

Accelerated resolution therapy: an innovative mental health intervention to treat post-traumatic stress disorder

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Received 23 January 2015

Accepted 2 June 2015

ABSTRACT

Post-traumatic stress disorder (PTSD) is a disabling trauma and stress-related disorder that may occur after a person experiences a traumatic event, and evokes a combination of intrusion and avoidance symptoms, negative alterations in cognitions and mood, and alterations in arousal and reactivity. Accelerated resolution therapy (ART) is an emerging psychotherapy that provides fast and lasting resolution for mental health problems such as PTSD. ART has been shown to achieve a positive result in one to five sessions, typically over a 2-week period, and requires no homework, skills practice or repeated exposure to targeted events. Initial research, including one randomised control trial, has demonstrated that ART interventions can significantly reduce symptoms of psychological trauma in both civilians and US service members and veterans. These results suggest that ART be considered as either a primary treatment option or for refractory PTSD in those with a suboptimal response to endorsed first-line therapies. Conservative estimates indicate substantial potential cost savings in PTSD treatment. Despite the need for more definitive clinical trials, there is increasing interest in ART in the USA, including in the US Army. The growing positive empirical evidence is compelling, and there appears to be sufficient evidence to warrant UK researchers undertaking ART research. The armed forces offer the potential for comparative international trials. However, equally important are veterans, emergency services personnel and those subjected to violence. ART appears to also have application in other conditions, including depression, anxiety disorders, and alcohol or drug misuse. ART can potentially help personnel traumatised by the unique challenges of war and conflict zones by providing brief psychotherapy in a readily accessible and culturally competent manner. ART facilitates the provision of interventions and resolutions in theatre, thus enhancing forces' fighting capability.

INTRODUCTION

Conflict and war, with the requirement to provide clinical and nursing care to injured men and women, have shaped health and healthcare practice throughout the world. Many of the established mental health (MH) interventions used in civilian practice, including assertive outreach, community-based care, crisis intervention¹ and group psychotherapy,² started as innovative prototypes aimed at supporting and treating soldiers. Accelerated resolution therapy (ART) is an emerging intervention that combines original elements with key components from other evidence-based and accredited MH interventions. ART was founded by Laney

Key messages

- ▶ Accelerated resolution therapy (ART) is an emerging psychotherapeutic therapy that provides fast and lasting resolution to mental health problems, such as post-traumatic stress disorder (PTSD).
- ▶ ART can achieve a positive end state in 1 to 5 sessions, and requires no homework, skills practice, or repeated exposure to targeted events.
- ▶ ART presents an opportunity to provide interventions and resolutions in the operational theatre, thus positively enhancing the fighting capability of the deployable force.

Rosenzweig with the aim of providing fast and lasting resolution for MH problems such as post-traumatic stress disorder (PTSD), depression and anxiety-related disorders. ART can achieve a positive result for many patients in one to five sessions without the need for homework or medication.

ART research studies at the University of South Florida (USF) have produced positive results, which has been acknowledged in the US Congress and by the US Armed Forces. This paper provides an overview of ART, the research to date, US Armed Forces engagement, and plans for future research and training. This therapy has potential use in both Firm Base and during operational deployments by the British Armed Forces.

British military mental health services

The British Defence Mental Health Services (DMHS) aim to maximise psychological support to service personnel by providing immediate MH support with the expectation that staff will return to duty. This objective supports the operational imperative of producing a capable workforce, able to undertake their military duties without MH problems. Current operational MH support is based on community care with a focus on risk management, risk assessment and patient maintenance. Deployed personnel who require a MH intervention are evacuated from theatre.³

PTSD and military morbidity

PTSD is a disabling trauma and stress-related disorder that may occur after a person experiences a

To cite: Finnegan A, Kip K, Hernandez D, et al. *J R Army Med Corps* Published Online First: [please include Day Month Year] doi:10.1136/jramc-2015-000417

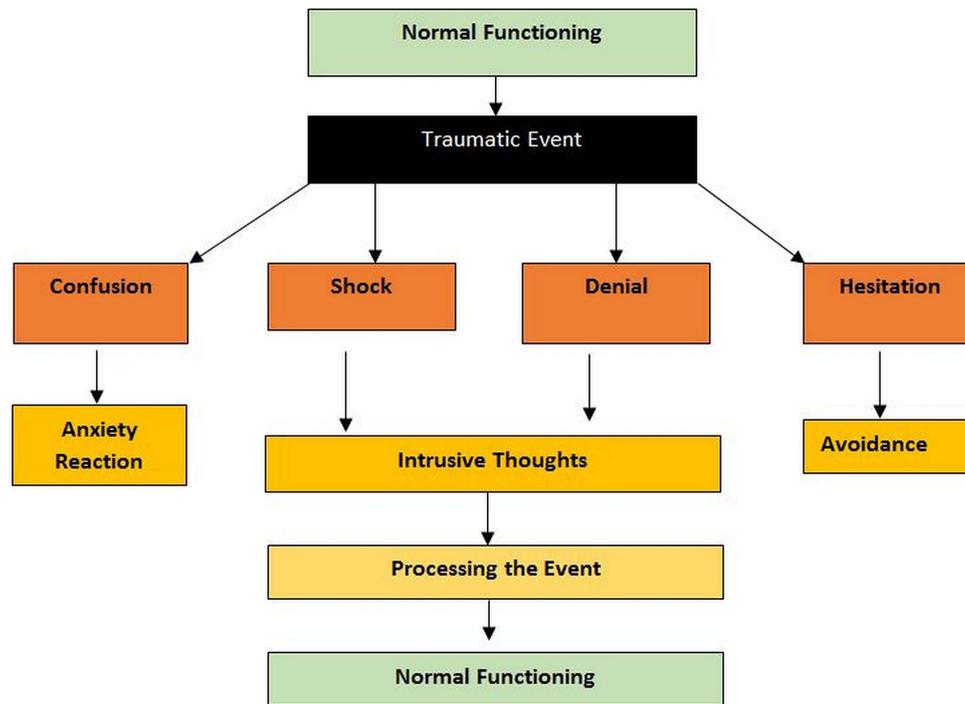


Figure 1 Normal psychological response to a traumatic incident⁵

traumatic event, and evokes a combination of intrusion and avoidance symptoms, negative alterations in cognitions and mood, and alterations in arousal and reactivity. These persistent symptoms prevent the individual from performing normally, and can become chronic unless successfully treated (Figure 1).⁴

Combat operational trauma is multidimensional and extensive,⁶ and witnessing intense human suffering and cruelty, killing others in the line of duty, or perpetrating non-sanctioned violence,⁷ may result in prolonged periods of stress, anxiety and hardship.⁸ There are reports of associated guilt and shame from moral injury⁹ and prolonged grief disorder.^{10–11} A 3-year review of UK military MH hospital admissions showed that PTSD accounted for 7% of primary admissions and 3% of patients with a single diagnosis,¹² findings reflected in other UK studies.^{13–14} From a US perspective, the conflicts in Iraq and Afghanistan have yielded PTSD estimates that vary dramatically from 2% to 31%, owing to substantially different sampling methods, combat experiences, PTSD criteria and treatment versus non-treatment seeking samples.^{15–18} US epidemiological data suggest that hundreds of thousands of military personnel are likely to have PTSD, with those exposed directly to combat at significantly higher risk.^{19–20} The US Congressional Budget Office estimates an average annual treatment cost per patient of \$8400 within the Veterans Administration (VA) system, which is four times higher than that for personnel without PTSD.²¹

Treatment of PTSD

UK and US national guidelines^{22–26} broadly agree on the use of trauma-focused therapies as first-line treatment for adults with PTSD. Core elements are narration, cognitive restructuring, in vivo exposure, stress inoculation including anxiety management and relaxation skills, and a psycho-education component. These therapies are designed to minimise PTSD symptoms through a combination of re-experiencing and reframing trauma-related memories and emotions, and teaching methods for managing trauma-related stressors.²² The most frequently endorsed and

practiced therapies for the treatment of PTSD among US veterans are prolonged exposure (PE) therapy,^{27–29} cognitive processing therapy (CPT)^{27–30–31} and eye movement desensitisation and reprocessing (EMDR).^{32–33} UK accepted evidence includes EMDR²⁴ and pharmacotherapy, particularly SSRIs and SNRIs, having received A-level recommendation in most clinical practice guidelines.^{34–35} However, the endorsed first-line treatments for PTSD have multiple limitations, specifically they are relatively lengthy, costly and have variable rates of completion and treatment success. A list and descriptions of common PTSD treatments are provided in Table 1.

Responder rates

Unfortunately, many published clinical trials on the treatment of PTSD have not analysed results using the standard, preferred intention-to-treat (ITT) principle, but have based their findings on the subset of treatment completers, which can result in substantial bias.^{39–62–63} Reported recovery rates of 60–80% among treatment completers (eg, PE, CPT) decline to about 40% when ITT analysis is used, and cognitive behavioural therapy (CBT) has large dropout and non-response rates.⁶⁴ These limitations motivated the development of a new, brief exposure-based therapy known as ART.

ACCELERATED RESOLUTION THERAPY

ART is delivered in one to five, approximately 60 min sessions, typically over a 2-week period and requires no homework or skills practice. It aims to realign the way in which distressing memories and images are processed, so that they no longer trigger strong physical and emotional reactions. Sets of eye movements are used routinely throughout each session, and a technique called voluntary image replacement is used to rescript events and alter the physiological response to activation of targeted memories. Clients do not have to talk about their traumas or difficult life experiences with the therapist to achieve recovery. This feature of the protocol is particularly beneficial for

Table 1 Available therapies for post-traumatic stress disorder (PTSD)

Intervention	Description	Comment
Trauma focussed cognitive behavioural therapy (CBT)	Treatment therapies that include trauma-sensitive intervention, CBT strategies and psycho-education	Short term, usually 12–16 sessions US IOM and UK NICE approved ^{22 23 36}
Eye movement desensitisation and reprocessing (EMDR) ³²	Involves exposure and cognitive therapy, but with additional bilateral stimulation, usually in the form of eye movements	8–12 weekly 90 min sessions Dropout rates up to 36%; non-response rates 7–92% UK NICE approved ²²
Cognitive processing therapy (CPT) ^{37 38}	Emphasises changing a patient's maladaptive cognitions related to his or traumatic experience. Uses a writing narrative form of exposure. Includes group and couples psychotherapy	12 sessions (60–90 min) with practice of skills outside of sessions Dropout rates up to 29%; non-response rates 4–48% US VA often utilises a group approach for PTSD treatment in many of its inpatient and outpatient clinics. Empirical research results are mixed
Prolonged exposure therapy (PE) ^{28 39 40}	Repeated exposure to feared stimuli and memories surrounding the trauma. Aims for the patient to experience decrease in fear and an increase in mastery	10 sessions (~90 min each) with homework assignments Dropout rates up to 50%; non-response rates 20–67%; exacerbation rates 13–28% Majority of trial data analysed by treatment completers not intention-to-treat
Stress inoculation training (SIT) ⁴¹	Aims to help patients increase psychological resilience and manage their anxiety when confronting their traumatic memory or other trauma-related stimuli	
Virtual reality ⁴²	Simulation and computer-assisted programmes	Unique method to administer prolonged exposure that adds sensory details to enhance the exposure experience. With added cues, patients may process and cope with their trauma, and thereby better respond to treatment.
Medication-enhanced psychotherapy (MEP) ⁴³	Involves some combination of a drug with psychotherapy	Evidence suggests this approach is SSRI-augmented prolonged exposure although mixed research results to date.
Acceptance and commitment therapy (ACT) ⁴⁴	Empirically based psychological therapy that uses acceptance and mindfulness strategies mixed in different ways with commitment and behaviour-change strategies	
Skill training in affect and interpersonal regulation (STAIR) ⁴⁵	VA-supported evidence-based ancillary CBT (8 modules) for treatment of PTSD to learn skills in emotional regulation and interpersonal functioning	
Telemedicine ^{46 47}	Including behavioural activation	Shown to be safe, acceptable, and effective for improving PTSD symptoms when administered individually as prolonged exposure. May enhance completion of treatment
Trauma recovery and empowerment model (TREM) ^{48 49}	A group psychotherapeutic intervention specifically for women who have experienced trauma	It helps clients restructure the way they think about the trauma and it emphasises empowerment and skill-building to help clients cope with the daily and long-term effects of trauma. Studies are hopeful but inconclusive regarding the effectiveness of this intervention.
Dialectical behaviour therapy (DBT) ⁵⁰	A form of CBT that helps examine and rationalise thoughts and feelings that are counterproductive to recovery from trauma	It gives clients the skills to replace negative thoughts and actions with productive and healing thoughts and behaviours. DBT focuses on cognitive and behavioural aspects of trauma. The therapeutic work is done by keeping a journal.
Emotional freedom technique (EFT) ^{51–53}	Eight-phase therapy that assumes that emotional disturbance, including PTSD, is the by-product of disturbances in the body's energy field (meridian system)	Involves light manual stimulation of endpoints of traditional acupuncture meridians on the face, upper body and hands, while the patient focuses on the traumatic event. Exposure is achieved by eliciting the imagery, narrative and in vivo arousal related to the distressing memory. Two RCTs, with one showing similar results with EMDR
Neurofeedback (EEG biofeedback or neurotherapy) ⁵⁴	Intensive brain training exercises (eg, 10 weeks)	Focuses on excessive activation of the fear area of the brain, which is targeted for change through neuro-feedback brain training
Hypnosis ^{55–56}	Aim is to unlock stored emotion so that the trauma can be revisited and explored from a different perspective	
Acupuncture ⁵⁷	Based on the premise that the body is responsible for controlling particular brain areas that help control nervous functioning as well as mitigate stress levels	
Yoga ^{58 59}	Aims to decrease affect dysregulation and increase tension reduction activities	
Traumatic risk management (TRiM) ⁶⁰	Peer support programme aimed at identifying those requiring support and reducing stigma	
Outdoor activities and mental well-being ⁶¹	Utilising the biopsychosocial benefits of outdoor activities	Activities include working with Service animals to provide a sense of security, calming effects, and physical exercise that can positively effect quality of life. Equine-assisted psychotherapy incorporates horses experientially for emotional growth and learning. Defence Archaeological Group (DAG) advocates refer to improvement in self-worth, and a reduction in stigma and physical health.

IOM, Institute of Medicine; NICE, National Institute for Health and Care Excellence; RCT, randomised controlled trial; VA, Veteran's Administration.

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service members involved in classified operations, as well as those with particularly sensitive experiences, such as military sexual trauma.

ART consists of two components and the use of bilateral eye movements. In the first component, imaginal exposure (IE) is used whereby clients are asked to visualise the traumatic event. This is followed immediately by identification and diminishment (or eradication) of any distressing emotional or somatic symptoms that arise as a result of the traumatic memory. Reactivation of the targeted memory is elicited in short time periods using sets of eye movements alternating with noticing and resolving any somatic sensations or emotions that occur. During this process, the client, with clinician support, is helped to remain relaxed, alert, and will only return to the targeted memory after the physiological sensations and emotions are sufficiently processed for the client to feel comfortable moving on. Leading the client through sets of frequency regulated eye movements, while viewing or reactivating the memory and acknowledging self-awareness of physical and emotional sensations, the clinician directs the client towards at least two complete phases of exposure to the targeted memory. The second component after IE is imagery rescripting (IR). This involves the use of techniques whereby the client is instructed to visualise their traumatic scene and imagine changing (replacing) the imagery and sensory components of the scene with anything they choose (like the 'director' of a movie). As the new positive scene is substituted and reviewed, clients are asked to try to access the original distressing images.

Treatment of the traumatic scene is considered successful when only the rescripted scene can be accessed and the original scene can be recalled in detail without distress. Each ART session can be closed by asking the client to envision a bridge and then eliminate distressing images before crossing the bridge, which represents moving into the future and leaving the traumatic experiences in the past. During the components and sensation checks, clients are requested to follow the therapist's hand back and forth by moving their eyes from left to right, with 40 eye movements per set. Throughout this process, the client does not speak, but is rather 'watching' their original or newly imagined scene. This process of 'watching' the scene (during both IE and IR) while performing eye movements, is carried out multiple times, with the number of sets determined by the number required to complete the IE and IR components. Further details of the ART protocol have been published and are summarised in [Box 1](#).^{65 66}

ART and EMDR

The ART and EMDR techniques help clients reach their own solutions, through guided visualisations and eye movements that

process distressing memories and deal with feared triggers. Clinicians gauge improvements by monitoring anxiety levels and identifying held beliefs. Anxiety management techniques are embedded in both techniques, but there are distinct differences.

EMDR has a cognitive focus where clients prioritise the 10 most significant traumatic images, and associated thoughts and feelings linked to the traumatic event, and then work through each. There is free association regarding the emerging issues and these are addressed as they surface. The intent is to finish with a spontaneous positive cognition associated with the traumatic event, although EMDR's free association may result in clients being engaged in a recurrent or unresolved issue leading to distress between sessions.

ART is a systematic approach with more consistent delivery and focus on visual imagery and associated feelings. ART begins with the client's current presentation, regularly focusing on a body scan rather than thoughts, although positive cognitive changes occur during treatment. ART clients view the entire traumatic scene, or if the client cannot recall certain elements, engage with what they can remember. The ART protocol empowers clients to be in control of the process of recovery. Individuals do not have to verbalise the traumatic experience but simply view the event and note the physical sensations. A client's symptoms are related to a disruption of memory, and this simplified explanation may help reduce stigma, with feelings of personal failure being realigned as a memory problem. This provides a context for symptoms with permission to address issues previously avoided, and the patients choose when to address issues related to shame and guilt. There is no homework with ART.

Techniques exist to increase insight and encourage resolution of the client's current symptoms or problems. Where raised anxiety is related to a specific situation, such as being in a crowd, clients work through specific memories or recurring events through ART interventions such as 'A Typical Day'. In addition, metaphors can be employed to create distance from the intensity of the actual memory or problem, supporting individuals to arrive at a solution consistent with Gestalt theory. This shift in perspective facilitates engagement in the ART sessions and is reinforced through the calming effect produced through eye movements which engage the parasympathetic nervous system. ART concludes by actively installing a positive reframing, where the client can recount the event but no longer view it. They thereby usually leave each treatment feeling considerably better than when they started.

Assessment, stabilisation, contraindications and limitations

The same clinical considerations that apply to interventions such as EMDR apply to ART. A comprehensive biopsychosocial clinical assessment is imperative and individuals are assessed on clinical presentation, physical health, stability and self-harm risk. ART is offered when patients are sufficiently stable with adaptive coping strategies in place and motivation to undergo treatment. Willingness and personal resources to address distressful memories is a critical component of ART, yet some individuals may not be medically or psychologically stable, ready for change or even willing to address those memories. Individuals have a relationship with their memories and they may resist treatment because of secondary gains, for example following combat a client may feel reduction in pain is a betrayal of a deceased colleague. Secondary gains also include disability benefits, additional care and attention from others. Avoidance is a common and strong motivator for not engaging in treatment. Avoidance may be caused by fears of exacerbating symptoms, of increasing

Box 1 The stages of accelerated resolution therapy (ART)

- ▶ Frame a problem ('trauma') into an ART scene
- ▶ Process physiological sensations before initiation of therapy
- ▶ Imaginal exposure (first time through the scene)
- ▶ Imaginal exposure (second time through the scene)
- ▶ Desensitisation achieved
- ▶ Imagery rescripting (the 'director' intervention)
- ▶ Imagery rescripting (continued)
- ▶ Assessment and closeout

distress, of reinforcing guilt and shame, of being unable to cope or of never recovering. Likewise, individuals with personality disorders may not have sufficient motivation to directly tackle painful memories.

In research to date, individuals with major active substance abuse/dependence, active suicidal or homicidal ideation, personality disturbance or bipolar illness have been excluded from participation. There are specific clinical protocols for comorbidity and more severe disturbances, and careful assessment of clients is required including seeking a history of dissociation disorder, psychotic states, severe anxiety or depression, or being in psychological crisis. In addition, for conditions such as PTSD with substance abuse, there may be a requirement for appropriate conventional treatment to stabilise and build the psychological resources and skills needed to address memories with ART. Social circumstances with access to support and resources are important considerations, combined with self-harm assessment.

With ART, there is the possibility of experiencing intense emotions or physical sensations during or between treatment sessions and this may have safety implications. Physical health problems therefore require advice from medical colleagues concerning conditions such as cardiac/cerebrovascular disease, seizures and pregnancy. In common with other trauma-focused therapies, ART treatment sessions may produce an abreaction or dissociative experience. ART is designed to assist the client in finding immediate relief, and transient disassociation states can be addressed in session. Increasing awareness and discussion of dissociative experiences may improve the client's ability to tolerate difficult thoughts, images, sensations and emotions. Ocular problems can also inhibit ART. Also, practical issues include the lack of a published clinical manual and formal guidelines, which is a major limitation in helping therapists integrate ART into practice.

Clinician training

ART training for the basic protocol for registered clinical MH practitioners lasts for 3 days and includes supervised practice, after which clinicians are deemed to have sufficient knowledge and the tools to provide ART in clinical practice. Once they have completed 30 clinical sessions, clinicians may then complete 2 days of advanced ART training which includes instruction on the use of metaphors and applications to other conditions, such as substance abuse. A 2-day 'Enhancement' training programme is also available for broadening the clinical application of ART.

Treatment planning

ART employs the same core components as other recommended trauma-focused therapies and may be used for a variety of MH problems including PTSD. ART must be delivered by appropriately trained autonomous MH practitioners with clinical experience of established trauma-focused therapies. ART can be utilised efficiently as a standalone therapy or integrated into other treatment modalities as a specific brief, structured intervention. To address obstacles, therapists may borrow from other approaches and integrate these into clinical practice, including pharmacotherapy.

ART research

The USF have completed the only research exploring the effectiveness of ART, with their results showing that it can significantly reduce symptoms of psychological trauma in both civilians and US service members and veterans.⁶⁵⁻⁶⁷

In the veterans' randomised controlled trial conducted by Kip *et al*,⁶⁷ the clinical evaluation used for trial eligibility consisted of psychometric tests, mental status examination and clinical interview. After screening and enrolment, participants provided demographic data and completed a brief medical history questionnaire; in addition, baseline and post-treatment self-reported outcomes included a range of psychological measures with established reliability and validity. Participants were randomly assigned to treatment with ART or to an attention control (AC) group, usually commencing within 1 week. AC consisted of two 1 h sessions of fitness assessment and planning or career assessment and planning, as selected by the participant. For both conditions, the first session was devoted to current assessment and the second to developing an individualised plan to achieve goals. The rationale for providing the AC sessions was to measure the acute effect (on symptoms of PTSD and related comorbidities) of non-psychotherapeutic interactions, while at the same time minimally withholding the amount of time to treatment (crossover) with ART. It was anticipated that this approach would maximise recruitment and retention in the trial and minimise length of time of psychological distress. After two sessions of personal interaction in the AC condition, control subjects transitioned to receipt of ART and experienced a similar clinical treatment response as those who were initially randomly assigned to the ART intervention.

For participants randomly assigned to ART, the outcome measures were completed three times (at enrolment, after the final ART session, and at 3 months after treatment); those assigned to AC also completed the outcome measures after the final AC session. Before each session, the treating clinician inquired about the occurrence of adverse events, including the nature and intensity of each event, subsequent treatment actions, and judgment as to whether the event was related to use of ART. A mean of 3.7 sessions were delivered. ART appeared to be a brief, effective and safe method of exposure therapy for service members and veterans with symptoms of combat-related PTSD. Specifically, the mean (SD) reduction among scores on the 17-item Posttraumatic Stress Disorder Checklist - Military (PCL-M) was -17.2 (13.4) in the ART group compared to -2.5 (6.0) in the control group ($p < 0.0001$). Of note, the treatment completion rate was 90%. In ITT analyses that assumed (imputed) no treatment response for non-completers (some of whom were called up for active duty), the mean (SD) reduction in scores on the 17-item PCL-M was -15.4 (13.7) in the ART group compared to -2.1 (5.6) in the control group ($p < 0.0001$). Significant reductions in comorbidities associated with PTSD were observed for the ART intervention for measures of depression, anxiety, trauma-related growth and self-compassion, and the positive results were consistently maintained at 3-month follow-up.

These results, coupled with those from civilians treated with ART, suggest that ART should be considered as a treatment option for PTSD, including refractory PTSD in those who have experienced suboptimal response to existing first-line PTSD therapies. Conservative estimates indicate a substantial potential cost saving in treating PTSD. In addition, the substantial reductions in symptoms of both PTSD and depression is important given the high comorbid prevalence and symptom overlap of these two disorders.^{12 68 69} At 3-month follow-up in the ART randomised controlled trial, there were substantial reductions in self-reported aggression, a symptom notably present in servicemen with depression yet not included in international diagnostic depression classification systems.⁷⁰⁻⁷² There is also considerable societal interest due to domestic violence,^{73 74} and the greater

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self-compassion reported 3 months after completing ART. These findings suggest that ART has the potential to improve family relationships, an area encouraged for future research.

Dropout rates for approved first-line therapies are high, which is particularly germane given that US Iraq and Afghanistan veterans have been reported to drop out from treatment twice as frequently as Vietnam veterans.⁷⁵ As the current US Department of Defense/Department of Veterans Affairs MH system is struggling to meet the high current need for PTSD treatment,⁷⁶ there is a premium on delivering therapy with approaches that maximise successful treatment initiation and completion.⁷⁷

US engagement

Implementation of ART in the USA has been sporadic and limited to date, for a number of reasons. As only two empirical studies of ART have been completed, there is a reluctance to implement it some treatment facilities. Additionally, in the USA there is substantial investment in and commitment to treating military PTSD with conventional PE and CPT protocols. This is partly due to directives and performance metrics embedded in the US VA system, and to financial influences. Specifically, since 2008, approximately \$80 million in US government funding has been earmarked for two military PTSD-related research programmes known as the South Texas Research Organizational Network Guiding Studies on Trauma and Resilience (STRONG STAR) programme⁷⁸ and more recently, the Consortium to Alleviate PTSD (CAP).⁷⁹ Both programmes conduct a range of studies that very strongly emphasise variations of PE and CPT, and to date, have not expressed an interest in evaluating ART or several other emerging therapies. At the clinical level, military clinicians have been trained in ART at Fort Belvoir Community Hospital and at Fort Benning, home of the US Army Infantry and Rangers. In addition, there has been some clinical experience with ART at the Walter Reed National Military Medical Center. The number of cases treated to date with ART (for PTSD and other psychological conditions) in the USA is unknown, but is estimated at more than 10 000 in the civilian sector, based on the number of civilian clinicians trained, and at several hundred but less than 1000 in the military sector.

Future funding and research

Given the substantial promise of ART, research protocols are being developed in the USA and submitted to potential funding organisations. One of the key priorities is to conduct a head-to-head randomised controlled trial of ART versus a first-line therapy for PTSD (PE/CPT/EMDR). There is also a need for (a) mechanistic studies, both physiological and brain-based, to examine and elucidate how ART appears to resolve trauma so quickly and (b) cost-effectiveness studies on ART for other patient populations such as family members of service members and veterans with PTSD, with clinical indications including depression, substance abuse, chronic pain and sleep dysfunction. While these studies are being initiated from the USF, research collaborations are strongly encouraged, and to date, some clinicians have been trained in ART in Alberta, Canada and Stirling, Scotland. The positive empirical evidence is compelling, and UK researchers need to undertake research into a therapy that has significant promise for improving the lives of people with a number of MH problems. The armed forces is one sector that offers the potential for comparative trials. However, equally important are the veteran population, emergency services personnel and those subjected to violence. ART shows promise of

rapid improvement and also potentially can help combat the use of secondary coping mechanisms such as alcohol or drug misuse.

A soldier's personality affects their ability to cope with military life and their propensity to develop MH disorders such as depression. In addition, military personnel often face unique multi-factorial stressors that may be incremental/accumulative in nature. Operational stressors may lead to the development of PTSD and have been frequently reported to be linked to suicide. There is little empirical information concerning the MH pathway of veterans from discharge to accessing civilian support: veteran MH problems are often automatically assumed to be aligned to active service, but further elucidation of the stressors that lead to a MH referral is required. There is also a need to address the poor understanding of military stressors, and their relationships with depressive and other MH symptoms, and to raise awareness of gender imbalance regarding to access and treatment. Research on family dynamics and how soldiers cope once discharged is required.

CONCLUSION

For MH problems in both the serving and reserve populations, proactive primary healthcare should initially focus on positively manipulating the environment and tackling contributing stressors. Problematic issues should be addressed within an appropriate multi-layered assessment, with the aim of supporting and treating patients locally. Should problems persist, then ART provides a potential first-line, brief psychotherapeutic therapy. ART is an intervention protocol that recognises the unique challenges of war and conflict zones, and if readily accessible in a culturally competent manner, has significant benefits. ART shares the same theoretical principles and core components of trauma-focused psychotherapies with A-level evidence, such as EMDR. However, ART offers the potential for rapid, safe and permanent resolution of trauma-related distress in a short period of time. This represents clear benefits for patients in quickly resolving distressing symptoms, for clinicians in improving clinical workflow and for the military by presenting an opportunity to treat service personnel in war zones.

Future comparative effectiveness studies of ART versus other first-line therapies appear warranted, along with mechanistic studies to examine how the IE and IR components of ART may use the reconsolidation window to change traumatic images and sensations, thus leading to resolution of symptoms of PTSD and other MH disorders. ART presents an opportunity to provide interventions and resolutions in theatre, which may positively enhance the fighting capability of deployable forces.

Contributors AF has overall responsibility for the article. AF, KK, DH and SM undertook this as a joint project and were involved in all stages of article design, including conception, literature search including interpretation, method, and writing the article. LR is the founder of ART and provided direction regarding the ART-specific sections. LR critically reviewed the paper and acts as a guarantor. KK and DH are the ART subject matter experts and US leads on this research and act as guarantors. CH and MT contributed to the literature search, paper construction and development (in particular from a UK perspective), suggestions regarding future implementation, critical review and quality control. All authors have provided final approval of the submission. This article has been approved for publication by the British Armed Forces Medical Director for Research.

Competing interests None declared.

Provenance and peer review Not commissioned; externally peer reviewed.

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J R Army Med Corps published online July 3, 2015

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