated with PE and CPT), a clinically significant reduction in PTSD symptoms was achieved, defined as a result lower by 10 or more points on the PCL-M scale (Posttraumatic Stress Disorder Checklist – Military Version) compared to pre-treatment scores.

Considering the specificity of combat experiences of soldiers returning from the front, it is worth considering the traumatic symptoms arising from the commission of so-called moral injury, referring to situations in which veterans violated their own moral standards through action or inaction. These situations are often associated with manifested symptoms of PTSD. The case study presented by Held et al. [24] described the therapy processes of veterans with posttraumatic stress disorder resulting from events related to moral injury, who benefited from treatment using PE and CPT. Currently, an important direction of research into therapeutic methods that can be proposed to individuals whose trauma symptoms are associated with described moral injury is the investigation of the use of Acceptance and Commitment Therapy (ACT) and Compassion-Focused Therapy (CFT), which are part of methods used in the cognitive-behavioral approach, the so-called third wave [25, 26]. *[More academic and concise wording.]*

Prolonged Exposure and Cognitive Processing Therapy in Alleviating Symptoms of Relational Trauma Experiences

Experiences characterized by relational trauma often lead to the development of PTSD symptoms [27]. A particularly trauma-associated event is rape [28]. It has been proven that extended exposure and cognitive processing therapy are effective as early interventions to limit the adverse psychological effects associated with trauma exposure [29]. However, it is worth noting that introducing therapeutic interventions based on detailed trauma recall within a few days of the event may, according to some analyses, lead to adverse effects or even exacerbate symptoms [30]. A meta-analysis published in 2023 on the effectiveness of psychological debriefing, i.e., detailed trauma recall after its occurrence, found that many studies conducted in this area were associated with methodological flaws, which prevents certain and responsible conclusions about the effectiveness of the method [31]. However, CPT and PE should be clearly distinguished from debriefing. They are separate methods. At the same time, the authors of the meta-analysis indicated that, in their opinion, the widely accepted belief that debriefing is harmful has hindered further progress in research in this area, and current methodological limitations suggest the need for continued analysis. Nevertheless, it should be emphasized that a challenge for clinicians is still situations where treatment is directed towards minors after such difficult and significant experiences as trauma in contact with another person, as most research analyses assessing the effectiveness of treatment based on PE or CPT have focused on adults. A long-term follow-up study comparing CPT with PE in the treatment of rape-related PTSD in a group of 144 women showed that the reduction in PTSD symptoms persisted throughout the 10-year follow-up period [32]. Importantly, no significant differences were found between treatment conditions (CPT and PE), and it was assessed that the maintenance of improvement was not related to further therapies or medication use. Previous analyses [33], comparing CPT and PE with the minimal attention condition (MA) in the treatment of PTSD and depression in a group of 171 women after rape, showed that CPT and PE were more effective than MA, and their effectiveness reached a similar level (with CPT allowing for better results in reducing guilt feelings experienced by patients). Subsequent analyses comparing cognitive processing therapy (CPT) with treatment as usual (TAU) among sexual assault survivors demonstrated positive outcomes in both groups

[34]. However, a higher proportion of participants receiving CPT achieved favorable results at 12-month follow-up (50%) compared to those receiving TAU (31%). Despite these findings, a 2022 systematic review by Lomax and Meyrivk [35] concluded that evidence supporting the effectiveness of cognitive-behavioral interventions in this context remains limited. Conversely, a meta-analysis by O'Doherty et al. [36] found that cognitive-behavioral approaches, including CPT and prolonged exposure (PE), can produce short-term improvements in mental health outcomes among survivors of rape, sexual assault, or sexual abuse.

Other situations that may lead to PTSD symptoms are traumatic experiences from childhood, of various kinds. In studies comparing classic extended exposure therapy with two modified versions of this treatment – intensive PE (iPE), where several sessions are conducted weekly, and phase-based treatment, in which PE is preceded by emotional and interpersonal regulation skills training (STAIR), it was shown that these methods are effective in alleviating childhood trauma symptoms [37]. Interestingly, intensification of treatment may help achieve faster improvement, but it does not lead to overall better results. Intriguing research evaluating whether PE can be associated with cognitive change in patients with childhood trauma experiences was conducted by Kooistra et al. [38]. It was demonstrated that the reduction of negative beliefs about trauma precedes the reduction of PTSD symptoms and that this process occurs during extended exposure therapy. In the case of patients after childhood trauma, comparison of cognitive processing therapy with dialectical behavior therapy focused on trauma (DBT-PTSD), which constitutes a form of prototype phase-based therapy, brought particularly interesting perspectives. Development and further research in the field of DBT-PTSD seem especially important in working with individuals after childhood traumatic experiences, who develop borderline personality disorder. In studies by Bohus et al. [39], it was shown that the reduction of trauma symptoms in this group was significant with both CPT and DBT-PTSD, but patients using DBT-PTSD achieved remission of symptoms more frequently and were less likely to drop out of treatment.

Cognitive-Behavioral Therapies in Treating Trauma Resulting from Accidents, Natural Disasters, Illnesses, and Somatic Factors

It is important to note that single traumatic events such as accidents or natural disasters, as well as less obvious somatic threats, can lead to PTSD symptoms. According to existing knowledge, an effective method of treatment in these circumstances is cognitive-behavioral therapy [40, 41, 42]. Recent analyses evaluating the effectiveness of modified strategies have shown that to increase treatment accessibility in these circumstances, a 3-week internet-based intervention based on extended exposure (condensed internet-delivered prolonged exposure; CIPE) can be used [43]. Researchers demonstrated that treatment effects persisted after 6 months and that the intervention was not associated with serious adverse effects. In 2019 [44], a case study of a patient who experienced a major earthquake in eastern Japan, developed late-onset PTSD after 5 years. In the case of the described patient, PTSD symptoms, which initially subsided naturally shortly after the disaster, returned in a more intense form. Extended exposure therapy conducted according to a structured protocol was introduced as a therapeutic strategy, which proved to be effective in alleviating PTSD symptoms. Importantly, studies involving adolescent patients who, as a result of traffic accidents, experienced not only PTSD but also mild traumatic brain injury, showed that with the use of PE, there were benefits such as improvement in emotional state, reduced PTSD symptom scores, and re-education of fear and improvement in cognitive functions, including cognitive flexibility and attention, or improvement in executive functions [45].

Despite the effectiveness of CPT or PE in alleviating trauma symptoms resulting from the above-mentioned circumstances, there is still uncertainty about the effectiveness of these approaches in treating patients whose PTSD is the result of somatic factors, such as a cancer diagnosis, hemophilia, or stroke [46, 47, 48]. In events threatening associated with somatic factors, an additional aspect reinforcing fear is the fear of recurrence [49]. A case study analyzing the effectiveness of cognitive processing therapy in a patient whose PTSD developed because of COVID-19 (Coronavirus disease 2019)

allowed for symptom reduction [50]. Further research into the use of cognitive-behavioral therapy in working with patients with PTSD associated with medical aspects has brought interesting results. In 2022, reports were published on the positive effects (symptom reduction) of implementing cognitive-behavioral therapy in the treatment of PTSD in patients after hematopoietic stem cell transplantation using mobile therapy supported by the Cancer Distress Coach application [51]. The study authors pointed out that cancer and stem cell transplantation can be traumatic, especially when associated with life-threatening situations such as pulmonary embolism. The procedure involved 8 cognitive-behavioral sessions conducted with a psychologist via video conference. The duration of the first session was 90 minutes, while the subsequent seven sessions lasted 60 minutes. The protocol itself was a modification of the method developed earlier by the team of DuHamel et al. [52], aimed at individuals after hematopoietic stem cell transplantation who experience symptoms of transplant-related PTSD.

SUMMARY

In summary, cognitive-behavioural therapy implemented based on therapeutic protocols such as prolonged exposure or cognitive processing therapy has been subjected to empirical research and meta-analyses in various clinical contexts. Studies have included individuals for whom PTSD resulted from accidents, natural disasters, life-threatening somatic issues, as well as those with traumatic experiences including sexual abuse, assault, or violence. There is evidence to suggest that both CPT and PE can be effective treatment methods. However, it is important to consider the context and specific functioning of each patient (including their access to traumatic memory, safety, and existing belief system) highlighted in this work. The analysis of indications for both methods suggests that PE (Prolonged Exposure) is recommended for patients who exhibit strong avoidance of trauma-related memories and stimuli and require exposure to reduce emotional reactivity. In contrast, CPT (Cognitive Processing Therapy) may be more suitable for patients with deeply ingrained negative beliefs about themselves and the world but who may not be ready for intensive trauma exposure. Both methods demonstrate high effectiveness, and the choice of approach should be tailored to the individual characteristics of the patient. It is also possible to combine both approaches – for example, starting with CPT to weaken avoidance-reinforcing beliefs, followed by PE to reduce fear responses. Table 2 provides a summary that may support therapists in selecting the appropriate treatment method based on the conceptualisation of the patient's difficulties.

Table 2. Indications for Choosing PE or CPT

Criterion	PE	CPT
Severe avoidance of traumatic memories and situations	Recommended – reduces avoidance through systematic exposure.	May not be sufficiently effective without exposure work.
Strong negative beliefs about oneself and the world related to trauma	May help indirectly but is not the primary focus of therapy.	Recommended – focuses on changing maladaptive beliefs.
Need for controlled confrontation with trauma	Recommended – based on systematic confrontation with trauma.	May be helpful through cognitive analysis but does not include direct exposure.
Readiness for intensive emotional work	Requires a high level of engagement and tolerance of discomfort.	May be easier to accept for patients who avoid strong emotions.
Presence of intense PTSD symptoms (e.g. flashbacks, nightmares)	Effective in reducing reactivity to trauma-related triggers.	May help by changing symptom interpretation but does not eliminate fear responses as effectively as PE if they are predominant.

Difficulty expressing emotions verbally	May be too challenging for patients who avoid verbalising trauma.	May be easier to adopt, as it focuses on writing and cognitive analysis.
Patient preference	Recommended for individuals ready to confront their trauma directly.	Recommended for individuals who prefer analysing thoughts over experiencing strong emotions. May be preferred by patients who do not wish or are not ready to recall specific traumatic memories.

Source: Own elaboration based on Resick [8] and Foa [19].

Acknowledging the conclusions drawn from the analyses presented, it is crucial to ensure formal, professional training in the applied methods and adherence to structured therapy protocols containing descriptions of individual therapy sessions. Despite numerous analyses, there is still value in broadening perspectives and conducting research with patients for whom PTSD has developed in less obvious contexts. Systematic evaluation of the effectiveness of applied cognitive-behavioral methods and implemented modifications, especially their adaptation to online conditions or mobile applications, appears to be a significant direction for further research. This manuscript has never been published, reproduced or sent anywhere.

The Author declare no conflict of interest.

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