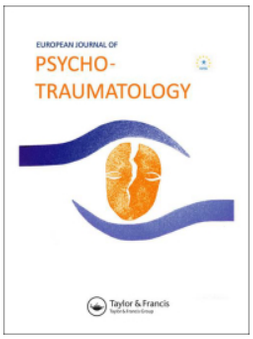

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The Reconsolidation of Traumatic Memories Protocol's adjustments to the remote treatment of injured Ukrainian military personnel in hospital settings

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ABSTRACT

Background: Due to the Russian invasion of Ukraine and the intense battlefield combat, many Ukrainian defenders have severe gunshot and explosion injuries, which result in broken bones, spinal damage, limb loss, and more. This physically and emotionally intensive experience often leads to acute stress disorder (ASD) and/or post-traumatic stress disorder (PTSD). During post-surgical recovery, injured military personnel need trauma-centred psychotherapy, which is often unavailable because of the hospital's setting limitations.

Objective: The article aims to present adjustments of the Reconsolidation of Traumatic Memories (RTM) (US Patent Pending Number US-2024-0148297-A1) Protocol, a structured non-pharmaceutical neuro-based treatment that targets traumatic memory, to the remote treatment of injured Ukrainian military personnel in hospital settings.

Method: This clinical practice paper presents two cases of online administration of the RTM Protocol in hospital settings to demonstrate the main adjustments made for remote work with physically injured military personnel.

Results: The patients were referred to receive online RTM Protocol treatment by a surgeon due to the psychiatrist-assigned ASD diagnosis, presenting in repetitive flashbacks and sleep disturbances interfering with the post-surgical recovery. Initial and post-treatment screenings using the PCL-5 showed a significant drop in scores: from 36 to 12 points for the first case and from 41 to 7 points for the second case. The patients reported improvements in their mood and sleep, as well as the disappearance of flashbacks. The main adjustments involved on-site adaptations (using the procedure room, utilising nurse assistance, ensuring a stable Internet connection) and modifications to the procedure (conducting shorter sessions, up to 45 min), delegating some Protocol administration steps to patients, and using military jargon and commands.

Conclusions: The online administration of the RTM Protocol shows promise for treating combat-related ASD in hospital settings, providing a structured intervention for recovering military personnel, and ensuring accessibility and effectiveness in resource-limited settings.

Ajustes del Protocolo de Reconsolidación de Memorias Traumáticas para el tratamiento remoto de personal militar ucraniano herido en contextos hospitalarios

Antecedentes: A raíz de la invasión rusa a Ucrania y los intensos enfrentamientos en el campo de batalla, numerosos defensores ucranianos han sufrido heridas graves por armas de fuego y explosiones, que resultan en fracturas óseas, daño medular, pérdida de extremidades, entre otras. Estas experiencias físicas y psicológicas extremadamente traumáticas conllevan frecuentemente al desarrollo de trastorno de estrés agudo (TEA) y/o trastorno de estrés postraumático (TEPT). Durante el proceso de recuperación postquirúrgica, los militares heridos requieren psicoterapia centrada en el trauma; que a menudo no está disponible debido a las limitaciones del entorno hospitalario.

Objetivo: Este artículo tiene como objetivo describir las adaptaciones realizadas al Protocolo de Reconsolidación de Memorias Traumáticas (RTM, por sus siglas en inglés), una intervención basado en la neurocuiencias estructurada y no farmacológica orientada a la desensibilización de memorias traumáticas, para su implementación remota en personal militar ucraniano hospitalizado.

Método: Este artículo de práctica clínica presenta dos estudios de caso que documentan la aplicación remota del protocolo RTM en un contexto hospitalario, ilustrando las principales modificaciones introducidas para su administración a distancia en personal militar con lesiones físicas.

Resultados: Ambos pacientes fueron derivados por el cirujano tras un diagnóstico de TEA realizado por el psiquiatra, evidenciado por flashbacks recurrentes y alteraciones del sueño

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RTM Protocol; PTSD; ASD; combat trauma; trauma therapy; reconsolidation; traumatic memories

PALABRAS CLAVE

Protocolo RTM; TEPT; TEA; trauma de combate; terapia del trauma; reconsolidación; recuerdos traumáticos

HIGHLIGHTS

- This study outlines how the Reconsolidation of Traumatic Memories Protocol, a structured neuro-based trauma therapy, was adapted for the online treatment of Ukrainian military personnel recovering from combat injuries in hospital settings.
- Patients undergoing the adapted treatment showed significant decreases in trauma-related symptoms, alongside sleep and mood improvements.
- By introducing procedural and environmental modifications – such as shorter sessions, nurse assistance, and military-specific communication – this approach offers a scalable solution to provide trauma care in resource-limited hospital settings.

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que interferían con la recuperación postoperatoria. Las evaluaciones pre y postratamiento mediante el cuestionario PCL-5 mostraron una disminución significativa de los puntajes: de 36 a 12 puntos en el primer caso, y de 41 a 7 puntos en el segundo. Los pacientes reportaron mejoras en el estado de ánimo, calidad del sueño y desaparición de los flashbacks. Las principales adaptaciones incluyeron ajustes en el entorno (uso de salas de procedimiento, apoyo del personal de enfermería, conexión estable a Internet), modificaciones en la estructura de las sesiones (sesiones más cortas de hasta 45 minutos), delegación de ciertas fases del protocolo a los propios pacientes, y el uso de terminología y comandos propios del ámbito militar.
Conclusiones: La administración en línea del protocolo RTM en entornos hospitalarios se perfila como una estrategia prometedora para el abordaje del TEA relacionado con el combate, proporcionando una intervención estructurada para el personal militar en recuperación y garantizando la accesibilidad y la eficacia en entornos con recursos limitados

1. Introduction

Starting from 2015, Ukrainian military personnel have been actively engaged in battlefield combat, with its intensity escalating in 2022 due to the full-scale Russian invasion. Although accurate statistics on combat-related injuries and mental health disorders are classified, widely circulated estimates from the Wall Street Journal indicate that there were 400,000 wounded Ukrainian troops as of September 2024 (Pancevski, 2024). Given that lifetime combat-related PTSD can affect up to 19% of veterans, especially those with an increased risk for heavy combat exposure (Wisco et al., 2014), the number of Ukrainian veterans in need of professional help is substantial.

Considering the need for combat-related PTSD treatment for Ukrainian defenders who simultaneously have physical injuries, it is essential to develop an effective formula for evidence-based mental health care suitable for a hospital setting.

One potential solution is the on-site utilisation of memory consolidation/reconsolidation therapies, which are emerging, short-term, neuro-based procedures for treating trauma-related conditions. Based on memory reconsolidation theory, such therapies rely on changes in some brain circuits to eliminate neuro-arousal connected with the trauma experience and re-experience. The main targets are intrusive symptoms (memories, nightmares, flashbacks, physical and emotional reactions) that are considered a main mediator for all clusters of trauma-related symptoms and adaptive functioning (Alberini & LeDoux, 2013; Iyadurai et al., 2019).

With the development of theory and practice, more randomised controlled trials (RCTs) on reconsolidation therapies are emerging. Thus, according to a meta-analysis conducted up to 2018, three protocols met the quality RCT criteria: pharmacology-based Hydrocortisone for PTSD Prevention Protocol, imagery exposure-based Reconsolidation of Traumatic Memories Protocol, and computer game-based Cognitive Task Memory Interference Procedure with Memory Reactivation (Astill Wright et al., 2021). Additionally, there are recent RCTs, such as the RETURN study on the Rewind Technique or clinical trials on propranolol-based memory reactivation (Astill Wright et al., 2023; Brunet et al., 2021; Roullet et al., 2021).

The Reconsolidation of Traumatic Memories Protocol is considered as one of the most promising among consolidation/reconsolidation therapies (emerging short-term, neuro-based procedures that aim to eliminate neuro-arousal connected with trauma experience) with the largest effect size (SMD = −3.64) (Astill Wright et al., 2021).

The RTM Protocol is a structured, algorithmic, and manualised 89-step procedure that leads a person through consecutive visual imagery exercises (so-called visual formats). During the process, an RTM practitioner gives guidance and support and asks about brief recalls of the traumatic event, which, nonetheless, are quickly terminated so as not to cause trauma-related distress and coincident sympathetic arousal. The brief trauma-retelling opens the so-called reconsolidation window, whereas the role of visual formats is to reconsolidate the traumatic memory. The Protocol requires three to five up to 90-minute sessions, which can be run daily, with at least one sleep cycle in between (Gray, 2022).

Neuro findings show that trauma memory processing through the RTM Protocol normalises excessive high-beta activity mainly generated in mesial temporal brain areas such as the hippocampus and amygdala (Lewine et al., 2023). In terms of symptoms, there are the elimination of distressing memories and dreams, dissociative reactions, negative alterations in cognitions and mood, and alterations in arousal. Additionally, the RTM Protocol modifies the structure of trauma-related memories and makes them non-threatening past events. Typically, by the end of the first session, a person can tell a richer, more coherent, and less emotional trauma-related story; at the end of the treatment, full access to the previously traumatic memories with no flashbacks and nightmares is reported (Gray et al., 2019; 2021; Tylee et al., 2017).

Randomised controlled trials for the treatment of PTSD with the Protocol show high effect sizes (SMDs > 2.0) and a significant reduction of symptoms (ranging from 71% to 90%) with lasting results at follow-up from 6 months to one year after the intervention (Gray et al., 2019; Gray et al., 2021; Sturt et al., 2023; Tylee et al., 2017).

According to data from veteran populations in the UK and the USA, 71–88% of treated former military personnel have lost their diagnoses of post-traumatic stress disorder (Gray et al., 2019; Tylee et al., 2017). A comparative study with TF-CBT also speaks in the RTM Protocol's favour for combat-related trauma with a bigger mean reduction (18-point vs. 8-point) for the PTSD score according to the self-assessment PCL-5 checklist (Sturt et al., 2023). The meta-analysis of psychological therapies in treating active duty and ex-serving military personnel with PTSD put the RTM Protocol together with TF-CBT as approaches that met the threshold for clinical importance and recommended taking the RTM Protocol under consideration as a valid alternative to more established paradigms (Kitchiner et al., 2019).

The efficacy of the RTM Protocol is comparable to the efficacy of guideline-recommended psychological trauma treatments. UK National Institute for Health and Care Excellence listed the RTM Protocol among therapies with emerging clinical evidence (NICE, 2018). The National Health and Medical Research Council of Australia named the RTM Protocol a promising intervention recommended for further research that shows clinically important benefits (NHMRC, 2021). The International Society for Traumatic Stress Studies also recommends the RTM Protocol as a treatment for PTSD with emerging evidence (Forbes et al., 2020). The RTM Protocol was also approved by the Ministry of Health of Ukraine as an evidence-based treatment for trauma-related conditions (Ministry of Health of Ukraine, 2023).

Although there is no research on the RTM Protocol's efficiency in treating acute stress disorder, it is important to mention that both conditions are present in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), with the main difference being the occurrence and duration of their symptoms. ASD is characterised by symptoms that occur within three days to one month following exposure to a traumatic event, whereas PTSD is diagnosed when symptoms persist for more than one month (APA, 2022). There is some data that individuals who meet the full criteria for ASD are highly likely, though not inevitably, to develop PTSD if left untreated, as well as some early targeted trauma interventions are effective in limiting the later PTSD in civilian and military (Bryant, 2019; Forbes et al., 2020; Matson et al., 2022).

The similarities between the diagnostic criteria for ASD and PTSD, along with their complete representation in the PTSD Checklist for DSM-5 (PCL-5) and the absence of validated Ukrainian versions of ASD screening tools, make it conditionally acceptable to utilise the PCL-5 (past week form) for assessing ASD symptoms in clinical practice.

Taking into account that the RTM Protocol is focused on processing traumatic events without emotional hyperarousal, implies only three to five sessions with no homework, and is thoroughly manualised, its online administration in a hospital setting with some adjustments can be considered an effective solution for covering the need in combat-related trauma treatment (both for ASD and PTSD) in Ukraine.

2. Method

A case analysis of two typical cases of combat-related ASD was conducted to present the adjustments of the RTM Protocol for online treatment of physically injured Ukrainian military personnel within hospital settings. It is presented in this article based on CARE case report guidelines (Gagnier et al., 2014).

2.1. Participants

Both patients, male service members, one with a traumatic amputation and the other with a spinal cord injury, were admitted to the surgical ward of a civilian local hospital in Ukraine to undergo surgery treatment in May–June 2022.

2.2. Procedure

At the beginning of the post-surgery recovery course, both patients were referred by the attending surgeon for online RTM Protocol treatment due to psychiatrist-diagnosed ASD, as the recovery was significantly affected by the disorder's symptoms (repetitive flashbacks and sleep disturbances).

After preliminary screening, the RTM Protocol was administered online three times in full (a complete 89-step procedure) to both patients by an article author, a certified registered clinician from Ukraine.[1] The sessions were conducted sequentially, day by day, and the entire treatment course lasted up to one week.

Two groups of adjustments were implemented in both cases, which illustrate the online administration of the RTM Protocol for the trauma treatment of physically injured military personnel in hospital settings. First, there were on-site adjustments concerning the physical space (the use of a treatment room with mobile post-surgical beds relocated for the session), the choice of a communication platform that ensured high privacy and security (Signal), and the

engagement of medical staff to guard privacy, assist with mobility and comfort issues, and maintain the stability of the Internet connection. Secondly, some adaptations were made to the treatment procedures, such as conducting shorter sessions (up to 45 min) and delegating some steps of the Protocol to patients, using military jargon and commands while administrating.

2.3. Ethics

Both participants signed the detailed informed consent forms to receive trauma treatment with the RTM Protocol and to have their cases presented for scientific purposes.

The authors adhere to the Declaration of Helsinki and Model Code of Ethics of the European Federation of Psychologists Associations (EFPA), the Code of Ethics of the National Psychological Association of Ukraine, a member of the EFPA, Inter-Agency Standing Committee (IASC) Recommendations for Conducting Ethical Mental Health and Psychosocial Research in Emergency Settings.

The Consent Form and Risk Mitigation Procedure were evaluated and approved by the Ethics Committee of the Zhytomyr Ivan Franko State University (registered in the Office for Human Research Protections), approval number 01–3105/2022 (31 May 2022).

2.4. Measures

Among the outcome measures were daily self-ratings of overall mood and sleep quality each on a scale from 1 (very poor) to 10 (excellent), collected by the attending nurses during regular morning visits throughout the patient's hospital stay. On days when the Protocol was administered, data were collected prior to the therapeutic sessions. Prescription (anxiolytics and hypnotics) updates in clinical records were collected to understand the clinical needs for the management of anxiety and sleep disturbances. The PCL-5 checklist (past week form) for assessing the severity of symptoms was administered by the RTM practitioner during the initial post-treatment assessment (within the following 3 days) and the follow-up assessment (1 month after Protocol administration). Cutoff score of 31–33 was considered as indicative for probable PTSD based on examination of the PCL-5 psychometric properties in veterans and recommendations from the US National Center for PTSD (Bovin et al., 2016; National Center for PTSD, 2023). Additional clarifications were provided during the first and follow-up assessments regarding the occurrence of flashbacks or persistent memories of the traumatic event, the overall duration of sleep, the number of awakenings per night, and the number of nightmares experienced in the previous month. Also, self-ratings for subjective distress throughout trauma retelling were measured with the following question inscribed in the Protocol: 'As you recalled that memory, how much emotion in relation to fear, terror, or helplessness did you experience? Describe it on a scale of 0 to 10, where 0 = no feeling at all and 10 = extremely intense. How would you rate the intensity of your experience of the memory just then?'

3. Results

3.1. Therapeutic intervention

Both patients underwent four therapeutic online RTM Protocol sessions over four consecutive days. The protocol as a structured, mandatory-to-administrate 89-step procedure consists of three main phases: Pre-treatment, Treatment, and Retelling of the Trauma Event. Aside from establishing therapeutic rapport and framing the work, one of the key tasks in the Pre-treatment phase is the Visual Formats Practice. This involves specially organised exercises that help a person engage in imaginative activities with neutral events, preparing them to do similar work addressing trauma in the subsequent steps. The Treatment phase implies leading a person through three types of Visual Formats, specific techniques used to help clients visualise the trauma story in a way that minimises the distress of recalling. The Retelling of the Trauma Event phase intersperses with Visual Formats and serves to assess of so-called subjective distress throughout persons' retelling of traumatic events.

In both cases, two groups of adjustments – environmental (on-site) and procedural – were implemented. Among the main environmental adjustments are the following:

(1) Post-surgical beds and attending nurse assistance addressed mobility impairment issues and physical pain due to uncomfortable positions or numbness in the limbs. In each case, the bed was transformed to ensure optimal body posture for the patients and adjusted during each session when needed.
(2) Post-surgical beds were relocated in the treatment room, which was kept free of appointments during session times. The attending nurse ensured that no one disturbed the patient while the Protocol was administered, maintaining the confidentiality of the work. The nurse was easily accessible for assistance through the call button.
(3) The Signal platform was chosen for online work as one with high privacy and security reliability.
(4) An attending nurse ensured a fully charged power bank and access to the hospital staff Wi-Fi network to address possible blackouts.

Procedural modifications include:

(1) To address post-surgical fatigue, each session lasted up to 45 min (the usual duration is up to 90 min). This was possible because the Protocol's Pre-treatment component was transferred to a separate Pre-treatment session (i.e. rapport building, explanation, visual format practice), and the first therapeutic session was terminated after the two types of visual formats (the classical procedure implies full Protocol accomplishment at the first therapeutic session).
(2) To support military identity as a particular sense of self that is connected with control and responsibility, some Protocol steps administration were delegated to the patients. As long as the patients were able to visualise the trauma story in each of the visual formats without experiencing distressing emotions, they started to give the Protocol's instructions to themselves, leading the procedure instead of the RTM professional.
(3) Military jargon and specific commands were used to maintain the communication style accustomed to military circles and to ease the Protocol administration (APA, 2021). For example, instead of the instruction 'Go ahead, run the movie' for visual formats, the commands 'Execute'/'Carry out' were used.

3.2. Case 1 presentation

3.2.1. Patient information

The patient is a 42-year-old man, married, with two children. The patient sustained a traumatic right limb amputation due to a high-energy explosion during an air attack on 27 May 2022. Prehospital treatment included tourniquet application (at the event place) following initial debridement, vascular repair, and sterile dressing (at a medical stabilisation point in two hours). Hospital surgery (on 1 June 2022) involved amputation revision. The post-surgery psychiatric assessment showed comorbid ASD. Short-term post-operative care focused on antibiotics, painkillers, acute anxiety management (Lorazepam), and management of acute sleep disturbances (Zolpidem). On 3 June, the patient was referred for RTM Protocol treatment.

3.2.2. Clinical findings

During the screening session (6 June 2022), the patient reported vivid and distressing flashbacks triggered by auditory cues (sounds of flying aircraft and helicopters), occurring regularly. His sleep quality was poor, averaging 5–7 h per night with 5–10 awakenings due to physical pain and noise in the hospital ward (crying, groaning, snoring, etc.). The pre-treatment PCL-5 score was 36. No nightmares were reported.

3.3.3. Timeline

- 6 June 2022: Initial assessment session.
- 7 June 2022: RTM Protocol pre-treatment session.
- 8 June 2022: First RTM Protocol therapeutic session.
- 9 June 2022: Second RTM Protocol therapeutic session.
- 10 June 2022: Third RTM Protocol therapeutic session.
- 11 June 2022: Fourth RTM Protocol therapeutic session.
- 13 June 2022: Post-treatment assessment session.
- 7 July 2022: Follow-up assessment session.

3.3.4. Follow-up and outcomes

Post-treatment outcomes showed a significant improvement in the patient's condition. The PCL-5 scores decreased from 36 before treatment to 17 after treatment and further down to 12 scores one-month post-treatment. At the follow-up assessment session, the patient reported that flashbacks were fully resolved, with no recurrences. Sleep quality also improved, with the patient averaging 6–8 h of sleep per night and experiencing fewer awakenings, reduced to about 2 per night. Additionally, the patient self-rated overall mood and sleep quality enhanced daily and reached 7 and 6 out of 10 scores at the discharge date. Self-ratings for subjective distress throughout trauma retelling during therapeutic sessions drastically decreased to 'no feeling of fear, terror, or helplessness at all.'

3.3.5. Patient perspective

The patient expressed profound relief and gratitude for the treatment. He stated, 'I feel much better. Most important things – there are no vivid there-moments anymore,' meaning flashbacks. He described the disappearance of flashbacks as an experience that enabled him to focus on his physical recovery and reconnect with his family. Improved sleep quality and better mood were highlighted as critical factors in his progress. The patient appreciated the adjustments made for his specific needs, including nurse assistance and letting him freely use the military jargon during the Protocol administration (Tables 1 and 2).

3.3. Case 2 presentation

3.3.1. Patient information

The patient is a 30-year-old man, married, with one child. On 5 June 2022, the patient sustained a spinal trauma with significant soft tissue damage resulting from shrapnel impact to the thoracic region, causing significant neurological impairment (partial paralysis, affecting both motor and sensory functions). Initial

Table 1. Diagnostic assessment data collected outside of sessions.

	6 June	7 June	8 June	9 June	10 June	11 June	12 June	13 June
Self-ratings for overall mood quality (0–10)	1	1	1	5	5	7	7	7
Self-ratings for overall sleep quality (0–10)	0	0	0	3	5	7	6	6
Medication prescription[a]	Lorazepam (1 mg/PO TID) Zolpidem (10 mg/PO QHS)				Lorazepam (1 mg/PO BID) Zolpidem (5 mg/PO QHS)			Medication discontinued

Note. [a]PO – orally; BID – 2 times a day; TID – 3 times a day; QHS – every night at bedtime.

prehospital treatment included spinal immobilisation (at the event place) following the application of a rigid cervical collar and soft tissue wound debridement (at a medical stabilisation point in five hours). Hospital surgery (on 6 June 2022) involved laminectomy (decompressive surgery) and spinal stabilisation via internal fixation. The post-surgery psychiatric assessment showed comorbid ASD. Short-term post-operative care focused on antibiotics, painkillers, acute anxiety management (Lorazepam), and management of trauma-related nightmares (Prazosin). On 11 June, the patient was referred for RTM Protocol treatment.

3.3.2. Clinical findings

During the screening session (13 June 2022), the patient reported experiencing recurrent, persistent flashbacks of the trauma event, accompanied by strong fear, which occurs randomly with no visible triggers. His sleep quality was poor because of physical pain, with an overall sleep duration of no more than 6 h per night with 6–10 awakenings. Trauma-related persistent nightmares were reported. The pre-treatment PCL-5 score was 41.

3.3.3. Timeline

- 13 June 2022: Initial assessment session.
- 14 June 2022: First RTM Protocol therapeutic session.
- 16 June 2022: Second RTM Protocol therapeutic session.
- 17 June 2022: Third RTM Protocol therapeutic session.
- 18 June 2022: Fourth RTM Protocol therapeutic session
- 20 June 2022: Post-treatment assessment session.
- 4 July 2022: Follow-up assessment session.

3.3.4. Follow-up and outcomes

Post-treatment assessment showed significant improvements. The PCL-5 score reduced from 41 before treatment to 7 at the one-month follow-up. Flashbacks were fully resolved; the patient reported no recurrence of distressing memories. Sleep quality improved significantly (up to 7 self-rated scores), with 8 h of sleep and only 2–3 awakenings per night. Self-ratings for subjective distress during the retelling of the traumatic event decreased to 0.

3.3.5. Patient perspective

The patient was satisfied after undergoing the RTM Protocol intervention, stating, 'I try to think about what happened as if it's a movie, just like we practised in our sessions. I understand it was real, but I can switch it on and off like a movie; I can recall it when I'm ready to see it.' The patient appreciated the structured nature of the therapy, as well as the flexibility it

Table 2. Diagnostic assessment data collected during sessions.

		6 June	8 June	9 June	10 June	11 June	13 June	7 July
Initial assessment	PCL-5 (score)	36						
	Sleep duration (hours per night)	5–7						
	Awakenings (times per night)	5–10						
	Flashbacks (times per week)	≈30						
	Nightmares (times per week)	no						
Assessment during treatment (subjective distress throughout trauma event retelling)	Self-rating (0–10), first retelling		7	4	2	1		
	Self-rating (0–10), second retelling		3	1	1	0		
	Self-rating (0–10), third retelling			1	1	0		
Post-treatment assessment	PCL-5 (score)						17	
Follow-up assessment	PCL-5 (score)							12
	Sleep duration (hours per night)							6–8
	Awakenings (times per night)							2–3
	Flashbacks (times per week)							No
	Nightmares (times per week)							No

Table 3. Diagnostic assessment data collected outside of sessions.

	13 June	14 June	15 June	16 June	17 June	18 June	19 June	20 June
Self-ratings for overall mood quality (0–10)	0	0	2	3	3	5	5	6
Self-ratings for overall sleep quality (0–10)	0	0	0	2	3	3	7	7
Medication prescription	Lorazepam (1 mg/PO TID) Prazosin (2 mg/PO QHS)				Lorazepam (1 mg/PO BID) Prazosin (4 mg/PO QHS)			Medication discontinued

provided in addressing his specific needs related to his military service (Tables 3 and 4).

4. Discussion

The described cases demonstrate the expediency of RTM Protocol adjustments that have been made for the remote acute trauma treatment of injured military personnel in hospital settings. The findings suggest that significant symptom reductions can be achieved even under challenging conditions, such as difficulties associated with the post-surgical period and limited hospital resources.

The results align with previous research indicating the efficacy of the RTM Protocol in military populations in terms of significant drop in PTSD symptoms (Gray et al., 2019; Sturt et al., 2023; Tylee et al., 2017). However, all preceding studies were conducted with military veterans who have actively served a long time ago and have no recent combat experience. Their PTSD diagnoses are not necessarily associated with combat-related trauma besides the Protocol administration occurring in the setting of specialised mental health services with no recent physical and psychological difficulties associated with consequences of traumatic surgery.

Our decision underlying using the RTM Protocol in the cases of physically injured military personnel was made to ease severe trauma-related distress which interfered with physical recovery. Both patients were diagnosed with ASD, as the DSM is adopted in Ukraine (Ministry of Health of Ukraine, 2024). Demonstrating acute symptoms of trauma following severe physical injuries, both cases showed significant reductions in trauma-related symptoms after the administration of the RTM Protocol.

The main challenges addressed during Protocol administration in the described cases concern the physical consequences of recent combat injury (post-surgical condition, mobility impairments), patients' needs (in confidentiality, security, military identity, and communication style), and surgical ward limitations (absence of separate therapeutic rooms, non-confidential environment, possible blackouts, and unstable Internet due to war circumstances).

Following the original short, structured, and non-distressing procedure of reprocessing traumatic memories with the Protocol, we implemented a row of procedural and environmental adjustments. The first ones were shorter session durations, delegation of protocol steps to patients, and utilisation of military-specific language, which facilitated clients' engagement and adherence despite different constraints. They allow patients to take an active role and foster their sense of control and agency. All environmental adjustments (the use of treatment rooms, medical staff engagement, and ensuring technological reliability) were preliminarily discussed and agreed upon with the attending surgeon and nurses as treatment occurred in the hospital ward with their assistance.

Table 4. Diagnostic assessment data collected during sessions.

		13 June	14 June	16 June	17 June	18 June	20 June	4 July
Initial assessment	PCL-5 (score)	41						
	Sleep duration (hours per night)	≈6						
	Awakenings (times per night)	6–10						
	Flashbacks (times per week)	≈10						
	Nightmares (times per week)	4–5						
Assessment during treatment (subjective distress throughout trauma event retelling)	Self-rating (0–10), first retelling		8	6	2	0		
	Self-rating (0–10), second retelling		4	3	1	0		
	Self-rating (0–10), third retelling			1	1	0		
Post-treatment assessment	PCL-5 (score)						10	
Follow-up assessment	PCL-5 (score)							7
	Sleep duration (hours per night)							6–8
	Awakenings (times per night)							2–3
	Flashbacks (times per week)							No
	Nightmares (times per week)							No

Despite the promising results, data from case analyses are limited. Larger-scale clinical studies with participants of different demographics, potentially involving randomisation for various types of interventions, are needed. Regarding outcomes measures, it is essential to conduct long-term evaluations using not only self-reports but also more objective measures, differentiating acute and post-traumatic stress disorders, including structured clinical interviews (e.g. CAPS-5), and biomarker assessments.

The online administration of the RTM Protocol demonstrates the promising potential for addressing combat-related ASD in hospital settings, offering a structured and adaptable intervention for military personnel undergoing post-surgical recovery. The procedural and environmental adaptations implemented in these cases highlight the importance of tailoring ASD interventions to the needs of injured service members, ensuring accessibility and effectiveness even in resource-constrained environments.

Ethics approval statement

The Consent Form and Risk Mitigation Procedure were evaluated and approved by the Ethics Committee of the Zhytomyr Ivan Franko State University (registered in the Office for Human Research Protections), approval number 01–2905/2022 (3 May 2022).

Patient consent statement

The participants signed the detailed informed consent forms to receive trauma treatment with the RTM Protocol and to have their cases presented for scientific purposes.

Note

1. Register of certified RTM practitioners https://thertmprotocol.com/certified-providers.

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Disclosure statement

Robin Hampton (co-author) is affiliated with the Post Traumatic Training Institute PTTI, which provides training on the method described in this article. However, the authors declare that this affiliation has not influenced the study design, data collection, analysis, interpretation, or reporting of the findings.

Data availability statement

All data generated or analysed during the study are included in this article.

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