

CASE STUDY

Cognitive therapy for post-traumatic stress disorder in the context of Post-Intensive Care Syndrome - Family: a case study

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(Received 16 December 2024; revised 1 April 2025; accepted 25 April 2025)

Abstract

The current case study was completed as part of the routine psychological therapy delivered in a Critical Care Psychology Service in the United Kingdom. For families of critically ill patients, an admission to the intensive care unit (ICU) can be a distressing and potentially traumatic experience. Relatives of ICU patients may, therefore, face ongoing psychological difficulties after their loved one's discharge from hospital, an experience recognised as Post-Intensive Care Syndrome - Family (PICS-F). Psychological morbidity associated with PICS-F includes post-traumatic stress disorder (PTSD). Despite high rates of PTSD within this population, there are currently no published guidelines available for the treatment of PTSD in relatives following an ICU admission. Clinicians working in this field are consequently required to adapt existing psychological models and protocols recommended for treating PTSD, for application to ICU-related traumatic stressors. This case study describes how cognitive therapy for PTSD (CT-PTSD) was tailored to treat a 60-year-old female experiencing PTSD following her husband's admission to the ICU. It also illustrates how critical illness can be conceptualised as an intangible loss that triggers a grief experience for relatives of ICU patients, causing PTSD symptoms to persist. The client attended 14 weekly sessions of CT-PTSD. Treatment included cognitive strategies for panic, imaginal re-living and a site visit, as well as consideration of the role of non-death loss and disenfranchised grief in the client's experiences. At the end of treatment, the client no longer presented with clinically significant symptoms of PTSD, as assessed on the Impact of Events Scale-Revised (IES-R).

Key learning aims

It is hoped that this case study will enhance the reader's understanding of the following areas:

- (1) The delivery of CT-PTSD when working with relatives of former patients admitted to the ICU.
- (2) The experiences of intangible loss and disenfranchised grief for relatives of former ICU patients and how these can contribute to the maintenance of PTSD symptoms.
- (3) The utility of the dual process model (DPM; Stroebe and Schut, 1999) as a framework when adapting the CT-PTSD model to the context of supporting relatives of former ICU patients.

Keywords: CT-PTSD; disenfranchised grief; ICU; non-death loss; PTSD

Introduction

Post-Intensive Care Syndrome - Family

An intensive care unit (ICU) provides specialist treatment for those who are critically ill and in need of life-supporting interventions and intensive monitoring (Yuan *et al.*, 2021). For families of

critically ill patients, an ICU admission can be a frightening and potentially traumatic experience. The sudden nature of an ICU admission can cause crisis within families, who face exposure to distressing medical events and the possibility of their loved one's long-term hospitalisation or death (Asadi and Salmani, 2024). Moreover, it is common for relatives to adopt a caregiving role following an ICU admission, which can create unique challenges for families (Fumis *et al.*, 2015). Life-altering medical events or illness can often leave families bereft of their former quality of life, important relationships, significant life milestones and hope for the future, due to the dramatic changes to their affected loved one (Yehene *et al.*, 2021). Loss following critical illness, although not exclusively death-related, can thus bring intense feelings of grief that manifest in diverse forms of distress (Sweetman and O'Donnell, 2020). Those confronted with such adversities may consequently experience ongoing physical, psychological and socioeconomic difficulties following their loved one's ICU admission or death, a cluster of experiences referred to as Post Intensive Care Syndrome - Family (PICS-F; Shirasaki *et al.*, 2024).

PICS-F has primarily been reported as psychological morbidities, including anxiety, low mood, post-traumatic stress disorder (PTSD), and complicated grief (Kang and Lee, 2024). Families may also face challenges such as increased sick leave, financial difficulties and more frequent use of medical services whilst performing caregiving roles (Stayt and Venes, 2019), contributing to psychological distress. Risk factors for PICS-F include poor communication with ICU staff about their relative's treatment, female gender, lower educational level, historical mental health difficulties and their relationship with their critically ill relative, with spouses of ICU patients being particularly at risk for developing ongoing psychological difficulties (Smith and Rahman, 2024). The prevalence of PICS-F varies across the literature due to differences in each study's patient population, measurement tools and assessment time frames following an ICU admission (ranging from 1 week to 1 year post-admission; Inoue *et al.*, 2019). However, it is reported that up to 60% of family members may experience symptoms relating to PTSD, anxiety, depression or complicated grief within 6 months of their relative's ICU hospitalisation (Inoue *et al.*, 2019). Such findings indicate the importance of family-centred care in critical care services, whereby close attention is paid to the emotional needs of families to reduce distress (Fumis *et al.*, 2015).

Critical care psychology service provision

The high rates of psychological morbidity following an ICU admission have led the role of practitioner psychologists within intensive care to receive increasing attention over the past decade (Twose *et al.*, 2023). Guidelines for the Provision of Intensive Care Services Version 2.1 (FICM, 2022) recommends embedding psychologists within critical care services to address the psychological needs of patients, families and staff. It is suggested that psychological support for families can mitigate the impact of the crisis of critical illness and prepare them for their loved one's ICU recovery (Inoue *et al.*, 2019). Service specifications for Integrated Practitioner Psychologists in Critical Care (Highfield *et al.*, 2022) therefore advocate that families of ICU patients should have access to evidence-based psychological support during and following their relative's discharge or death (e.g. via peer support groups or follow-up services facilitated by ICU staff).

Post-traumatic stress disorder and psychological treatment

Research suggests that the prevalence of PTSD in family members of ICU patients ranges from 30% to 55% (Smith *et al.*, 2025). PTSD is a mental health condition that may occur in people who have directly experienced or witnessed a traumatic event(s), which they perceive to be significantly harmful or life-threatening (American Psychiatric Association, 2024). In line with the *Diagnostic and Statistical Manual of Mental Health Disorders* (fifth edition: *DSM-5*; American Psychiatric Association, 2013), an individual meets the diagnostic criteria for PTSD when symptoms persist

four weeks beyond exposure to a traumatic stressor. The characteristics of PTSD are grouped across four domains: intrusions (e.g. involuntary memories, flashbacks, nightmares), avoidance (e.g. of thinking about or external reminders of the event), negative changes in mood or cognition (e.g. distorted thoughts, reduced interest in activity, feeling detached from others) and alterations in arousal and reactivity (e.g. hypervigilance, reckless behaviour, increased startle response; Righy *et al.*, 2019). Unlike other anxiety disorders that are also characterised by hypervigilance to potential threats, PTSD specifically features hypersensitivity to a broad range of sensory stimuli that extend beyond trauma-related triggers (Clancy *et al.*, 2017). Intrusive symptoms therefore incorporate an explicit memory component with a strong sensorial element (e.g. ‘seeing’ or ‘hearing’ aspects of the trauma occur again) that elicits intense psychological responses (Fleming *et al.*, 2024).

The National Institute for Health and Care Excellence (NICE, 2024) guidelines recommend trauma-focused cognitive behavioural therapy (CBT) or eye movement desensitisation and reprocessing (EMDR) as gold-standard psychological treatments for PTSD. Recent clinical guidelines (outlined by Murray *et al.*, 2020) have been developed to inform clinicians about how to adapt trauma-focused CBT models when working with former ICU patients. Yet, there are currently no published guidelines available for the treatment of PTSD in relatives following an ICU admission in the context of PICS-F. Limited research in this area may hinder a comprehensive understanding of the psychological sequelae encompassed by PICS-F, leading to challenges in identifying high-risk relatives and missed opportunities to develop interventions that support the unique challenges faced by this population (Shirasaki *et al.*, 2024). Psychologists in critical care, therefore, rely on careful adaptation of existing psychological models recommended for treating PTSD for application to ICU-related traumatic stressors. The Cognitive Therapy for PTSD (CT-PTSD; Ehlers and Clarke, 2000) model highlights the relationship between cognitive, emotional and behavioural processes that occur in response to trauma. The model suggests that under extreme stress, individuals may have a reduced capacity for conceptual processing (i.e. processing the meaning of a situation in an organised way) and thus primarily engage in sensory-driven processing (i.e. selective attention to sensory signals from the environment), leading trauma memories to be encoded as distorted fragments of sensory information (Harricharan *et al.*, 2021). The nature of such memories, alongside distorted appraisals about the event, causes a ‘re-experiencing’ of the distressing memory as if it were happening again in the present, contributing to a current sense of threat. In response to this, individuals may engage in safety behaviours (e.g. avoidance) or cognitive strategies (e.g. thought suppression) that prevent them from altering their distorted appraisals and updating their trauma memories with new information, thus maintaining distress (Skilbeck and Byrne, 2022). In other words, unhelpful coping strategies can prevent traumatic memories from being updated with what the individual knows now to be true (e.g. that they are safe from harm), causing PTSD symptoms to persist (Murray *et al.*, 2020). CT-PTSD, therefore, incorporates cognitive, emotional and behavioural components by focusing on modifying an individual’s negative appraisals of a traumatic event, processing the emotional impact of the trauma through memory work, and addressing behavioural strategies that maintain their PTSD symptoms, to reduce their current sense of threat (Wild *et al.*, 2020).

Non-death loss and the dual process model (Stroebe and Schut, 1999)

Critical illness is layered with many tangible (e.g. physical, social, financial) and intangible losses (e.g. safety, identity, future hopes and dreams), which can profoundly impact patients admitted to ICU and their families. Given this, psychological distress triggered by the extreme life changes faced by relatives following their loved one’s ICU admission can be conceptualised as a grief response to non-death loss (Germany, 2021). Theories of bereavement may, therefore, serve as a foundation for treating the grief experiences of those encountering non-death loss in medical and ICU-related trauma.

The dual process model of coping with bereavement (DPM; Stroebe and Schut, 1999) proposes that the grieving process encompasses two different types of stressors: loss-oriented (i.e. immersion in the loss experience) and restoration-oriented (i.e. focus on aspects of daily living and adjusting to the loss). A central component of the DPM is a dynamic process of ‘oscillation’, which suggests that people cope with grief by alternating between confronting and avoiding these stressors (i.e. people oscillate between acknowledging their grief and re-integrating with their lives alongside their loss). Within psychological treatment for PTSD in the context of PICS-F, the DPM (Stroebe and Schut, 1999) may provide a helpful framework (to be used alongside CT-PTSD) for understanding relatives’ experiences of loss and grief following an ICU admission and how such dynamics can maintain their current sense of threat and psychological distress.

Presenting problem

This study aimed to apply Ehlers and Clarke’s (2000) CT-PTSD model in the current case of PTSD experienced by the spouse of a former ICU patient in the context of PICS-F. The study additionally discusses how the DPM (Stroebe and Schut, 1999) was used to enhance the client’s understanding of her presenting difficulties and facilitate discussions about positive coping. Murray *et al.*’s (2020) protocol for ICU-PTSD was also considered when adapting the therapy to the patient’s needs. This case study was completed as part of the routine therapy provided by a highly specialist clinical psychologist in a Critical Care Psychology Service (CCPS) in the United Kingdom (UK). The work was supervised by a principal clinical psychologist with extensive experience working across UK critical care settings. The CCPS offers inpatient support and outpatient therapy for patients and families with psychological difficulties related to critical illness and an ICU admission. This provision is commissioned by the National Health Service (NHS).

Prior to the study, informed consent was sought from the client discussed (hereinafter referred to using the pseudonym ‘Kate’) in line with service governance and ethics committee guidelines. Kate was given comprehensive information on the purpose of the study and the extent of confidentiality and provided informed written consent for publication. All names included in this case study have been pseudonymised to protect the client’s anonymity.

Case description

Kate was a 60-year-old White British female from the Southeast of England, whose husband, Jim, had formerly been admitted to the ICU. In August 2023, Kate woke in the night to the sound of Jim’s agonal breathing, due to him having a cardiac arrest. She called for an ambulance immediately and performed cardiopulmonary resuscitation (CPR) until the paramedics arrived. The paramedics used an automated external defibrillator (AED) to restart Jim’s heart into a regular rhythm, and he was taken to their local hospital and admitted to the ICU. During his ICU admission, Jim required intubation and (after two unsuccessful extubation attempts) mechanical ventilation via a tracheostomy for 8 days to support his breathing. Following his decannulation (i.e. tracheostomy removed), Jim was disoriented, confused and assessed to be experiencing ICU delirium. His delirium resolved after several days and following 16 days in the ICU, Jim was stepped down from critical care to a cardiology ward. In hospital, Jim was fitted with an implantable cardioverter defibrillator (ICD) and experienced no further cardiac events. He did, however, start to suffer with episodes of gastroesophageal acid reflux, which were thoroughly investigated by the medical team and considered consequential of his endotracheal intubation. Although Jim continued to experience these episodes of acid reflux, he was prescribed medication for long-term management of his symptoms. Jim was discharged home after a 47-day hospital admission and has recovered well, with no significant physical, cognitive or psychological sequelae.

Kate was referred to the CCPS in October 2023 after attending an ICU patient and family peer support group. This bi-monthly group was facilitated by two ICU nurses on a weekday evening, taking place in a clinic room removed from the ICU environment. The group had an open-ended and informal structure which aimed to provide former ICU patients and their relatives a confidential space to reflect on their shared experiences of critical care. The role of the group facilitators was to support peer discussions about recovery from critical illness using their clinical knowledge, whilst managing group dynamics to ensure every group member feels included and supported. The facilitators also remained observant of ongoing psychological distress experienced by group members and supported referrals to the CCPS, in turn reducing the potential burden on primary care services. Following Kate's attendance to this group, the facilitators raised concerns with the clinical psychologist about her coping ensuing Jim's discharge from hospital. Kate was consequently invited to attend a comprehensive psychological assessment under the CCPS.

Psychological assessment of PTSD

A 60-minute CBT assessment was conducted with Kate, to explore her narrative of Jim's ICU admission and the related impact on her psychological well-being. The assessment included screening for PTSD and co-morbid mental health disorders, exploration of Kate's mental health history, her appropriateness for CBT, and any risk and safeguarding issues. Kate's description of her main psychological difficulties was consistent with PTSD (in line with the *DSM-5* diagnostic criteria; American Psychiatric Association, 2013). Please see Table 1 for a comprehensive summary of Kate's PTSD symptoms, as described in her assessment. She denied experiencing any earlier trauma or pre-existing mental health difficulties that may affect cognitive processing. She also denied any risk to self (e.g. suicidality or self-harm), to others, or from others. Kate reported that her psychological distress significantly impacted her daily functioning, causing her to no longer see friends or engage in activities she enjoyed (e.g. walks on the South Downs with Jim). She identified several goals for therapy including (1) to reduce her flashbacks of the ICU admission, (2) to reduce her panic and related checking behaviours, (3) to feel able to leave Jim alone, and (4) to re-engage with her previously enjoyed hobbies.

Prior to treatment, Kate's symptoms were further assessed using a battery of psychometric measures routinely used in the CCPS (see Table 2 for a copy of Kate's completed pre- and post-intervention psychometric measures). Criteria for PTSD were assessed using the Impact of Events Scale-Revised (IES-R; Weiss and Marmar, 1997), a widely used and validated measure to screen for PTSD in ICU survivors and their families (Amass *et al.*, 2022). The measure consists of 22 items and three subscales (intrusion, avoidance, hyperarousal), allowing for a maximum score of 88. Although not a diagnostic measure, a score of 33 or higher is associated with significant symptoms of PTSD and should be used alongside a clinical assessment to inform diagnosis (Amass *et al.*, 2022). Kate scored 46 on the IES-R, indicating that without treatment her symptoms were severe enough to suppress her immune system functioning and have longstanding effects on her health (Christianson and Marren, 2012). Kate's IES-R score, alongside her psychological assessment, thus indicated that she met the criteria for a diagnosis of PTSD. Symptoms of anxiety were assessed using the Generalised Anxiety Disorder Assessment-7 (GAD-7; Spitzer *et al.*, 2006) and symptoms of depression were assessed using the Patient Health Questionnaire-9 (PHQ-9; Kroenke *et al.*, 2001). Both measures have cut-off scores of 5, 10 and 15, to indicate 'mild', 'moderate' and 'severe' levels of anxiety and depression. Kate scored 13 on both the GAD-7 and PHQ-9, indicating that she met the criteria for 'moderate-severe' generalised anxiety and depression. As the PTSD symptoms were identified by Kate as the most impactful, her symptoms of anxiety and low mood were considered secondary. Kate therefore commenced 14 sessions of CT-PTSD under the CCPS. This treatment plan was developed in collaboration with Kate, in line with NICE (2024) guidelines for the treatment of PTSD, the clinical competencies of the clinical

Table 1. Summary of Kate's difficulties in line with the *DSM-5* criteria for PTSD

<i>DSM-5</i> PTSD criteria	Description of Kate's difficulties
Criterion A: traumatic stressor (one required) The individual must be exposed to one of the following: - Directly experiencing the traumatic event - Witnessing the traumatic event - Learning that a relative or close friend was exposed to a traumatic event - Experiencing repeated or extreme exposure to aversive details of a traumatic event	Kate witnessed Jim's cardiac arrest and administered CPR until the paramedics arrived. She also witnessed the paramedics working on Jim to restart his heart using an AED. Kate was repeatedly exposed to traumatic stressors during Jim's ICU stay, whereby she experienced the possibility that he may not survive his admission or may be significantly debilitated by his critical illness.
Criterion B: intrusion symptoms (one required) The traumatic event is persistently re-experienced in the following way(s): - Recurrent, involuntary and intrusive distressing memories of the traumatic event - Recurrent distressing dreams related to the traumatic event - Dissociative reactions (e.g. flashbacks) in which the individual feels or acts as if the traumatic events are reoccurring - Intense or prolonged psychological distress at exposure to external or internal cues that resemble an aspect of the traumatic event - Marked physiological reactions to internal or external cues that represent an aspect of the traumatic event	Kate experienced daily intrusive memories of Jim's cardiac arrest, which triggered significant psychological distress. She also experienced flashbacks to giving Jim CPR and him being worked on by the paramedics. These flashbacks were accompanied by a physical and emotional re-experiencing of the events, which caused her to feel as though the trauma was re-occurring again in the present. Triggers for Kate's intrusive memories and flashbacks included driving past the hospital, seeing ambulances, seeing medical related stimuli on TV and witnessing Jim's episodes of acid reflux (whereby he experienced symptoms that reminded Kate of his cardiac arrest).
Criterion C: avoidance (one required) Persistent avoidance of stimuli associated with the traumatic event in the following way(s): - Avoidance of distressing memories, thoughts or feelings about or closely associated with the traumatic event - Avoidance of external reminders that arouse distressing memories associated with the traumatic event	Kate attempted to avoid thinking or talking to others about Jim's cardiac arrest or ICU admission wherever possible. Kate also avoided external reminders of the traumatic events, including hospitals, ambulances, medical TV programmes and going into certain rooms of her house. In situations where Kate was unable to avoid external triggers (such as the scene of Jim's cardiac arrest), she altered the environment of the trauma by hanging washing over the landing of her stairs.
Criterion D: negative alterations in cognition and mood (two required) Negative thoughts or feelings that began or worsened after the traumatic event, in the following way(s): - Inability to recall key features of the traumatic event - Persistent and exaggerated negative beliefs and expectations about oneself, others or the world - Distorted cognitions about the cause or consequences of the traumatic event that lead the individual to blame themselves or others - Persistent negative emotional state - Diminished interest or participation in significant activities - Feelings of detachment or estrangement from others - Persistent inability to experience positive emotions	Kate described experiencing significant anxiety about Jim's health. Her intrusive memories of Jim's cardiac arrest would often trigger Kate to experience panic attacks. In the context of Kate's anxiety, she reported persistent catastrophic beliefs that Jim would have another cardiac arrest and not survive. Kate also described disproportionate self-blame about the impact her anxiety and distress was having on Jim and her children. She expressed beliefs such as 'I should be over this by now'. In response to her anxiety, Kate stopped engaging in activities she enjoyed and avoided leaving Jim alone.
Criterion E: alterations in arousal and reactivity (two required) Marked alterations in arousal and reactivity associated with the traumatic event, in the following ways: - Irritable behaviour and angry outbursts - Reckless or self-destructive behaviour - Hypervigilance - Exaggerated startle response - Problems with concentration - Sleep disturbance	Kate described feeling usually irritable and tearful on a daily basis. She reported having an increased startle response and feeling very hypervigilant towards aspects of Jim's physical health (e.g. his episodes of acid reflux. She engaged in various safety behaviours in response to this anxiety (e.g. checking his breathing and blood pressure during the night). These above safety behaviours were subsequently impacting Kate's sleep.

(Continued)

Table 1. (Continued)

DSM-5 PTSD criteria	Description of Kate's difficulties
Criterion F: duration of disturbance Criterion B, C, D and E symptoms need to be present for more than 1 month	Kate had experienced the above symptoms for longer than 1 month at the time of our psychological assessment.
Criterion G: clinically significant impairment The disturbance causes clinically significant distress or impairment in social, occupational or other important areas of functioning	Kate reported that her symptoms were impacting her ability to see friends and go to work, due to her anxiety about leaving Jim alone.
Criterion H: not attributable to substances The disturbance is not attributable to physiological effects of a substance (e.g. medication or alcohol) or another medical condition	Kate reported no excessive alcohol use, substance abuse or other medical conditions that may influence her symptoms.

Table 2. Kate's pre- and post-intervention psychometric scores

Pre-intervention		Post-intervention	
Total IES-R score	46	Total IES-R score	6
Intrusion subscale	24	Intrusion subscale	4
Avoidance subscale	13	Avoidance subscale	1
Hyperarousal subscale	9	Hyperarousal subscale	1
Total GAD-7 score	13		1
Total PHQ-9 score	13		1

psychologist and the psychological formulation of her difficulties (see Fig. 1 for details). Throughout the therapy, verbal feedback was gathered from Kate about the sessions, leading the intervention to be adapted to her individual needs and preferences.

Psychological formulation

Session 1: CT-PTSD formulation (Ehlers and Clarke, 2000)

Kate's difficulties were formulated using Ehlers and Clarke's (2000) CT-PTSD model (see Fig. 1) and adapted for ICU-related traumatic stressors and appraisals, as outlined in Murray *et al.* (2020). Kate's formulation identified the relationship between her trauma memories and negative appraisals of these events, revealing cognitive and behavioural strategies that contributed to and maintained her psychological distress. This formulation served as a framework for her ongoing therapy.

Trauma memories

Kate reported daily flashbacks associated with Jim's cardiac arrest (e.g. seeing his lifeless body on the floor) and his ICU admission (e.g. seeing him intubated and connected to a ventilator). The flashbacks were accompanied by sensory and emotional re-experiencing (e.g. 'hearing' the AED, 'feeling' the weight of Jim's chest on her hands, a dry mouth and intense panic), leaving Kate feeling as though the events were re-occurring in the present. She also experienced several intrusive memories of the ICU admission, including being told Jim was the 'sickest man in the hospital', witnessing his unsuccessful extubation attempts and seeing him delirious upon waking from his sedation. Triggers for her flashbacks and involuntary memories included seeing ambulances, driving past the hospital, seeing medical-related stimuli on TV and witnessing Jim's episodes of acid reflux.

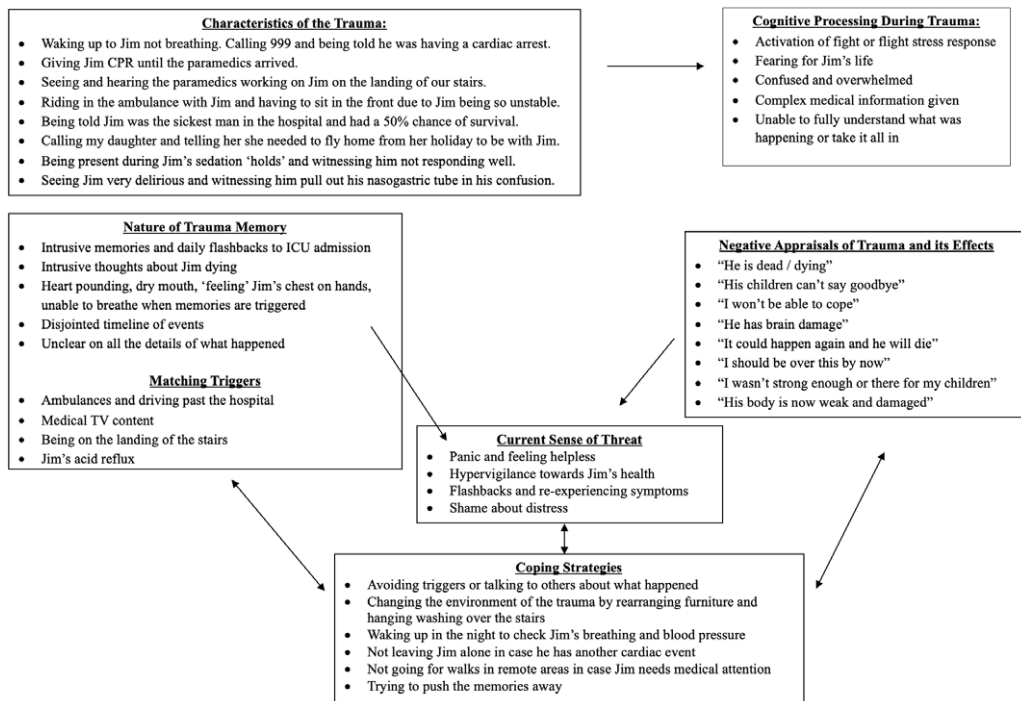


Figure 1. Ehlers and Clarke (2000) CT-PTSD formulation of Kate's difficulties.

Negative appraisals of the trauma

Problematic cognitive appraisals represent idiosyncratic personal negative meanings that relate to the individual's memory of a traumatic event (Ehlers and Clarke, 2008). Kate identified negative appraisals she experienced during the trauma and following its aftermath. These appraisals included 'he is dying/dead', 'he has brain damage', 'this could happen again and he will die' and 'I should be over what happened by now'.

Maintaining cognitive strategies and coping behaviours

Kate experienced hyperarousal symptoms, including hypervigilance about Jim's health, concentration difficulties and disrupted sleep. She also described herself as more tearful and anxious than usual and felt excessively guilty about the impact of her distress on Jim. From a cognitive perspective, anxiety and hypervigilance in PTSD are triggered by negative appraisals that create an ongoing sense of threat, causing the intrusive PTSD symptoms to persist (Ehlers and Clarke, 2008). In response to her current sense of threat, Kate engaged in several unhelpful cognitive and behavioural coping strategies. These included avoidance of thinking or talking about Jim's ICU admission, as well as avoiding external reminders of the trauma. For example, Kate would avoid hospitals, ambulances and medical TV programmes wherever possible. When she was unable to avoid external triggers (e.g. the scene of the cardiac arrest), Kate altered the environment by rearranging furniture and hanging washing over the landing of her stairs. Kate would also avoid leaving Jim alone or spending time with him in remote areas (e.g. walks on the South Downs), in fear he would have another cardiac event and be unable to access help. Additionally, Kate would repeatedly check Jim's breathing and blood pressure (BP) during the night using a home BP monitor and continually seek reassurance about his physical symptoms.

Course of treatment

Sessions 2–4: psychoeducation, cognitive strategies for panic and reclaiming activities

Kate's initial sessions involved creating a timeline of Jim's ICU admission and her traumatic memories, planning her treatment goals and normalising her intrusive symptoms and unhelpful coping strategies. Psychoeducation about PICS-F and the neurobiological and psychological impact of traumatic events was used to provide a rationale for CT-PTSD and build the foundations of a positive therapeutic alliance (Murray *et al.*, 2022). This consisted of discussions about the prevalence of psychological difficulties in relatives of ICU patients, how trauma can affect the brain's stress response system and cause PTSD to develop, conceptualising Kate's experiences as 'non-death' loss (in reference to the uncertainty and transition she was experiencing) and discussing treatment options for these difficulties (Murray *et al.*, 2020). The aims of CT-PTSD were further discussed with Kate and included (1) to update her trauma memories to reduce re-living symptoms, (2) to modify her negative appraisals about the trauma and (3) to change her maladaptive coping strategies whilst helping her to re-engage with meaningful activities (Wild *et al.*, 2020). Kate reported that these early conversations helped to validate her experiences of distress and consider how psychological therapy could benefit her.

Primarily, Kate focused on cognitive and behavioural strategies that she could implement to reduce her panic when confronted with trauma-related stressors. Kate identified triggers for her panic and her associated 'catastrophic' cognitive misappraisals and was encouraged to intentionally focus on what was different between 'then' (the trauma) and 'now' (the reminder of the trauma). The 'then and now' discrimination technique was used particularly regarding Jim's acid reflux, which Kate identified to be a primary trigger for her ongoing distress. For example, Kate distinguished that 'then' (i.e. the time of the cardiac arrest), Jim was unconscious, unresponsive and gasping due to a lack of oxygen, whereas 'now' (i.e. during his acid reflux) Jim is conscious, able to communicate what is happening to him, can breathe appropriately and has an ICD fitted to regulate his heart's rhythm. To further encourage Kate's accurate appraisal of this risk, with Jim's consent, advice was sought from his medical team to calculate a realistic probability of his acid reflux impacting his heart function. This was discussed with Kate, alongside grounding techniques she could implement to remain in the present moment instead of becoming overwhelmed with her trauma memories and panic. Grounding techniques work by encouraging focus on the present environment using the five senses, allowing an individual to detach from their trauma memory, connect to the here-and-now and thoughtfully consider the traumatic stimuli when they are less distressed (Shields *et al.*, 2020).

Reclaiming previously valued activities following trauma is a central aspect of CT-PTSD, which starts in the first session of therapy and is reviewed each session (Murray *et al.*, 2020). A graded approach was used to encourage Kate to re-engage with her hobbies. The initial reclaiming activities involved Kate going for short walks with Jim in populated areas and gradually completing this task for longer periods in more remote spaces. Kate was also encouraged to leave the house for short periods for small errands and progressively increase the time she spent away from Jim. Towards the end of therapy, Kate completed the homework task of going to the theatre for the day with her daughter whilst leaving Jim home alone. This was discussed in the first session as a realistic and achievable goal that Kate could work towards, and the clinical psychologist supported Kate to problem-solve any anxieties she had about completing this task beforehand.

Sessions 5–11: imaginal re-living and updating trauma memories

A core component of CT-PTSD involves updating trauma memories to identify and modify cognitive appraisals that maintain the individual's sense of current threat to their self-view or safety (Wild *et al.*, 2020). A technique called 'imaginal reliving' (Foa and Rothbaum, 1998) was used to access Kate's trauma memories and their associated meanings. Before commencing

imaginal reliving, safety anchor points of when Kate felt safe just before and after the trauma were identified (Skilbeck and Byrne, 2022). Kate then sequentially described, in first person and present tense, her memories of Jim's cardiac arrest and ICU admission in a sensory detailed and emotionally engaged way. Following this, seven main 'hotspots' (i.e. aspects of the trauma associated with the most distress and sense of 'nowness') were identified. These included (1) being told by the emergency call dispatcher that Jim was having a cardiac arrest and needed CPR, (2) the paramedics working on Jim on the landing of their stairs, (3) Jim getting carried to the ambulance on a stretcher, (4) walking into the ICU and seeing Jim attached to a ventilator, (5) being told by a doctor that Jim was the 'sickest man in the hospital', (6) witnessing his unsuccessful extubation attempts and (7) an upsetting conversation with Jim in hospital whilst he was delirious. Kate reported cognitions such as 'he is dead/dying', 'he will never be able to breathe independently again', 'he has brain damage' and 'I am weak and could not support my children when they needed me most'.

Kate's hotspots were modified through memory updating using Socratic questioning and cognitive restructuring. Further psychoeducation about ICU delirium, the acute stress response following a traumatic event and the function of the medical equipment and procedures used to treat Jim in the ICU was also used to support the restructuring of the hotspots. With guidance from the clinical psychologist, Kate inserted the restructured hotspots into her imaginal reliving narrative as 'what do I know now' memory updates. Kate made the following updates: 'I now know that my CPR was successful and Jim did not die', 'the AED helped to restart Jim's heart', 'the ventilator supported Jim's breathing and helped him to get better', 'Jim needed a temporary tracheostomy but he can now breathe without support', 'Jim had ICU delirium and he did not suffer any brain damage' and 'I was having a "fight or flight" response and coped well enough in the circumstances'. Subjective ratings of memory 'nowness' (the extent to which the event feels as if it is happening again) and distress were collected from Kate before and after the updating to ensure the imaginal re-living was effective. The re-living task was repeated each session until Kate's intrusive symptoms and subjective ratings of distress significantly reduced.

Session 12: site visit

Once Kate's intrusive symptoms had significantly reduced, she re-visited the ICU, accompanied by Jim, to further consolidate her memory updates and trigger discriminations. Kate spent time in the bed space allocated to Jim during his admission and talked to many staff members who cared for him. This allowed Kate to express gratitude for Jim's treatment and for staff to comment on how well Jim was recovering. An ICU nurse talked with Kate about the different machines and medical equipment in the bed space, further informing her of how they helped Jim. Kate also met briefly with the medical doctor who initially told her that Jim was the 'sickest man in the hospital', providing her with an opportunity to ask outstanding questions about Jim's medical care and further reflect on his recovery. During the visit, Kate was encouraged to focus on sensory aspects of the ICU environment and use the 'Then vs Now' discrimination technique, which included (1) she attended the ICU voluntarily and at a different time to the trauma, (2) the unit appeared less busy than at the time of her trauma, with empty bed spaces and fewer medical professionals around, (3) the machines in Jim's bed space were not in use or beeping, making the unit feel quieter, (4) housekeeping staff were present on the unit – allowing Kate to identify the clinical smell and many noises on the unit and (5) Jim walked in and out of the unit with Kate, holding her hand throughout the session to remind her that he was physically well in the present moment. These differences helped Kate to experience that the trauma was in the past.

Session 13: non-death loss and the dual process model

The experience of grief can encompass a broad spectrum of life experiences and situations that are not exclusively death-related (Manevich *et al.*, 2023). In Kate's therapy, the DPM (Stroebe and

Schut, 1999) was used as a framework for understanding her experiences of grief following Jim's cardiac arrest. Kate was encouraged to reflect on her exposure to non-death loss and how these losses impacted her life. She identified several losses that she had endured following Jim's cardiac arrest, which included: diminished trust in his body, the new presence of hospital appointments and lifelong medications, changes to their retirement hopes and adapting to Jim's new identity in their family (from being a physically well husband/father/grandfather to now a survivor of critical illness). Kate also shared that she would avoid seeing family and friends, due to feeling distressed when they commended her for her successful CPR. Kate reported that these conversations triggered her to feel extremely guilty about her ongoing anxiety about Jim's health, given that he survived his cardiac arrest. Kate linked this emotional response to negative appraisals about the trauma that she identified within her CT-PTSD formulation, such as 'I should be over this by now'. During therapy, the clinical psychologist discussed the concept of 'disenfranchised grief' for non-death losses, which refers to the experience of grieving losses that are unacknowledged or unsupported by social systems (Petry *et al.*, 2021). In session 13, Kate reflected on the impact of experiencing loss that is unseen by others and how this influenced her to feel confused and further struggle to make sense of her trauma. Discussions about the DPM and disenfranchised grief helped to scaffold Kate's reflections about her 'oscillation' process (alternating between confronting and avoiding loss-related stressors) and how she could enhance her restoration-oriented coping, such as through gaining new perspectives about Jim's critical illness, re-engaging in her hobbies and creating new life goals adapted to Jim's rehabilitation needs; Harris, 2019).

Session 14: therapy blueprint and outcomes of therapy

The final session focused on developing a 'blueprint' to consolidate Kate's learning from therapy. Kate reflected on the progress she had made during therapy and shared that she was no longer experiencing any intrusive memories or flashbacks related to Jim's critical illness. Kate further reported a reduction in her safety behaviours, which included taking the clothes off the landing of her stairs (initially used to change the trauma environment) and no longer checking Jim's breathing and BP during the night. She had also achieved several meaningful 'reclaiming' goals, such as going for regular afternoon walks with Jim on the South Downs and even returning to work one day a week whilst leaving Jim home alone. Qualitative feedback about the therapy process and CCPS was also gathered from Kate using a patient experience questionnaire, where she reported what aspects of the work were most helpful.

Outcome

Within 14 sessions, Kate's IES-R score decreased from 46 to 6, indicating that she no longer met the criteria for a diagnosis of PTSD. Her GAD-7 and PHQ-9 scores also both decreased from 13 to 1, indicating that she no longer showed signs of clinically significant anxiety or depression. These changes correlated with Kate's qualitative feedback about the reduction in her intrusive PTSD symptoms and use of safety behaviours.

Discussion

The prevalence of PTSD (and other adverse family responses), in connection with PICS-F, highlights the necessity of psychological provision in critical care services to offer ongoing follow-up support to families of critically ill patients (Schoeman *et al.*, 2018). Thus far, no guidance has been developed for treating PTSD in family members who have witnessed medical trauma, in the context of their loved one's ICU admission. This case study therefore illustrates the utility of Ehlers and Clarke's (2000) CT-PTSD model to treat PTSD pertaining to PICS-F, alongside several adaptations made for ICU-related traumatic stressors and loss experiences.

In the service discussed, the clinical psychologist (although a lone practitioner within the CCPS) is integrated into a large multi-disciplinary team (MDT) of healthcare professionals. This MDT framework facilitated the early recognition of Kate's ongoing distress and referral to the CCPS, via her attendance to the ICU peer-support group. Kate's assessment with the clinical psychologist consequentially initiated the early psychological intervention for her PTSD, which is found to reduce intrusive symptoms and the risk of chronic post-traumatic problems (Roberts *et al.*, 2019). Given the prevalence of chronic physical, social and economic consequences for those with PTSD (McGowan, 2019), early intervention from psychologists embedded into critical care services may therefore reduce the later burden on primary care, mental health and social services. Moreover, the cohesive MDT structure of the service provided the clinical psychologist with specialist knowledge and contextual information about the ICU environment and the nature of Jim's critical illness, allowing Kate to receive psychological support that could be specifically adapted to her unique trauma memories and needs. An important aspect of Kate's therapy involved consultation with other healthcare professionals involved in Jim's medical care, who provided insight into cognitive misappraisals that could be targeted within the work. Additionally, a graded approach to revisiting the scene of the trauma could be facilitated spontaneously, as the CCPS therapy room was situated a short distance from the ICU, leading Kate to have natural exposure to traumatic stressors during her therapy. This approach is recommended for therapy clients who are initially too anxious to return to the scene of the trauma immediately (Murray *et al.*, 2015).

Several adaptations to the traditional CT-PTSD model were made during Kate's therapy, to apply her experiences to the specific context of Jim's critical illness. This included the incorporation of the DPM (Stroebe and Schut, 1999), which encouraged Kate's reflections on her experiences of intangible loss and disenfranchised grief following her husband's ICU admission. Whilst the DPM was initially developed for use with bereaved individuals following the death of a loved one, the model is readily applicable to grief in non-death loss (Harris, 2019). Kate shared at the end of therapy that naming her experiences as disenfranchised grief helped to validate her feelings of loss; in turn strengthening her therapeutic relationship with the clinical psychologist and her engagement in therapy. Disenfranchised grief is identified as a complicating factor in non-death loss, due to its role in minimising social support and opportunities to verbalise the loss experience (Harris, 2019). The DPM provided a framework for understanding Kate's experiences of grief within the context of her PTSD and considering how she may be contributing to her sense of disenfranchisement (e.g. through avoidance of talking with friends about the trauma; Neimeyer and Krawchuk, 2019). Such experiences were formulated as factors that maintained her current sense of threat and PTSD symptoms. These discussions further supported the development of Kate's therapy goals, which were accomplished as part of her 'reclaiming' activities.

Limitations

Given the breadth of psychological experiences related to PICS-F, the intervention outlined in this case study may not be generalisable to other relatives of critically ill patients impacted by an ICU admission. Individual differences in families treated under the CCPS (such as previous experiences, cultural values, socio-economic background and beliefs about health) are likely to significantly impact coping following an ICU admission and the nature of the psychological intervention provided. Additionally, diversity in acute healthcare systems across the UK and funding provided to psychological provision embedded into ICU teams may also affect the applicability of this case study to other contexts. Furthermore, due to the limited capacity of the CCPS discussed, a follow-up session was not facilitated following Kate's completion of her therapy and the long-term positive effects of the intervention thus remain unknown. Nevertheless, despite

the above limitations, this case study illustrates the effective use of CT-PTSD (Ehlers and Clarke, 2000), modified to consider the DPM of coping with bereavement (Stroebe and Schut, 1999), for use with relatives experiencing PTSD in the context of PICS-F.

Key practice points

- (1) This case study would benefit clinicians working with relatives of former ICU patients experiencing PTSD following their loved one's critical care admission. Psychological provision embedded into existing critical care services can support the early recognition, formulation and psychological treatment for PTSD, providing specialist support for PICS-F, which is adapted to relatives' specific trauma context and memories.
- (2) Clinicians should consider the experiences of disenfranchised grief and intangible loss following critical illness and how this can contribute to the maintenance of distress and PTSD symptoms. The DPM (Stroebe and Schut, 1999) can provide a helpful framework for supporting the relatives of former ICU patients to understand their experiences of grief following a medical trauma and should be considered when adapting the CT-PTSD model to this context.
- (3) Consultation with other healthcare professionals involved in the previous care of the loved one of the relatives seeking therapy can meaningfully contribute to treatment planning and outcomes. The involvement of other clinicians in CT-PTSD sessions can positively contribute to trauma memory meaning-making and trigger discrimination.

Further reading

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Data availability statement. The author can confirm that the data supporting the findings are available in this article.

Acknowledgements. The author would like to thank Dr Rebecca Dodds (Principal Clinical Psychologist) for her valuable supervision of this work and the client for her consent. The author would also like to acknowledge Dr Theophilus Samuels (Consultant in Intensive Care Medicine and Anaesthesia) for his support and encouragement with critical care psychological provision at Surrey and Sussex Healthcare NHS Trust.

Author contributions. **Devon Rodwell:** Conceptualization (lead), Project administration (lead), Writing – original draft (lead), Writing – review & editing (lead).

Financial support. This case study received no financial support.

Competing interests. There are no known competing interests.

Ethical standards. The author abided by the Ethical Principles of Psychologists and Code of Conduct, as outlined by the British Association for Behavioural and Cognitive Psychotherapies (BABCP) and British Psychological Society (BPS). As this case study was conducted as part of routine psychological therapy delivered in the critical care psychology service discussed, ethical approval was not required. Written client consent for journal publication was obtained. Data management for the case study was conducted in line with BPS recommendations. This submission has been read and approved by the participating client.

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