**Title**

Treating Adults with Complex PTSD (CPTSD) using a Modular Approach to Treatment: Rationale, Evidence & Directions for Future Research

**Running Head**

Treating Adults with CPTSD

**Authors**

Thanos Karatzias  
Edinburgh Napier University, School of Health & Social Care, Edinburgh, UK  
NHS Lothian, Rivers Centre for Traumatic Stress, Edinburgh, UK

Marylene Cloitre  
National Center for PTSD Dissemination and Training Division,  
VA Palo Alto Health Care System,  
Stanford University, Palo Alto, CA, USA

**Corresponding Author:**

Prof. Thanos Karatzias, Edinburgh Napier University, Sighthill Campus, Sighthill Court,  
Edinburgh EH11 4BN, Scotland UK  
Tel. (+44) (0) 131 455 5345,  
Email.t.karatzias@napier.ac.uk
Abstract

ICD-11 complex PTSD (CPTSD) is a new condition and therefore there are as yet no clinical trials evaluating interventions for its treatment. In this paper, we provide the rationale for a flexible multi-modular approach to the treatment of CPTSD, its feasibility and some evidence suggesting its potential benefits. The approach highlights flexibility in the selection of empirically-supported interventions (or set of interventions) and the order of delivery based on symptoms that are impairing, severe and of relevance to the patient. The approach has many potential benefits. It can incorporate the use of interventions for which there is already evidence of efficacy allowing the leveraging of past scientific efforts. It is also consistent with patient-centered care which highlights the importance of patient choice in identification of the problems to target, interventions to select and outcomes to monitor. Research on modular treatments with other disorders has found that compared to disorder-specific manualized protocols, flexible multi-modular treatment programs are superior in resolving identified problems and are associated with greater therapist and reduced patient burden. We briefly identify types of interventions that have been successful in treating trauma-exposed populations along with emerging interventions that are relevant to the particular problems associated with exposure to complex trauma and conclude with examples of how such treatments can be organized and tested. Research is now urgently needed on the effectiveness of existing and new intervention approaches to ICD-11 CPTSD treatment.

Key Words: Complex PTSD, CPTSD, patient treatment matching, modular sequential treatments.
In November 2018, The International Society of Traumatic Stress Studies (ISTSS) released its third revision of treatment guidelines which included a position paper for complex posttraumatic stress disorder (CPTSD) (ISTSS Guidelines Position Paper on Complex PTSD in Adults, 2019). The paper noted past critiques of the CPTSD construct, particularly the lack of a consensus concerning its definition and the consequent difficulties in providing treatment guidelines. As noted in the position paper, the first of these issues, namely the absence of an established definition of the construct has been resolved. CPTSD has formally been introduced into the diagnostic nomenclature in the eleventh edition of the *International Classification of Diseases and Related Health Problems* (ICD-11), the diagnostic system of the World Health Organization (WHO). Given that CPTSD is a new disorder, there are as yet no treatment studies assessing interventions that would be effective for the disorder, nor which of possible available treatment interventions will prove to be optimal. The purpose of this paper is to present the rationale for offering a patient-centred approach to the treatment of and research about CPTSD, it’s feasibility and potential benefits. The paper concludes with a broad description of research methods and implementation science practices to guide future research in the treatment of CPTSD.

**CPTSD: Patient Characteristics and Central Symptoms**

The diagnosis of CPTSD is organized into two over-arching groups of symptoms, those related to traumatic stimuli (PTSD) and those related to disturbances in self-organization (DSO). The three clusters of PTSD symptoms have been derived from decades of research (i.e., re-experiencing, avoidance and sense of threat (see Brewin et al., 2017). The DSO symptoms are organized into three categories that describe three conceptually distinct problem domains: namely problems with affect regulation, problems with self-identify and problems in relating to others. The two-factor formulation of CPTSD appears to be easy for clinicians to correctly identify as demonstrated by high rates of accurate differential diagnosis.
between CPTSD and PTSD and as compared to normality among over 1700 clinicians in 73 countries (Keeley et al., 2016).

An important step in identifying interventions that are particularly or more precisely relevant to the treatment of CPTSD is to explore patient characteristics that are associated with CPTSD as compared to PTSD and to understand the relationship of symptoms and symptom clusters to one another. In regard to patient characteristics, Karatzias and colleagues (2018) assessed the predictive strength of emotion regulation strategies, negative trauma-related cognitions and attachment style on the diagnosis of ICD-11 CPTSD as compared to PTSD. All three patient characteristics were differential predictors of CPTSD versus PTSD. The most significant differential predictor of diagnosis was negative cognitions about the self, characterised by a generalised negative view about the self and one’s trauma symptoms; this was followed by attachment anxiety, which was defined as involving a fear of interpersonal rejection or abandonment and/or distress if one’s partner is unresponsive or unavailable; the third differential predictor was expressive suppression, characterized by efforts to hide, inhibit, or reduce emotional expression.

These results indicate that negative self-concept is a highly salient characteristic of CPTSD. Indeed, using a very different analytic approach, two network analyses of CPTSD symptoms in community clinical samples (Kneffel et al., 2018) and population-based trauma samples (Kneffel et al., 2019) found similar results indicating that negative self-concept was the most central aspect of the CPTSD formulation. Network analysis allows for visual representation of symptoms and can identify which symptoms are central regarding strength and number of interactions with other symptoms. In theory, identification of these symptoms mark the most significant symptoms of the disorder and potentially an important treatment target. In the analysis of CPTSD symptom data from four nationally representative samples (Germany, Israel, the UK, and the USA), negative self-concept, specifically “feelings of
worthlessness” was central across all four sample regardless of differences in language, culture and types of traumas to which the populations had been exposed (Knefel et al., 2019).

Given these data, Karatzias et al. (2018) concluded that negative self-concept, specific types of attachment-based fears and emotion dysregulation in the form of inhibited emotional expression were differentially associated with CPTSD compared to PTSD. Interventions which address each of these problems in ways that are relevant to their particular content and dynamic may enhance treatment benefits. For example, it has been argued that severely negative views of self may be particularly responsive to compassion focused interventions (Gilbert & Irons, 2004). Furthermore, while emotion regulation difficulties are indirectly addressed in many treatments (e.g., via focused breathing training preceding exposure), direct psychoeducation on the impact of chronic trauma on emotion regulation and skills training in emotional expression might be helpful. Lastly, inclusion of psychoeducation regarding the impact of trauma on attachment and relational capacities may help “normalize” problems while interventions focused on increasing social engagement and relationship satisfaction and satisfaction in social engagement may be help resolve interpersonal difficulties.

This section has identified problems that are particularly salient to those with CPTSD and provided suggestions for interventions that might be of benefit. However, this does not answer questions concerning how to introduce new interventions into existing treatments. If new interventions are to be integrated into existing treatments how might this work? The following sections address these questions by introducing the treatment frame of “patient centred care” as a guide for future research.

The ICD-11 formulation of post-traumatic reactions into two rather than one disorder is consistent with a personalized medicine approach to treatment care. ICD-11 CPTSD has a greater number of different kinds of symptoms and typically results from more chronic and greater number of traumatic exposures. Studies comparing ICD-11 PTSD to ICD-11 CPTSD
have consistently found that CPTSD is associated with significantly poorer functioning, greater comorbidity and poorer quality of life compared to ICD-11 PTSD (e.g., Brewin et al., 2017, Cloitre et al., 2019; Karatzias et al., 2017). These data suggest that CPTSD is more severe than PTSD in clinically meaningful ways and that treatment of CPTSD may require a greater number of treatment interventions and/or a longer duration of treatment than PTSD. The difference between the two disorders in terms of their complexity and severity is expected to translate into treatment plans that personalize interventions specific to each disorder that will help optimize outcome for the individual patient while efficiently deploying limited mental health resources.

The development of different treatments is motivated by the presence of different disorders with different symptoms and associated levels of impairment. However, it is possible that patient populations with two different disorders could use the same treatments and have equally good outcomes. The next section of this paper reports on the results of two meta-analyses investigating this question.

**Limitations in Current Evidence Based Treatments**

The vast majority of evidence to date for the treatment of psychological trauma has been based on DSM-IV PTSD, which is a condition of three clusters of symptoms, resembling to high degree the new ICD-11 PTSD. Existing treatment guidelines for PTSD propose psychotherapeutic approaches as the first line of support for psychological trauma, and recommend trauma-focused psychological therapies, such as cognitive-behavioral therapy (CBT), and Eye Movement Desensitization and Reprocessing (EMDR) for Posttraumatic Stress Disorder (PTSD) (e.g., National Institute for Clinical Excellence [NICE], 2005; Australian Centre for Posttraumatic Mental Health [ACPMH], 2007). Trauma-focused treatments typically include repeated in vivo and/or imaginal exposure to the trauma, reappraisal of the meaning of the trauma and its consequences, or some combination of these
techniques. These therapies have been identified as efficacious for a range of PTSD survivors, including rape victims, survivors of childhood abuse, refugees, combat veterans, and victims of motor vehicle accidents (Foa, Keane, Friedman, & Cohen, 2009). Nevertheless, two recent meta-analyses have suggested that certain subgroups of patients may experience less benefit than others, and in addition, the effectiveness of the treatments may vary by type of outcome.

In the meta-analysis completed by Karatzias and colleagues (2019), randomized controlled studies of PTSD were reviewed which included not only measures of the three symptom clusters of PTSD but also those specific to CPTSD, namely affect dysregulation, negative self-concept, and disturbances in relationships. Analyses assessing outcomes for each of the six specific symptom clusters, as they were available across studies, revealed that as compared to waitlist or treatment as usual, cognitive-behavioral therapies, exposure alone and EMDR yielded superior outcomes. However, this effect was negatively moderated by childhood abuse, where outcomes for each of the six symptom clusters were consistently less positive for the subgroup of participants with childhood trauma.

A second meta-analysis following a similar strategy to estimate the benefits of current therapies for CPTSD was conducted by Coventry and colleagues (2019). The investigators found that both trauma and non-trauma focused therapies provided substantial benefits for PTSD symptoms but noted that the positive effects for the DSO symptom clusters (i.e., affect dysregulation, negative self-concept and interpersonal problems), were modest. There was some suggestion that multi-component therapies provided better outcome, particularly among childhood sexual abuse survivors.

Overall, these two meta-analyses suggest that while current therapies are effective, they proved lesser benefits for those likely to have CPTSD and that multicomponent
therapies might be one approach by which to improve outcomes. The evidence indicates that current therapies may serve as the basis for or be one component of CPTSD treatment. Identifying which treatment interventions or components might be integrated into existing therapies requires better understanding of the disorder and of characteristics of the individuals who have the disorder.

**Patient Centred Care for CPTSD**

The core principle of patient-centred care is recognition that symptoms or problems that are important to one individual with a particular condition are not necessarily important for another individual with the same condition. Patient-centred care also acknowledges that the needs of the individual change over time as s/he receives care from services (Health Foundation, 2014). The meta-analytic analysis described above (Coventry, 2018) revealed that patients likely to have CPTSD have higher attrition rates than other patients. One means by which to reduce attrition is to create treatment programs that are tailored to the specific concerns for which the patient seeks treatment. Similarly, ongoing assessment of symptoms or patients’ concerns provide the basis for reasoned shifts in treatment focus and interventions, potentially strengthening patient engagement and leading to increased benefits.

The Health Foundation (2014) has identified a framework that comprises four principles of person-centred care including affording people dignity, compassion and respect, offering coordinated care, support or treatment, offering personalised care, support or treatment and lastly, supporting people to recognise and develop their own strengths and abilities to enable them to live an independent and fulfilling life. In this framework, the role of the health care professional is to enable the individual to make decisions about their own care and treatment on the basis of their needs. A number of health and economic outcomes have been associated with person centred care including less use of emergency services (De Silva, 2011), greater treatment adherence (De Silva, 2012a) and greater patient satisfaction
Treating Adults with CPTSD (Rathert et al., 2012). Patient centred care has also been associated with increased staff performance and morale (De Silva, 2012b).

Patient-centered care is central to the policies of the UK and the United States. For example, the Health and Social Care Act 2012 imposes a legal duty for NHS England and clinical commissioning groups (CCGs) to involve patients in their care (The Kings Fund, 2012). Similarly, in the United States, the recent mandate for patient-centred care, associated with the Patient Protection and Affordable Care Act of 2010, has articulated that patient-centred care requires the identification of outcomes about which patients care, the development of treatments that address these concerns, and research which routinely includes patient preference as a relevant factor in the selection of the optimal treatment.

This theoretical frame and commitment to patient-centred care supports the selection of a treatment approach for future research, namely the evaluation of flexible modular and sequential treatment programs where treatment goals and interventions are ordered according to patient recovery stage, needs and preferences.

**Modular Treatments**

The presence of CPTSD diagnosis is expected to enhance treatment outcomes by facilitating the development of treatment plans that tailor the selection of interventions and their delivery more closely to the needs of a patient with CPTSD versus patients with PTSD. However, as suggested above, the “lessons learnt” about personalizing care extend beyond matching a manualized treatment program to a specific trauma disorder. The movement from manualized treatment to personalized care suggests treatment planning attends to the individual per se not just an individual with CPTSD rather than PTSD. While the general notion of personalized care is not new to mental health practice (see British Psychological Society, 2011), there has been little to no research in this approach in the trauma field.

We propose a flexible modular approach to the treatment of CPTSD where patient
and therapist collaborate on the selection of a set empirically supported treatment modules or interventions intended to resolve specific problems of concern. This treatment strategy is viable for several reasons. First, CPTSD has two relatively distinct symptoms clusters (PTSD and DSA) allowing therapists and clients to assess which problems are of greater concern and selecting interventions accordingly. Second, there is precedent for the successful use of a flexible modular treatment approach in mental health albeit with paediatric populations. Third, there is indirect evidence of the success of multi-modular treatments in trauma populations. Relevant research is presented as follows.

The use of a flexibly-applied multi-modular treatment approach is new to the trauma field signalling a treatment innovation and paradigm shift in clinical approach research methodology. However, there is a good rationale for its application and a successful precedent in mental health that lays out a methodological road map for its testing. First, such approaches have been found to be more effective compared to use of full protocols for a single disorder (Daleiden, Chorpita, Donkervoet, Arensford, & Brogran, 2006) or to the sequencing of full protocols for different disorders (Weisz et al., 2012). Second, the treatments appear to have a second benefit for patients in that they tend to be shorter and so time and expense burdens on the patient (Weisz et al., 2012). Third and relevant to treatment uptake of evidence-based therapies (EBTs), clinicians trained in a modular therapy versus those trained in disorder-specific manualized therapy showed improved attitudes about evidence-based practices (Borntrager, Chorpita, Higa-McMillan, & Weisz, 2009). Moreover, clinicians reported greater satisfaction with modular treatments as compared to standard evidence-based and reported assessed them as more effective as compared to usual care, suggesting that modular treatments provide the “best of both worlds” with high ratings on both practitioner satisfaction and effectiveness (Chorpita et al., 2015).
Several trauma-focused therapies have used forms of modular or sequenced approaches. They differ from the current proposal in that modules were used in a specific sequence while the current proposal suggest that the selection of modules be flexibly ordered and applied based on patient symptoms and preferences. The benefits of these approaches, however, demonstrate their feasibility and potential success among trauma patients. Some of these therapies include STAIR Narrative Therapy (formerly STAIR plus modified exposure), Eye Movement Desensitization and Reprocessing (EMDR) and Brief Eclectic Psychotherapy (BEPP) to treat PTSD (see Schnyder & Cloitre, 2015 for description of these treatments). In addition, there has been formulation of modular or sequenced treatments for addressing comorbid BPD and PTSD developed by Harned and colleagues (Harned et al., 2014) in which dialectical behaviour therapy is initiated to resolve suicidal and self-injurious behaviour and once controlled, is followed by prolonged exposure (PE) (see Schnyder & Cloitre, 2015).

At least one randomized controlled study has applied a modular approach to a complex trauma population (childhood abuse survivors) and provided specific attention to emotion regulation and interpersonal difficulties (Cloitre et al, 2010). In this study the test condition sequenced a module focused on improving emotion regulation and interpersonal problems (Skills Training in Affective and Interpersonal Regulation (STAIR) followed by a module which added a trauma memory processing intervention (Narrative Therapy). The study compared the sequenced treatment with two other conditions where in each condition one or the other module was removed and replaced with a generic active nonspecific supportive counselling. Results indicated that overall, the combination treatment, STAIR Narrative Therapy, provided greater improvement in PTSD symptoms, emotion regulation and interpersonal problems than the two comparator conditions. The attrition rate in the combination treatment was lower than that in narrative-focused condition while that for the
skills-focused condition fell in the middle. The reasons for this differential attrition rate cannot be identified but may relate to the presence of multiple interventions that were of interest and relevant to patients, supporting patient engagement throughout the treatment.

The above findings suggest the potential benefits of modular sequenced treatments in terms of attrition rates and outcomes relevant to CPTSD symptom clusters. Further research is needed to determine whether additional or different modules might be of equal or greater value. The treatment did not address (nor measure) issues related to negative self-concept, which has been identified as a central symptom of CPTSD. To our knowledge, no studies engaging trauma populations have tested the differences regarding the order of modules or the benefits of including flexibility in the order of the modules based on patient symptoms and preferences. It might be suggested that most patients would prefer to start with skills training as a strategy to avoid discussing their trauma history. This is a hypothesis that remains to be tested. Patients may be willing and desirous of discussing their trauma, once given the freedom to choose and evaluate the potential pros and cons of different types of sequencing strategies.

Existing therapies and treatment modules

The above literature suggests the feasibility of multi-modular treatment approaches as well as some evidence suggesting its potential benefits for trauma populations. There are several types of interventions or modules that might be developed and considered as relevant to the CPTSD population. These include for example emotion regulation intervention modules (e.g., focused breathing, emotional awareness and self-soothing exercises), interventions to address negative self-concept (e.g., cognitive re-appraisal of self-worth, self-compassion) and modules to address interpersonal difficulties (e.g., communication skills, cognitive flexibility around interpersonal expectations, interventions addressing problems with anger and intimacy) and potentially developmentally informed strategies to reset
attachment representations (Liotti, 2004). The PTSD symptom clusters which are an equally important part of the CPTSD can be addressed via exploring and making meaning of the trauma (exposure, narratives, cognitive processing).

In the most flexible version of the multi-modular approach, there is no fixed ordering of sequences at the outset of treatment. Rather, the selection of the module or intervention is adjusted according to the patient’s treatment response over time (Lei, Nahum-Shani, Lynch, Oslin, & Murphy, 2012). Assessment of CPTSD symptoms would be routinely made through the course of therapy, as more than one problem may resolve with the use of a single module or intervention. Selection of the sequence of modules or interventions would be based on updated symptom reports evaluated in a collaborative fashion between therapist and patient.

Limitations of a flexible multi-modular approach must also be considered. First, there may be several interventions and modules appropriate for the CPTSD patient population, which may in turn create a burden on therapists to be informed about and skilled in the use of several different techniques. This might be resolved through the use of technology where apps or web-based programs provide guidance to both the provider and patient. Second, there may be greater reliance on the clinician’s skill in building a therapeutic alliance with the patient and resolving conflicts when differences emerged between therapist and patient regarding which interventions to use and their order. The resolution of this problem would require discussion very early in the treatment to identify treatment goals, symptom targets and interventions likely to be used in the program. Third, the use of adaptive treatment requires routine assessment of symptoms for feedback and decision making, a dimension of treatment process which is not routine and which may be viewed as burdensome. The use of brief assessments and an explanation of their key role in the treatment may help resolve resistance to this task. Finally, the application of modular therapy will require therapists making judgments of what treatments to choose, when to choose, how to communicate and
make the decision with the clients, and how to assess the outcome of different sequences as well as selection of modules. Appropriate support at service level including the use of clinical supervision can be particularly useful in supporting clinicians to make these choices.

**Directions for Future Research in the Treatment of CPTSD**

CPTSD is a debilitating condition associated with severe functional impairment. There is now an urgent need for research in the area of CPTSD treatment. This paper has identified a promising treatment approach namely flexible modular approach and provided the rationale and the emerging evidence for it. However, there are several directions for future research that can be considered and deserve mention. The simplest RCT may involve comparing the differential effectiveness of established treatment between patients with ICD-11 CPTSD compared to PTSD and assess the relative benefits of as-needed increases in the treatment dose (e.g., increased number of sessions or addition of booster sessions following treatment). A second design would include the addition of interventions or modules to an existing PTSD treatment where additions explicitly target DSO symptoms. In this design, treatment conditions could test the potential benefit of the additional component compared to the standard treatment (e.g. STAIR+CPT (or PE) vs CPT (or PE) alone) or ordering effects (e.g. STAIR+CPT (or PE), CPT (or PE)+STAIR vs. CPT (or PE) alone). The use of established treatments as benchmark comparator is important as it remains unknown whether sequential or integrated treatments are superior to already established treatments for CPTSD. The feasibility and efficacy of novel treatments compared to waitlist are also to be considered. These might include the adaptation of treatments for other disorders or from other traditions as has been conducted with Interpersonal Psychotherapy (IPT) and mindfulness therapy.
More complex designs might include comparison of different kinds sequencing strategies where, for example, in one condition patient choice drives the sequencing of treatment in comparison to a condition with a fixed sequence and where both conditions are compared to an existing treatment. Lastly, the most complex design would involve a condition in which treatment sequences are open-ended at the beginning of treatment and the selection of each new module is determined by the patient’s response after each module, an approach which is called “sequential, multiple assignment randomized trials” or SMART (see Lei et al., 2012). However, it should also be acknowledged that such designs require large samples and this can only be achieved through multi-centred studies.

In all these designs, symptom assessment occurs at regular intervals throughout the course of treatment to determine whether, when, and how much symptom change is occurring. The relative speed of change for PTSD as compared to DSO symptoms is unknown as is the way in which these symptoms may influence one another over time. Adaptive designs such as SMART require periodic assessment of treatment outcomes and processes so that clinicians and patients can receive feedback about patient progress and make informed treatment decisions, otherwise known as “measurement feedback systems.” These assessments need to be psychometrically sound, sensitive to clinical change and brief enough for frequent administration (Ng & Weisz, 2016). To date, there is at least one brief, validated measure of CPTSD which includes symptom assessment of all six symptom clusters (Cloitre et al., 2018).

Lastly, the evaluation of the effectiveness of treatments for CPTSD might best be considered in the context of real-world clinics, implemented by community clinicians, provided to clinic patients with fewer inclusion and exclusion criteria. The use of pragmatic trials can facilitate the transition from evaluation to implementation and dissemination of a treatment if it is found effective. Moreover, research indicates that even when a treatment is
identified as effective, clinician uptake can be limited if the treatment delivery is rigid and does not appear to be adaptable to the needs of individual patients (Nelson, Steele, & Mize, 2006). Collection of qualitative data (e.g., interview data) from clinicians about perceptions regarding the flexibility or adaptability of the program will help identify and resolve trouble spots in a treatment protocol and facilitate dissemination of the protocol if successful.

The advent of the CPTSD diagnosis has arrived at a time of a paradigm shift in clinical trials methodology. Research is moving away from traditional RCTs, which have provided useful information about the average outcomes of a treatment, to a personalized medicine approach that evaluates the potential benefits of tailoring treatments goals, interventions and outcomes specific to the individual patient. Given that highly traumatized patients have experience substantial loss of autonomy, mastery, and perceived support, a treatment paradigm in which the patient directs the treatment content and goals supported by a knowledgeable provider would likely be empowering for patients ultimately leading to optimal outcomes. Future research will determine whether this is the case.
References


Coventry, P (in development/submission). Authors and Title TBD.


