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Self-study assisted Cognitive Therapy for PTSD: A case study

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Abstract

Research has demonstrated that *Cognitive Therapy for PTSD* (CT-PTSD), a version of trauma-focused cognitive-behavioural therapy developed by Ehlers and Clark's group (2000), is effective and feasible when offered in weekly and intensive daily formats. It is unknown whether patients with posttraumatic stress disorder (PTSD) could engage in and benefit from self-study assisted cognitive therapy, which would reduce therapist contact time. This case report aims to illustrate this possibility. A patient with PTSD and comorbid major depression, who developed these problems following a road traffic accident, was treated in six sessions of cognitive therapy with six self-study modules completed in-between sessions. The patient made a complete recovery on measures of PTSD, anxiety, and depression as assessed by self-report and independent assessment. Self-study assisted cognitive CT-PTSD reduced the therapist contact time to half of that normally required in standard CT-PTSD. This highlights the potential feasibility and therapeutic benefits of self-study modules in the brief treatment of PTSD. Further research is required to systematically evaluate the acceptability and efficacy of brief self-study assisted CT-PTSD.

Keywords

PTSD; self-study assisted treatment; cognitive therapy; road traffic accident; cognitive behavioural therapy; self-help

Introduction

Posttraumatic stress disorder (PTSD) is a severe stress reaction that develops in some people after traumatic events, such as accidents, disaster or physical or sexual violence. It is one of the most common anxiety disorders and is linked to high rates of comorbidity, chronic disability and long-term healthcare costs (Kessler, 2000). Over the past decades, effective psychological treatments of PTSD have been developed. Trauma-focused cognitive behavioural therapy (CBT) has repeatedly been demonstrated to be effective and is currently recommended as a first line treatment for PTSD (e.g., American Psychiatric Association, 2004; Australian Centre for Posttraumatic Mental Health, 2007; Foa, Keane, Friedman, & Cohen, 2005; National Institute of Clinical Excellence, 2005; Stein et al., 2009; Veterans Health Administration & Department of Defense, 2004). Protocols vary but treatment typically consists of between 8 to 12 sessions (Bisson et al., 2007). However, in cases with complex comorbidity or multiple trauma, CBT for PTSD can span more than 20 sessions (e.g., Gillespie, Duffy, Hackmann, & Clark, 2002). Furthermore, treatment sessions in trauma-focused CBT are longer than the standard 50 min session and usually last about 90 min for sessions when the trauma is being discussed. Thus, although CBT is a short-term treatment, it requires a significant amount of therapist time and many patients with PTSD are currently unable to access CBT as resources are limited and there is a shortage of trained therapists.

This raises the question of whether there are ways to deliver CBT to patients with PTSD in a more economic way. Unfortunately, attempts to treat PTSD by self-help alone have failed (e.g., Ehlers et al., 2003). Nevertheless, it may be possible to cover some components of the

treatment by self-study modules to save therapist time, while delivering those that require input and support from the therapist in face-to-face sessions. For other anxiety disorders and depression, effective self-study assisted CBT programmes have been developed (e.g., Clark et al., 1999, 2010; Wright et al., 2005). These brief treatments are less costly than therapist-only treatments. PTSD has received less attention in this respect, although there is an emerging interest in internet-based treatment of PTSD (e.g., Knaevelsrud & Maercker, 2007). This may in part due to the complexity of the clinical features of PTSD, the high rates of comorbidity and the well-documented memory and concentration problems linked to the disorder.

The purpose of this report is to illustrate the possibility of treating PTSD in a self-study assisted brief therapy format. The present self-study assisted treatment builds on *Cognitive Therapy for PTSD* (CT-PTSD), a trauma-focused CBT programme developed by Ehlers, D.M. Clark and colleagues. CT-PTSD is usually delivered in up to 12 weekly sessions and has been demonstrated to be very acceptable to patients and effective in five randomized controlled trials (Ehlers et al., 2003; Ehlers et al., 2005; Ehlers et al., in prep.; Duffy et al., 2007; Smith et al., 2007). An intensive version of this treatment, offered over five to seven days rather than 12 weeks, has also been shown to be feasible and effective (Ehlers et al., 2010, in prep.).

CT-PTSD is based on Ehlers and Clark's (2000) cognitive model of PTSD. This model suggests that people with PTSD perceive a serious current threat that has two sources, excessively negative appraisals (personal meanings) of the trauma and/or its sequelae and characteristics of trauma memories that lead to reexperiencing symptoms. The problem is maintained by cognitive strategies and behaviours (such as thought suppression, rumination, safety-seeking behaviours and avoidance) that are intended to reduce the sense of current threat, but maintain the problem by preventing change in the appraisals or trauma memory, and/or by increasing symptoms. CT-PTSD targets the three factors specified in the model. For each patient, an individualized version of the model is developed. The maintaining factors are addressed with the procedures described in the appendix. The relative weight given to different treatment procedures differs from patient to patient, depending on the case formulation.

The new self-study assisted version of CT-PTSD treatment has recently been developed by the Wellcome Trust Anxiety Disorders Research Group at King's College London and the Centre for Anxiety Disorders and Trauma, Maudsley Hospital, London (Anke Ehlers, Jennifer Wild, Richard Stott, Nick Grey, Alicia Deale, Rachel Handley, Debbie Cullen and Idit Albert).

Self-study modules were written to cover aspects of the treatment programme that patients could complete on their own such as information gathering and experiential assignments that do not require the presence of the therapists. The modules are written in accessible, lay language. They differ in length from about 8 to 25 A4 pages. There are seven core modules designed to be completed by all patients. These focus on

1. normalising symptoms of PTSD, assessing how the patient has coped with the trauma and PTSD symptoms so far (to identify behaviours that maintain the problem) and identifying the patient's treatment goals (*It All Makes Sense* module)
2. *reclaiming your life* assignments (*Reclaiming Your Life* module),
3. identifying hot-spots and updating them in memory (*Working on Your Memories* and *Updating Your Memories* modules),

4. spotting and overcoming triggers to intrusive memories (*Spotting your Memory Triggers* and *Beating Your Memory Triggers* modules) and
5. creating a plan for set-backs (*Creating You Blueprint* module).

A range of optional modules are given as needed, depending on the individual case formulation. These focus on different *cognitive themes*, such as appraisals linked to shame, guilt, anger, or overgeneralisation of danger, common *maintaining strategies* such as rumination or substance use, or common comorbid problems, such as grief, sleep difficulties or depression.

Case Presentation

Initial Assessment

Philip, a White 60-year-old British man, had a road traffic accident on the motorway three months before presenting for assessment. The driver of an adjacent car fell asleep and drove into Philip's car from the side. His daughter and grandson were sitting in the back seat. Philip's car spun twice. He tried to look around to see if his daughter and grandson were safe, but he was trapped and could not see them. He thought they were flying about in the car like everything else and that they had died. The car eventually landed on its four wheels. Philip described excruciating pain in his back. He thought that he had broken his back. He could not hear his daughter or grandson and believed they must be dead. However, they had survived. His daughter had a broken arm and his grandson was without injury.

When Philip presented for assessment he was having intrusive memories of the accident every day in which he saw the car spinning. He also had intrusive images of what could have happened and pictured his daughter and grandson dead in the backseat. Philip had flashbacks when he drove his car, which happened several times per week, and he felt hot and sweaty in these situations. He also often woke up with nightmares about the accident.

Philip pushed memories of the accident out of his mind, especially at bedtime. He avoided places that reminded him of the trauma, especially motorways and where it happened on the motorway. Whilst he could remember the trauma, he could not remember, until he was told by his daughter, that the car had rolled twice. Philip had many hyperarousal symptoms. He had difficulty sleeping, felt irritable, had trouble concentrating and was overly alert.

Philip also developed depression after the accident. He was low in mood, tearful, unmotivated and preferred to stay indoors rather than engage in his previous activities, such as meeting friends for a drink and going out with his wife once a week for a meal.

Philip met the criteria for PTSD and major depression as set out in the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV; American Psychiatric Association, 1994) and assessed with the Structured Clinical Interview for DSM-IV (SCID, First et al., 1995). In addition, Philip had chronic back pain from the accident. The pain was a constant reminder of the accident and could trigger intrusive memories and rumination.

Cognitive Formulation

Appraisals—In terms of personal meanings of the trauma, objectively Philip knew the accident was not his fault but he felt as though it was. He believed this 60%. He concluded from the accident that he was incapable of keeping his daughter and grandson safe, especially because another (small) accident had happened when his grandson was in his care. He believed this 80%.

Memory—Philip's primary symptoms were upsetting, recurrent memories of seeing the car spinning. His memory was unclear about some details, for example, he had only learned from his daughter about the car spinning twice. When the intrusive memories popped up, he imagined his daughter and grandson being dead, and then tried to push thoughts of the accident out of his mind. Thought suppression made his images pop up more frequently. Pushing them out of his mind at the worst moments also prevented him from updating these moments in memory with the information that in fact his daughter and grandson were alive.

Further maintaining behaviours—In addition to the suppression of trauma memories, Philip used a range of other behaviours that maintained his PTSD. Philip still drove but he avoided going on motorways. When he was required to drive on the motorway, he checked the position and speed of other cars very closely and imagined accidents happening. This maintained his conviction that he had to be especially careful to prevent further accidents, and thus his anxiety about driving. He ruminated about the accident being his fault and his inability to keep his family safe, which maintained these appraisals and caused him to feel sad. He also avoided seeing his grandson to limit the chances of further accidents and limited how often he saw his daughter because he felt guilty about what had happened. The withdrawal from his family prevented him from finding out that they were safe with him. It also contributed to his low mood and because he felt low, he stopped going out and doing the things he used to enjoy such as eating out once a week with his wife. This further maintained his low mood.

Treatment Goals—According to the case formulation, the main treatment goals according to the Ehlers and Clark (2000) model were:

Appraisals:

- To reduce Philip's sense that he was responsible for the accident and
- To change his appraisal that he was incapable of keeping his daughter and grandson safe.

Memory:

- To reduce intrusive reexperiencing and nightmares by (1) identifying information that puts the threatening meanings of the moments represented in reexperiencing into perspective and (2) updating these moment in memory with this information.

Maintaining Behaviours and Cognitive Strategies: To reduce

- suppression of intrusive memories,
- rumination about his perceived inability to keep his daughter and grandson safe,
- avoidance of his daughter and grandson,
- avoidance of motorways and
- excessive checking of other traffic when driving.

To build up

- activities that were important to Philip before the accident and
- daily activity, including physical activity, to help with depression and pain.

Treatment Plan—According to the initial formulation, the following treatment procedures described in the appendix appeared especially relevant for Philip:

- Updating the memory for the worst moments of the trauma,
- *reclaiming your life* assignments,
- behavioural experiments to reduce thought suppression, avoidance and excessive checking,
- cognitive restructuring of appraisals of being responsible for the accident and incapable of keeping his family safe.

Clinical Measures

On the Posttraumatic Stress Diagnostic Scale (PDS; Foa, Cashman, Jaycox, & Perry, 1997) Philip scored 29 in the moderate-to-severe range of PTSD symptom severity. On the Impact of Events Scale-Revised (IES-R; Weiss & Marmar, 1997), Philip scored 71 in the severe range. On the 9-item Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer, & Williams, 2001), Philip scored 15 in the severe range for depression. On a 7-item measure of generalised anxiety (GAD-7; Spitzer et al., 2006), Philip scored 16 also in the severe range. Philip completed these questionnaires at assessment and prior to every weekly treatment session. Two weeks prior to session 1, Philip was assessed by an independent assessor who administered the Clinician-administered PTSD scale (CAPS, Blake et al., 1990). The total CAPS severity score was 76.

Therapy

The therapist met briefly with Philip after the independent CAPS assessment to give him the first two core modules (*It All Makes Sense* and *Reclaiming Your Life*) and asked him to complete them before the first session.

The *It All Makes Sense* module focuses on normalising the symptoms of PTSD and obtaining information that will help the case formulation and develop treatment goals. It includes patient testimonies of their experience of *Cognitive Therapy for PTSD*. It asks clients to describe their flashbacks as well as feelings and physical responses to reminders of their trauma. It encourages them to note any triggers of their trauma memories and the key emotions linked to their trauma, such as fear and shame, and the thoughts linked to these emotions. It then helps patients to identify their safety-seeking behaviours (Salkovskis, 1991). The module explains why PTSD is linked to physiological arousal and guides the patient to elicit the ways in which they cope with their trauma memories, such as through distraction, alcohol, rumination, or suppression. The module includes an example of another client's treatment goals and space for the client to write out their goals for treatment.

The *Reclaiming Your Life* module educates the patient as to how PTSD can cause patients to stop doing activities they used to do. It then encourages patients to identify what they would like to do again in different areas of their life, such as in their free time and in their home and social life. The module then encourages them to complete a weekly plan in which they identify activities they would like to do and aim to try at least one of these before they meet with their therapist. The module includes a troubleshooting section, which normalises and problem solves potential obstacles to completing the planned activities, such as 'I don't have any energy for doing anything,' and 'It will be too traumatic – I won't be able to cope.'

In addition, the therapist gave Philip the *Chronic Pain and PTSD* module which describes the effects of chronic pain on feelings and behaviours and guides the patient to identify the effects of chronic pain in their life, as well as the effects of PTSD on chronic pain, such as continually reminding the patient of their trauma. The module also explains why it is important to not give up physical activity in response to chronic pain.

Session 1

Philip arrived at the session having completed all three modules. The therapist reviewed these prior to commencing the 90-minute session. Philip had spent 55 minutes over two days completing the *It All Makes Sense* module. He had spent 200 minutes over two days completing the *Reclaiming Your Life* module, and this included the time he spent on an activity he had conducted as part of his weekly plan to reclaim his life. He had spent 85 minutes over three days completing *Chronic Pain and PTSD*.

The therapist's aims for the session were to operationalise Philip's treatment goals in a concrete way, provide a treatment rationale, and to conduct an imaginal reliving of the accident (Foa & Rothbaum, 1989) to identify Philip's emotional hot-spots, that is, the worst moments of the trauma and their linked emotions and personal meanings.

The client's operationalised goals were to: First, to feel happy, which would mean that he could go out more, go shopping with his wife, and feel comfortable driving on the motorway. His second goal was to reduce his nightmares so he could sleep through the night and no longer wake up in a cold sweat. His third goal was to think about his accident without getting upset.

The therapist was able to weave the client's goals into the rationale for revisiting and updating his memory of the accident, since it was hypothesised that his sleep would improve and he would come to terms with his trauma following the process of updating his trauma memory. When presenting the rationale, the therapist drew on information the client provided in the module *It All Makes Sense*, specifically that he pushed the trauma out of his mind. The client was guided to discover that going over his trauma memory in detail would help him to emotionally process it, and transform it into a regular autobiographical memory without unexpected intrusions. The session contained 30 minutes of imaginal reliving. Philip rated his distress at 90% and the 'nowness' (impression that it is happening now rather than being a memory from the past) as 80%. This was followed by asking the client to identify his worst moments, and what went through his mind in these moments during the trauma. Philip identified two hot-spots, first, the car spinning after the impact and second, the car landing on its wheels from what appeared like a great height. Both hot-spots meant at the time to him that his daughter and grandson may die or had died. This filled him with fear, sadness and feelings of guilt. The second also meant to him that he may have broken his back.

To conclude the session, the therapist drew out a weekly plan of *Reclaiming Your Life* homework with Philip and asked him to note his level of satisfaction out of 100% for each activity. This aimed to target inactivity, which maintained his low mood and contributed to his pain. The client was also given a module, *Working on Your Memories*, which addresses the consequences of suppressing unwanted memories, how to cope with them, asks clients to write out a narrative of the trauma in the first person present tense, and questions to help identify hot-spots. The module also includes a patient's example of their written narrative and hot-spots.

Session 2

Philip had spent 65 minutes completing *Working on Your Memories* over three days. He had also completed his weekly *Reclaiming Your Life* plan and had rated most activities as being 70% satisfying. The therapist's plan for this session was to review the client's homework, reinforce what he had learned from being active, and elicit new information to update the meanings of his hot-spots. Philip had learned that when he was active his mood improved, and this encouraged him to plan more activities. The therapist then focused on one belief linked to both hot-spots: that his daughter and grandson had been harmed or died

in the accident. The therapist encouraged Philip to think about what he knew now in relation to his daughter and grandson being alive. Philip was asked to think about the times he had seen them since the accident. He recalled that he had seen them a few times and that on one occasion this had been a happy experience. They had surprised him on Father's Day. Philip could visualise their smiling faces, recall their conversations, and could vividly picture his grandson playing with his mini-football. To update the hot-spots in memory, Philip was then asked to close his eyes and recall the moment of impact of his accident, recalling what went through his mind and what he knew now. He ran the worst moment on to include the information that this daughter and grandson were safe and he pictured them at his recent Father's Day celebration.

Again, in conclusion to this session, the therapist and Philip agreed on a weekly plan of *reclaiming your life* activities for him to complete and to note his level of satisfaction for each activity. As Philip had been avoiding seeing his daughter and grandson because he believed they would be unsafe with him, one of his reclaiming his life activities was set up as a behavioural experiment. This experiment had two purposes: to test his belief that they would be harmed in his presence, and to encourage him to reengage in significant activities he had given up since the trauma, which was to see his family more often.

The client was also given the *Updating Your Memories* module to further focus on information to update his worst moments. This module includes a rationale for looking at hot-spots in detail to update them and examples of how other patients have done this. A space is provided for the patient to describe the situation linked to their hot-spot, the thoughts that went through their mind and their meaning at the time ('*then*'), what they know *now*, and how they can remind themselves of what they know *now*.

Session 3

Philip had spent 70 minutes completing the *Updating Your Memories* module. Table 1 shows his hot-spots and how he had updated them in the module.

Philip had also completed his weekly *Reclaiming Your Life* plan and had rated most activities as being 80% satisfying. The therapist planned to review the client's homework, address his rumination about what could have happened and about his inability to keep his daughter and grandson safe, which was maintaining Philip's anxiety, and to address his appraisal that he was responsible for the accident.

Philip was continuing to learn from his homework, that being active helped to lift his mood. In comparison to his level of activity before therapy, he was also able to see that being inactive kept him feeling low. Philip had completed his behavioural experiment to test his belief that his daughter and grandson were unsafe with him. He had asked them to come over for lunch on the weekend. Nothing had happened to them in his presence and he re-rated his belief that they would be harmed with him from 80% to 20%. In the session, the therapist guided Philip to discover that ruminating about his inability to keep his daughter and grandson safe triggered intrusive memories of his accident, and made him feel anxious. He discovered that when he was ruminating, he was not taking in new information that they were in fact well and that there were many times he had been with them and no danger had occurred. Philip now planned to visualise his daughter and grandson at his Father's Day celebration when he noticed he was ruminating, and to focus on the information that they were well and had survived the accident. Philip was then asked to generate reasons for why the accident had happened. He recalled that the main one was that the driver who had hit their car had fallen asleep. This information did not fit with his belief that he was responsible for the accident, which dropped from 60% to 40% with this information. In addition, the session started to address Philip's checking behaviours when driving. Philip

understood that constantly checking the position, speed etc of other cars may contribute to his concerns about the dangers of driving and he was willing to do a behavioural experiment which involved (1) driving on the motorway while checking, and (2) driving while dropping the checking behaviour to observe the effect on his levels of anxiety/ relaxation and his sense that an accident was going to happen. To conclude the session, the therapist again drew out a weekly plan of *reclaiming your life* activities with Philip to complete in the following week. The behavioural experiment to drive with and without checking behaviour was also noted on this plan.

The module *Guilt and Self-Blame* was given to the client. This module helps clients to understand why they feel guilty, what thoughts and thinking errors guilt is linked to, and how to let go of guilt. The client is encouraged to consider all possible causes of their trauma and to rate the contribution of these factors to the occurrence of their trauma in a responsibility pie chart. The module has examples of how other patients have completed specific questions.

Session 4

The client had conducted his behavioural experiment and rated that he felt 80% relaxed when driving without checking compared to 80% anxious when he drove and checked. He agreed to build on this experience and do more driving without checking until the following session. He had also completed his *reclaiming your life* tasks. He had spent 90 minutes over 4 days working on the *Guilt and Self-Blame* module. Philip's self-blame about the accident had dropped from 60% to 40% in the previous session and following this module, it dropped to 0%.

The main plan for this session was to continue updating Philip's hot-spots by simultaneously bringing the hot-spots and the information gathered in therapy to mind that were relevant to their meanings. This was, first, that Philip's daughter and grandson had not died as he had feared. A moment when he had seen them just after the accident sitting on a bench talking and smiling reinforced the updated meaning that they were alive, as did the image of them smiling at his Father's Day celebration. Second, the accident was not Philip's fault as it was the other car that had hit theirs. Third, Philip did not break his back and could walk again after the accident. One problem that made it difficult for Philip to update his hot-spots was that he had not been able to see his daughter and grandson during these moments. To facilitate access to his knowledge about what had actually happened while focusing on the trauma, the therapist had the client imagine the trauma from a third person perspective, watching what was happening to him and his family. The client rated this as 75% distressing with a nowness rating of 80%, but this came down to 0% distressing and 10% for nowness when he also visualised his daughter and grandson in imagery first sitting on the bench, smiling, and then smiling at his Father's Day celebration.

Homework included driving without checking, teaching his other daughter how to drive, and pleasurable activities. The client was asked to read through the *Guilt and Self-Blame* module again to consolidate learning about being responsible for the accident.

Session 5

The client felt much improved and his intrusive memories and nightmares had ceased. He had spent 30 minutes reviewing the *Guilt and Self-Blame* module, and had continued to drive without checking and reported he had felt 85% relaxed. This session addressed his belief that he was incapable of looking after his grandson because the car accident was the second time there had been an accident of some sort while Jake had been in his care. Another time, he had held Jake and had fallen. Philip realised that he had been with his

grandson many times without any accidents happening and that he thus overestimated the likelihood of accidents. He further realised that the car accident had not been his fault and thus was not good evidence for his ability to look after his family. Furthermore, in both cases Jake had not been seriously hurt.

Homework was again to conduct daily activities, which included seeing his daughter and grandson, and rate his satisfaction, to continue with his driving, and to complete the module *Blueprint*.

The *Blueprint* module reviews what the client has learned in treatment to help with the prevention of any set-backs or relapse. It asks the client to answer key questions about how their problem started, what kept it going, what they learned in therapy, what their unhelpful and now-updated thoughts were, how they could build on what they have learned, and how they could address set-backs if they occurred.

Session 6

This session focused on reviewing and adding to the client's blueprint and trouble-shooting any problems that could arise in the one-month follow-up period. Philip had spent 60 minutes completing his *Blueprint* module. For homework, the client was asked to continue driving, doing activities regularly, and to review his blueprint once per month.

Follow-up Session

Philip attended a brief follow-up session one month after treatment ended. This session contained a probe reliving of the accident. Philip's distress and nowness levels were 0%.

Outcome

Philip's treatment spanned six weeks. In his sixth and final session, he scored in the non-clinical range on all symptom measures, PDS: 2, IES-R: 8, PHQ-9 :1, GAD-7:1 He no longer met criteria for PTSD on the CAPS as assessed by an independent assessor, with a CAPS total score of 4. He no longer met criteria for major depression as assessed by the SCID. At the 1-month follow-up session, he scored 0 on the PDS, IES-R, PHQ-9 and GAD-7. Philip was contacted again two months after treatment ended. He maintained his gains and scored in the non-clinical range on all measures, PDS: 4, IES-R: 5, PHQ-9: 4, GAD-7: 0.

Discussion

This case report demonstrates the possibility of using self-study modules to reduce face-to-face therapist contact time in *Cognitive Therapy for PTSD*. By session 5, the client had completed six modules and all scores were in the non-clinical range. The total length of time the client had spent completing modules by the end of treatment (session 6) was 660 minutes or 11 hours and the total therapist contact time was 480 minutes or 8 hours, thus saving about 50% of the therapist's time compared to standard CT-PTSD (Ehlers et al., 2005). Encouragingly, the patient maintained his gains at one- and two-month follow-up.

When asked what he found most helpful, the client identified the modules to update his memory and the imagery exercise he had completed with his therapist in which he viewed the trauma from a third person perspective. Whilst he had found this upsetting at the time, he had been able to emotionally access his fears about losing his daughter and grandson, and address them directly with new information. Although he had started updating the worst moments of the memory with the help of the self-study modules, it was the imagery session that made the updating information fully 'sink in', i.e., he could now make the connection

between the moments when he believed his daughter and grandson were dead and the moments when he later saw them sitting on the bench alive and smiling. It was after this session that the client's scores fell into the non-clinical range.

Like standard CT-PTSD, the brief self-study assisted treatment was adapted to the individual case formulation. Because of Philip's depression, the therapist took an active role in identifying suitable activities and much emphasis was given in the sessions to the *reclaiming your life* assignments and increasing activity levels more generally. Satisfaction ratings were included although they are not a standard part of the *reclaiming your life* assignments to illustrate the link between activity and mood. As pain was a problem for Philip, the *Chronic Pain and PTSD* module was given before therapy started so that he could use the advice given in the module early on. The usual procedure would be to give only the first two core modules before the first session. As Philip made a speedy recovery and no longer had intrusive memories and nightmares after the successful memory updating procedure, the two core modules on identifying and discriminating triggers were not given. A site visit, that usually puts the final touches on the updating process, was also no longer considered necessary by the therapist given that Philip had made a complete recovery.

What stands out in terms of Philip's contribution to his recovery is that he completed all modules given to him and all other assigned homework, in particular, engaging in daily activities, which improved his mood. It is yet unknown how important compliance with homework assignments is to the recovery of patients with PTSD in brief CBT. Other patients, especially those with dissociative symptoms or very extensive avoidance, may find it harder to complete the assignments or do them less thoroughly.

In conclusion, this case study demonstrates the possibility of using self-study modules in the treatment of PTSD despite the memory and concentration problems observed in this patient group. Of course, the conclusions that can be drawn from a case study are very limited as it is unknown whether the treatment was causally responsible for Philip's recovery. Longer follow-ups are needed to assess the stability of treatment effects. Thus, further research is required to systematically evaluate the short- and long-term effects and acceptability of self-study assisted CT-PTSD. Furthermore, it is as yet unknown which patients would benefit most from self-study assisted CT-PTSD, and future research will need to investigate possible predictors of poorer treatment response. The treatment requires the patient to read and write, and some patients may find this challenging. It is also possible that patients with multiple trauma or multiple comorbid disorders may be slower to respond with this new treatment because the reduced number of sessions gives the therapist less opportunity to address different cognitive themes and additional problems than in regular CT-PTSD. On the other hand, Philip had comorbid conditions and responded well to treatment. Furthermore, there are additional modules that support the work on additional problems such as modules on earlier trauma or loss. A randomized controlled trial evaluating self-study assisted CT-PTSD is currently underway at King's College London.

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Appendix: Cognitive Therapy for PTSD – Summary of Treatment Procedures

Goal 1: Modify Excessively Negative Appraisals of the Trauma and its Sequelae

As in other cognitive therapy programs, excessively negative appraisals of *trauma sequelae* such as the initial PTSD symptoms (e.g., Ehlers, Mayou & Bryant, 1998) and other people's responses after the event (e.g., Dunmore, Clark & Ehlers, 2001), are modified by the provision of information, Socratic questioning, and behavioral experiments. As many patients with PTSD describe a sense of permanent change since the trauma (e.g., Ehlers, Maercker, & Boss, 2000), *reclaiming your life* assignments are discussed in each session and usually done as homework. Patients are encouraged to 'reclaim' their former lives by reinstating significant activities or social contacts they have given up since the trauma.

Changing negative appraisals of the *trauma* poses a special challenge as much of the patient's evidence for the problematic appraisals stems from what they remember about the trauma. Thus, work on appraisals of the trauma needs to be *closely integrated* with work on the trauma memory. Disjointed recall of the trauma in PTSD (a) makes it difficult to assess the problematic meanings by just talking about the trauma, and (b) has the effect that insights from cognitive restructuring may not be sufficient to produce a large shift in affect. Ehlers and Clark (2000) developed a special procedure to shift problematic meanings of the trauma, termed *Updating Trauma Memories*. This involves (1) *Identifying the idiosyncratic appraisals of the trauma*: To access the problematic idiosyncratic meanings of the trauma, the moments during the trauma that create the greatest distress and sense of 'nowness' during recall (hot-spots) are identified through imaginal reliving (Foa & Rothbaum, 1998) or narrative writing (Blanchard et al., 2003; Resick & Schnicke, 1993), and discussion of intrusive memories (see Ehlers, Hackmann, Steil, Clohessy, Wenninger & Winter, 2002). The personal meaning of these moments is explored in careful questioning.

(2) *Identification of updating information*: The next step is to identify information that provides evidence against the idiosyncratic appraisals linked to each hot-spot ("updating information"). This may be information from the course of the event that has not been linked to the meaning of the hot-spot or a new conclusion the patient has reached in cognitive restructuring. Examples of the former include information that the outcome was better than expected (e.g., patient did not die, is not paralyzed); information that explained the patient's or other people's behaviour (e.g., the patient complied with the perpetrator's instructions because he had knife); the realization that an impression or perception during the trauma was not true (e.g., the perpetrator had a toy gun rather than a real gun); or explanations from experts of what happened (e.g., explanations about medical procedures in the course of the trauma). Examples of the latter are conclusions from the cognitive restructuring of excessively negative appraisals such as "I am a bad person", "It was my fault", "My actions were disgraceful" or "I attract disaster," using cognitive therapy techniques such as Socratic questioning, systematic discussion of evidence for and against the appraisals, behavioural experiments, pie charts, or surveys.

(3) *Active incorporation of the updating information into the hot-spots*. Once updating information that the patient finds compelling has been identified, it is actively incorporated into the relevant hot-spot. Patients are asked to bring the hot-spot to their mind (either through reliving or reading the narrative) and to then remind themselves (prompted by the therapist) of the updating information either (a) verbally (e.g., "I know now that ..."), (b) by imagery (e.g., visualizing how one's wounds have healed; visualizing perpetrator in prison;

looking at recent photo of the family), (c) by performing movements or actions that are incompatible with the original meaning of this moment (e.g., moving about, jumping up and down for hot-spots that involve prediction that the patient will die or be paralyzed) or (d) incompatible sensations (e.g., touching a healed arm). To summarize the updating process, a written narrative is created that includes and highlights the new meanings (e.g., “I know now that it was not my fault”).

Goal 2: Reduce Reexperiencing by Elaboration of the Trauma Memories and Discrimination of Triggers

Four main techniques are used to elaborate the trauma memory and reduce reexperiencing: imaginal reliving of the event (Foa & Rothbaum, 1998), writing out a detailed narrative of the event (Blanchard et al., 2003; Resick & Schnicke, 1992), revisiting the site, and discrimination of triggers. Each procedure has advantages, and the relevant weight given to them depends on the patient’s level of engagement with the trauma memory and the length of the event. *Imaginal reliving*, in which the patient visualizes the event while simultaneously describing what is happening and what he or she is feeling and thinking, is particularly good at facilitating engagement with the memory and retrieval of all aspects of the memory (including emotions and sensory components). *Writing a narrative* is particularly useful when aspects of what happened or the order of events are unclear. Reconstructing the event with diagrams and models and a visit to the site can be of further assistance in such instances. For patients with very long traumas and those who tend to dissociate when talking about the trauma, writing may also be easier to manage than imaginal reliving. *Revisiting the site* of the traumatic event is particularly helpful in facilitating the realization that the event is in the past. When visiting the site, therapist and patient therefore discuss the way the scene is different from the day of the trauma (‘Then’ versus ‘Now’). Revisiting the site is also used to complement discussion and obtain new information that helps explain why or how an event occurred.

Building on the observation that trauma memories are disjointed and often lack crucial context information, Ehlers and colleagues (Ehlers & Clark, 2000; Ehlers, Hackmann & Michael, 2004) outlined that memory elaboration needs to link the hot-spots of the trauma with new information that updates their meanings. To establish this new link, CT-PTSD uses the *Updating Trauma Memories* procedure described above.

Discrimination of triggers of reexperiencing symptoms usually involves two stages. First, patient and therapist carefully analyze where and when intrusions occur to identify triggers. This involves some detective work as patients are usually not aware of many of the sensory triggers (e.g., particular colours, sounds, smells, tastes, touch). Systematic observation (by the patient and the therapist) is usually necessary before all triggers are identified. Once triggers have been identified, the next aim is to break the link between the triggers and the trauma memory. This involves several steps in therapy. First, the patient learns to distinguish between ‘Then’ versus ‘Now’, i.e., the patient learns to focus on how the present triggers and their context (‘Now’) are different from the trauma (‘Then’). Second, intrusions are intentionally triggered in therapy so that the patient can learn to apply the ‘Then’ versus ‘Now’ discrimination. This is done by bringing triggers into the therapy session. For example, traffic accident survivors may listen to sounds that remind them of the trauma such as sounds of brakes screeching, collisions, glass breaking or sirens. People who were attacked with a knife may look at a range of metal objects. Survivors of bombings or fires may look at smoke produced by a smoke machine. People who saw a lot of blood during the trauma may look at red fluids. The ‘Then’ versus ‘Now’ discrimination can be facilitated by carrying out actions that were not possible during the trauma (e.g., movements that were not possible in the trauma, touching objects or looking at photos that remind them of their

present life). Third, patients apply these strategies in their natural environment. When reexperiencing occurs, they remind themselves that they are responding to a memory, not current reality. They focus their attention on how the present situation is different from the trauma, and may carry out actions that were not possible during the trauma.

If reexperiencing symptoms persist after successful updating of the hot-spots and discrimination of triggers, imagery transformation techniques can be useful. The patient transforms the image into a new image that signifies that the trauma is over. The transformed images can provide convincing evidence that the intrusions are a product of the patient's mind rather than representing current reality. Image transformation is also particularly helpful with intrusions that represent images of things that did not really happen during the trauma (usually anticipated bad consequences of the trauma).

Goal 3: Drop Dysfunctional Behaviours and Cognitive Strategies

The first step in addressing behaviours and cognitive strategies that maintain PTSD is usually to discuss the problematic consequences of the strategy. Sometimes these can be demonstrated directly by a behavioural experiment. For example, asking the patient to try hard not to think about a certain image (e.g., black-and-white cat sitting on therapist's shoulder) demonstrates that thought suppression is likely to increase intrusions. In other instances, a discussion of advantages and disadvantages is helpful, for example when addressing rumination. The next step involves dropping or reversing the problematic strategy, usually in a behavioural experiment.

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Table 1

Updating Your Memories module: Philip's hot-spots and how he updated them

Situation	Thoughts THEN	What does that mean to me THEN?	What I know NOW	How can I remind myself of what I know NOW?
<i>Car spinning over and over</i>	<i>Sarah and Jake will be trapped. They might die.</i>	<i>I will lose my daughter and my grandson. I will live the rest of my days without them.</i>	<i>Sarah covered Jake with her body and they wedged themselves together. They survived. There is nothing wrong with Jake. Sarah broke her shoulder and otherwise is doing well.</i>	<i>I can picture them at our father's day party. They look so happy, laughing and smiling without a care in the world.</i>
<i>The car lands on four wheels as if dropped from a huge height.</i>	<i>I have broken my back. There is no noise from Sarah and Jake. They are dead.</i>	<i>I will never walk again. I will never see my daughter and grandson again. I will live the rest of my days without their smiling faces.</i>	<i>The hospital checked out my back and it was okay although gives me a bit of pain. Sarah and Jake got out of the car and walked over to the back of the motorway. They were crying but were okay. I was okay too.</i>	<i>I can picture Jake playing with his toys and kicking his ball. He is always laughing. I can picture Sarah at our meal out. She looked so happy.</i>