

ACCELERATED RESOLUTION THERAPY - AN INNOVATIVE MENTAL HEALTH INTERVENTION TO TREAT POST TRAUMATIC STRESS DISORDER

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Abstract

Post Traumatic Stress Disorder (PTSD) is a disabling trauma and stress-related disorder that may occur after experiencing a traumatic event, and that 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 psychotherapeutic intervention that provides fast and lasting resolution to MH problems, such as PTSD. ART can achieve a positive end state in 1 to 5 sessions, typically over a 2-week period and requires no homework, skills practice or repeated exposure to targeted events.

Initial research has demonstrated that ART interventions can significantly reduce symptoms of psychological trauma in both civilians and U.S. service members and veterans. These results suggest that ART be considered as a treatment option for refractory PTSD, meaning those who have experienced suboptimal response from existing first-line therapies endorsed for PTSD. Conservative estimates indicate a substantial potential cost savings of treatment of PTSD.

Given the substantial promise of ART, within the US there are a large number of research protocols being developed and submitted to a range of potential funding organizations. The growing positive empirical evidence is compelling, and UK researchers need to undertake research into ART that has significant promise for improving the life's of people suffering with a number of MH problems. The Armed forces is one sector that offers the potential for comparative international trails. However, equally important are Veterans, emergency services personnel and those subjected to violence. ART can also combat the use of secondary coping mechanisms such as alcohol or drug misuse.

ART is an intervention that can help personnel traumatized by the unique challenges of War and conflict Zones by providing brief psychotherapy in a readily accessible and culturally-competent manner. Excitingly, ART presents an opportunity to provide interventions and resolutions in theatre, thus positively enhancing the fighting capability of the deployable force.

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INTRODUCTION

Conflict and war, with the requirement to provide clinical and nursing care to injured young men and women have shaped health and healthcare practice throughout the world. Many of the mental health (MH) interventions utilised within civilian practice started life as an innovative prototype aimed at supporting and treating Soldiers, particularly at times of heightened conflict. Accelerated Resolution Therapy (ART) is an emerging intervention that draws together key components from other evidence-based and accredited MH interventions, and then adds original elements. The aim of ART is to provide fast and lasting resolution to MH problems, such as Post Traumatic Stress Disorder (PTSD), but also Depression and Anxiety-related disorders. A tangible advantage is that ART can achieve a positive end state in 1 to 5 sessions and without the need for homework or medications.

ART studies undertaken by academics at the University of South Florida (USF) have produced positive results, with their findings being acknowledged within US Congress and 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. These opportunities have potential use in both firmbase and deployments within the British Armed Forces.

British Military Mental Health Services

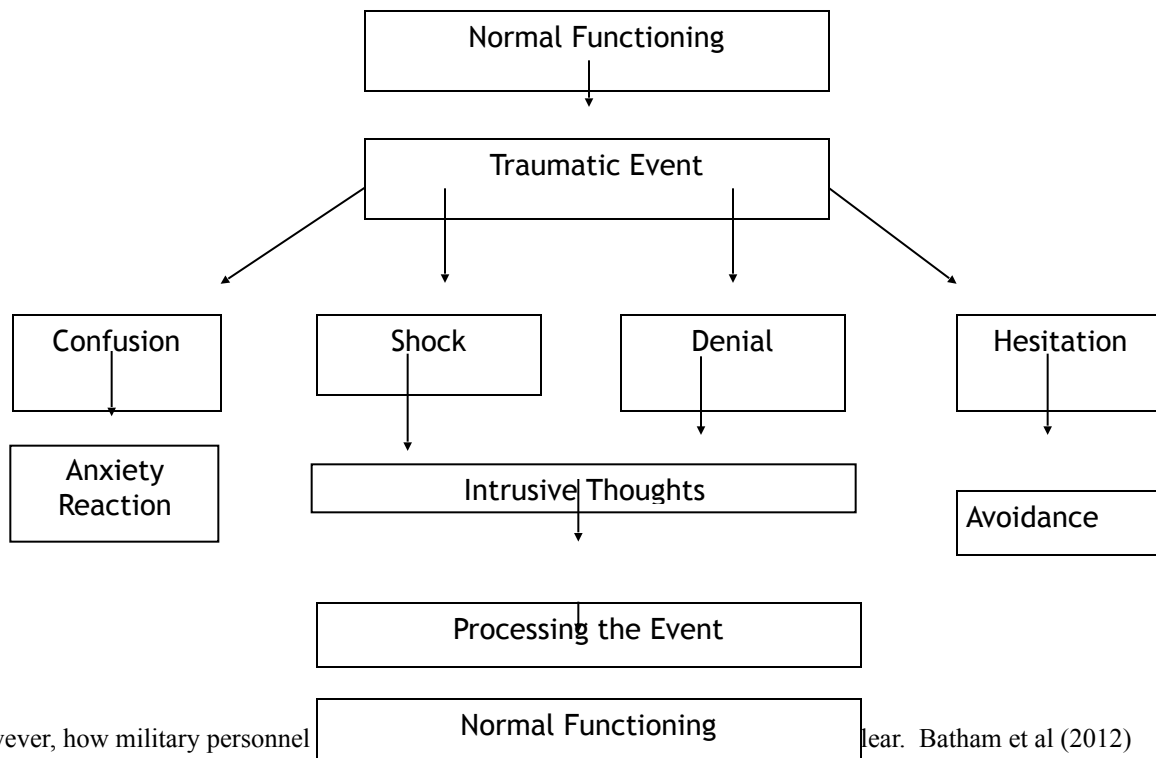
The British Defence Mental Health Services (DMHS) aim to maximise the psychological support to Service personnel by providing immediate Mental Health (MH) provision with the expectation that staff will return to duty. This objective supports the operational imperative of producing a capable workforce, able to undertake their military duties without MH problems. This doctrine originates from World War 1 (WW1) Military MH (MMH) interventions, when it became apparent that the difference between success and defeat on the battlefield was the number of healthy combatants. These young men faced new military technology carrying significant payloads for harm and destruction, including high explosive artillery pieces, mines, chemical warfare and tanks; exposing service members to types of conflict never previously experienced. (Hart, 1934) They witnessed horrendous mutilation and deaths of friends and colleagues, leading to Shell shock, or ‘neurasthenia’, becoming a recognised MH condition. (Myers, 1915).

WW1 produced an urgent requirement to support and treat operationally related MH problems. Emerging MH treatment models directed the use of reassurance, regular warm baths, systematic hypnosis, diversion techniques, and access to welfare, support and recreation (Mott, 1916). Special attention was paid to maintaining morale, and soldiers were encouraged to apply common sense to the alleviation of their distress. It was recognised that many brave soldiers who had received the Victoria Cross had nonetheless presented with shell shock (Williamson, 1917) but that positive wellbeing could be restored and therefore, the capacity for active service again. This brought about benefits as traumatised combatants were provided with far greater psychological support than previously with the aim of returning them to active duties on completion of their treatment (Salmon, 1919). Gradually, a structure emerged for MMH practice of proximity, immediacy and expectancy (PIE) (Salmon, 1917; O’Brien, 1998). This continues to form the basis for military psychiatry in the treatment of combat-induced MH disorders and stress.

Throughout the 19th century, the progressive understanding that warfare causes psychological problems is reflected in international studies reporting common physiological and mental symptoms in soldiers. Epidemiological trends were identified such as that psychological trauma increases as a nation's performance on the battlefield deteriorates and the greater the stressor and the risk of death, the greater the risk of traumatic psychological problems (Wessely, 2005). Lessons learned from managing the welfare of military personnel have influenced assessments and interventions in general NHS mental health services (Trimble, 1985). Clinical initiatives such as assertive outreach, community based care, crisis intervention (Artiss, 1997) and group psychotherapy (Harrison and Clarke, 1992) have their origins in the First and Second World Wars. Current operational MH support is based on community care with a focus on risk management, risk assessment and patient maintenance. Patients who require a MH intervention are evacuated from theatre (Finnegan et al, 2014a).

Psychological Reactions to Traumatic Events

After experiencing a traumatic event, each person goes through a similar psychological reaction. Post traumatic MH problems occur when the depth and periodicity of the intrusive occurrence such as uninvited images and recollections); the levels of avoidance of stimuli connected with the traumatic incident such as places and people, and the extent of hyper-vigilance, such as increased arousal, do not reduce over time. This conventional response stops the individual from performing normally, and remains chronic unless successfully treated [Brom et al, 1989]. (Figure 1) [Finnegan, 1999].



However, how military personnel deal with traumatic incidents is a matter of speculation. Batham et al (2012) reported that British military medical personnel employed in a forward medical unit in Afghanistan appeared to compartmentalise their cognitive processes and disengage from dealing with traumatic incidents. These well trained and motivated volunteers were aware that their clinical practice carried personal risk. However, they appeared to put their own needs aside, and their focus and concerns were purely on treating casualties, some of whom were known. There were many stressors, and the significant impact on these clinical personnel were reflected with respondents experiencing shock, frustration, anxiety, distraction, confusion and fear. However, they appeared to defer any distressing reaction; although how this was later processed is a matter of speculation. One theory is that clinical experience enhanced with appropriate pre-tour education, training and selection resulted in well prepared personnel

who could predict many of these occurrences and accomplish their duties without experiencing negative psychological problems. Alternatively, they may find sharing their reactions with colleagues helped them process the event. The study reported that these clinicians proactively use unstructured group debriefings for peer support after the events, and the use of reflective diaries seemed beneficial. However, there remains the risk that this form of compartmentalisation is a coping mechanism enabling individuals to put aside the thoughts and feelings associated with the disturbing events that they experienced, deferring processing of these traumatic incidents until the tour is completed. It is then that they attempt to resolve these issues within a secure environment, and the negative MH problems may occur.

PTSD & Military Mortality Rates

Post-traumatic stress disorder (PTSD) is a disabling trauma and stress-related disorder that may occur after experiencing a traumatic event, and that evokes a combination of intrusion and avoidance symptoms, negative alterations in cognitions and mood, and alterations in arousal and reactivity. In a 3 year review of every UK Military MH hospital admission, PTSD figures accounted for 7% of primary admissions and 3% of patients with a single diagnosis (Finnegan, 2011), findings reflected in other UK studies [Iversen & Greenberg, 2009; Iversen et al, 2009]. 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 nontreatment seeking samples (Thomas et al, 2010; Kok et al, 2012; Ramchard et al, 2010; Richardson et al, 2010). The US epidemiological data estimate that military personnel afflicted with PTSD is likely in the hundreds of thousands, and those exposed directly to combat are at significantly higher risk (Leadmann et al, 2009; Smith et al, 2008). To support this tremendous treatment need, the U.S. Congressional Budget Office estimates an average annual treatment cost per member of \$8,400 within the Veterans Administration (VA) system, a cost 4 times higher than those treated without PTSD or traumatic brain injury. (Congress of USA, 2013).

Combat operational trauma has a unique presentation. It is multidimensional and extensive (Litz, 2008) and witnessing intense human suffering and cruelty, killing others in the line of duty, or perpetrating non-sanctioned violence (Steenkamp et al, 2011) leads to prolonged periods of stress, anxiety, and hardship (King et al, 1995) There are reports of associated guilt and shame from moral injury (Litz et al, 2009) and prolonged grief disorder (Neira & Litz, 2004; Prigerson et al, 2009). In the US, the Institute of Medicine (IOM) reports that trauma-focused cognitive behavioural therapy (CBT) is rated as the only first-level treatment for PTSD (IOM, 2012) whilst the UK also includes EMDR (NICE, 2005). Pharmacotherapy has accumulated some empirical support.(Stein et al, 1996; Stein et al, 2009)

Treatment of PTSD

National guidelines (Foa et al, 2008, Forbes, 2010, Department of Affairs, 2004; APA, 2004, NICE, 2005) provide broad agreement on the use of trauma-focused interventions as first-line treatment for adults with PTSD. Core components of trauma focussed therapy are narration, cognitive restructuring, *in vivo* exposure, stress inoculation including anxiety management relaxation skills, and a psycho-education component. These therapies are designed to minimize intrusion, avoidance, and arousal symptoms of PTSD through combinations of re-experiencing and reframing trauma-related memories and emotions, and teaching methods of managing trauma-related stressors (IOM, 2013) The most frequently endorsed and practiced therapies for the treatment of PTSD among US veterans are prolonged exposure (PE) therapy, (Ballenger et al, 2004; Foa et al, 2007; Nemeroff et al, 2006) cognitive processing therapy (CPT), (Ballenger et al, 2004; Resick & Schnicke, 1992; Resick et al, 2012) and eye movement desensitization and reprocessing (EMDR). (Nemeroff et al, 2006; Friedman, 2003; Shapiro, 2001) which is also endorsed in the UK (NICE, 2005). The US Veterans Administration (VA) has mandated that all veterans treated for PTSD have access to either PE or CPT. (VA Office of Inspector General, 2013). A list of common PTSD treatments are in Table 1.

Ser	Intervention	Detail	Reference
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1	Trauma Focussed CBT*	Treatment Interventions that include trauma-sensitive intervention, cognitive behavioral therapy strategies and psycho- education.	Short term – usually 12 to 16 sessions.	*US IOM and UK NICE approved. Institute of Medicine (2007) NICE (2005)
2	Eye Movement Desensitization & Reprocessing (EMDR) **	Involves exposure and cognitive therapy, but with additional bilateral stimulation, usually in the form of eye movements	8 to 12 weekly 90-minute sessions Dropout rates up to 36%; Non-response rates between 7-92%	1Friedman et al, 2003 **UK NICE approved
3	Cognitive Prolonged Exposure (CPT)	Emphasizes changing a patient’s maladaptive cognitions related to his or traumatic experience. Uses a writing narrative form of exposure.	12 sessions (60-90 minutes) w/practice of skills outside of sessions Dropout rates up to 29% Non-response rates 4-48%	Resick & Schnicke, 1993
4	Prolonged Exposure Therapy (PE)	Repeated exposure to feared, yet safe, stimuli and memories surrounding the trauma. Aims for patient to experience decrease in fear and an increase in mastery.	10 sessions (~90 minutes each) with homework assignments Dropout rates up to 50% ; Non-response rates 20-67%; Exacerbation rates 13-28% Majority of trial data analyzed by treatment completers (not ITT)	Foa et al, 2007 Bisson et al, 2007 Schnurr (2008)
	Stress Inoculation Training (SIT)	Aims to help patients increase psychological resilience and manage their anxiety when confronting their traumatic memory or other trauma-related stimuli.		Meichenbaum (1996)
	Cognitive Processing Therapy (CPT)	Group and Couples Psychotherapy.	US VA often utilizes group approach for PTSD treatment in many of its inpatient and outpatient clinics. Empirical results are mixed.	Youngner et al (2013)
	Virtual Reality.	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.	Cukor et al (2009)
	Medication-Enhanced Psychotherapy (MEP).	Involves some combination of a drug with psychotherapy	Evidence suggest this approach is SSRI-augmented prolonged exposure although mixed results to date.	

	Acceptance and Commitment Therapy (ACT).	Empirically-based psychological intervention that uses acceptance and mindfulness strategies mixed in different ways with commitment and behaviour-change strategies		Hayes et al, 1999
	Skill Training in Affect and Interpersonal Regulation (STAIR).	VA-supported evidence-based ancillary CBT (8 modules) for treatment of PTSD to learn skills in emotional regulation and interpersonal functioning.		Cloitre et al, 2002
	Telemedicine.	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.	Freuh et al 2007 Tuerk et al 2010
	Trauma Recovery and Empowerment Model (TREM)	A group psychotherapeutic intervention focused specifically for women who have experienced trauma.	It helps clients restructure the way they think about the trauma and it emphasizes empowerment and skill-building to help clients cope with the daily and long term effects of trauma. Studies are hopeful but inconclusive as to the effectiveness of this intervention.	Fallot et al, 2014 Trauma Recovery and Empowerment Model
	Dialectical Behaviour Therapy (DBT)	A form of CBT that helps examine and rationalize thoughts and feelings that are counterproductive to trauma recovery.	It gives clients the skills to replace negative thoughts and actions with productive and healing thoughts and behaviors. DBT focuses on cognitive and behavioral aspects of trauma. The therapeutic works is done through keeping a journal.	Landes et al, 2013
	Emotional Freedom Technique (EFT).	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 vs. EMDR showing similar results.	Craig 1999 Church et al, (2013) Karatzias et al 2011
	Neurofeedback (EEG biofeedback or neurotherapy).	Intensive brain training exercises (e.g. 10 weeks)	Focuses on excessive activation in fear network part of the brain. That area is targeted for change through neuro-feedback brain training.	Othmer & Othmer 2009
	Hypnosis.		Aim is to unlock stored emotion so that the trauma can be revisited and explored from a different perspective.	Speigal 1988, Speigal 1989

	Acupuncture.		Based on premise that the body is responsible for controlling particular brain areas that help control nervous functioning as well as mitigate stress levels.	Hollifield et al, 2007
	Yoga.		Aims to decrease affect dysregulation and increase tension reduction activities. Yoga Warriors International: http://www.yogawarriors.com/	Emersen et al, 2009; Cabral et al (2011)
	Traumatic Risk Management (TRiM)			Jones, N., Roberts, P & Greenberg, N (2003)
	Outdoor Activities and Mental Wellbeing	Utilising the biopsychosocial benefits for outdoor activities.	Activities include working with <u>Service animals</u> to provide a sense of security, calming effects, and physical exercise that can positively effect quality of life. <u>Equine-Assisted Psychotherapy</u> . Incorporates horses experientially for emotional growth and learning. <u>Defence Archaeological Group (DAG)</u> Advocates refer to improve in self-worth, reduction in stigma and physical health	Nimenko & Simpson (2013)

Table 1. Intervention for Post-Traumatic Stress Disorder and other MH problems including Depression and Anxiety related disorders.

Despite the large array of treatment approaches, 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. To illustrate, PE consists of 10 sessions, approximately 90 minutes each, with extensive homework assignments that require 1.5 to 2 hours to complete (Resick et al, 2002). This equates to an approximate 30 to 35 hours of actual treatment commitment over several weeks, and treatment success is far from absolute. In clinical trials of PE, dropout rates of up to 50% have been reported, (Hembree et al, 2003; Schnurr et al, 2007; Schottenbauer et al, 2008) along with nonresponse rates between 20% and 67% (Schottenbauer et al, 2008; Minnen & Hagens, 2002). CPT is delivered over 12 sessions, approximately 60 to 90 minutes each, with additional assigned practice of skills outside of the therapy sessions. (Resick & Schtick, 1993). Dropout rates are up to 29%, (Hembree et al, 2003; Schottenbauer et al, 2008) and nonresponse rates between 4% and 48% (Schottenbauer et al, 2008) EMDR consists of 8 to 12 weekly 90-minute sessions, with reported dropout rates of up to 36% and nonresponse rates between 7% and 92% (Friedman, 2003). Exacerbation rates have been reported to range between 13% and 28% for PE and 5% and 10% for cognitive behavioural therapy. (Schottenbauer et al, 2008). In the US, interventions for operational related MMH problems are associated with significant levels of veterans dropping out. Reported rates of recovery of 60% to 80% among treatment completers decline to about 40% when non-completers are taken into account among veterans who begin treatment for PTSD with psychotherapy or medication (Hoge, 2011).

Responder Rates

Unfortunately, the majority of published PE clinical trials in the treatment of PTSD have not analyzed results by use of the standard, preferred ITT principle, and instead, by the subset of treatment completers, which can result in substantial bias (Bisson et al, 2007; Schnurr, 2008. Hoge (2011). Reported recovery rates of 60% to 80% among treatment completers (e.g., PE, CPT) decline to about 40% using ITT analyses and CBTs have large dropout and nonresponse rates (Schottenbauer et al, 2008). These limitations motivated the development of a new, brief exposure-based therapy known as Accelerated Resolution Therapy (ART).

ART

ART is delivered in 1 to 5 approximately 60 minute sessions, typically over a 2-week period and requires no homework or skills practice. ART 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 service members involved in classified operations, as well as those with particularly sensitive traumas, such as military sexual trauma.

ART consists of 2 components and the use of bilateral eye movements. In the first component, Imaginal Exposure (IE) is used whereby clients are asked to recall (verbally or nonverbally) the traumatic event while focusing on physiological sensations, thoughts, and emotions. During this process, the client, with clinician support, is helped to remain relaxed, alert, whilst they are exposed to reactivation of the targeted memory for a short 30 to 45 second period. This is followed by identification and diminishment (or eradication) of any distressing emotional or somatic symptoms. This occurs by directing the client to hold his/her awareness of the symptoms while engaging in clinician-directed eye movements. By 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 toward two complete phases of exposure to the targeted memory. The second component is Imagery Rescripting (IR). This involves the use of techniques in which the client is instructed to visualize their traumatic scene and imagine changing (replacing) the imagery and sensory components of the scene to 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. See Table 2.

Components of ART TABLE 2

1	Frame a problem (“trauma”) into an ART scene
2	Process physiological sensations before initiation of therapy
3	Imaginal exposure (first time through the scene)
4	Imaginal exposure (second time through the scene)
5	Desensitization achieved
6	Imagery rescripting (the “Director” intervention)
7	Imagery rescripting (continued)
8	Assessment and closeout
Accelerated Resolution Therapy Process	
An emerging form of psychotherapy with roots in existing evidence-based therapies, but shown to achieve benefits much more rapidly (usually within 1-5 sessions).	

Treatment of the traumatic scene is considered successfully complete when only the rescripted scene can be accessed and the original scene can be recalled in detail without distress. A primary way that each ART session is closed is to ask the client to envision a bridge, and then eliminate distressing images before crossing the bridge, which represents moving on. Throughout the components and sensation checks of the therapy, clients' are requested to follow the therapist's hand back and forth moving their eyes from left to right, with 40 eye movements per set. During this process, the client is not speaking, but rather "watching" their original or newly imagined scene. This process of "watching" the scene (during both IE and IR) while performing eye movements is performed multiple times, with the total sets of eye movements determined by the number required to complete the IE and IR components. Further details of the ART protocol have been published and summarised in Table 2. (Kip et al, 2012; Kip et al, 2013a).

Clinician Training

ART training for the basic protocol for registered clinical MH practitioners lasts for 3 full days and includes supervised practice. After the completion of 30 clinical sessions, clinicians then complete 2 days of advanced ART training which includes training on use of metaphors and applications to other conditions, such as substance abuse. A two-day "Enhancement" training program is also available for broadening the clinical application of ART. Of note, after the 3-day Basic training in ART, clinicians have sufficient knowledge and the tools to begin immediate delivery of the ART protocol in their clinical practice.

ART Research

Kip et al (2012, 2013a, 2013b) have completed the only research exploring the effectiveness of ART, with results that demonstrate that ART interventions can significantly reduce symptoms of psychological trauma in both civilians and U.S. service members and veterans (Kip et al, 2012; Kip et al, 2013a, Kip et al, 2013b). In Kip et al, 2013b Veterans' randomized controlled trial, clinical evaluation used for trial eligibility consisted of psychometric tests, mental status examination and clinical interview to determine study eligibility. After screening and enrolment in the trial, participants completed a demographic and brief medical history questionnaire. In addition, baseline and post-treatment completion of self-reported outcomes included a range of psychological measures with strong established reliability and validity.

Participants were randomly assigned to treatment with ART or an Attention Control (AC) regimen control group, usually commencing inside 1 week. AC consisted of two 1-hour sessions of fitness assessment and planning or career assessment and planning, as selected by the participant. For both control regimens, the first session was devoted to current assessment and the second session to developing an individualized 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 maximize recruitment and retention in the trial and minimize time of psychological distress.

For participants randomly assigned to ART, the outcome measures were completed 3 times; at enrollment, after the final ART session, and at 3 months post-treatment. For participants randomly assigned to AC, the outcome measures were completed 4 times; at enrollment, after the final AC session, after the final ART session (i.e., after crossover to ART), and at 3 months post-treatment. Occurrence of adverse events was determined by inquiry from the treating clinician before each session 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 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%, and 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 be considered as a treatment option for refractory PTSD, meaning those who have experienced suboptimal response from existing first-line therapies endorsed for PTSD. Conservative estimates indicate a substantial potential cost savings of treatment of PTSD. In addition, the substantial reductions in symptoms of both PTSD and depression is important given the high co-morbid prevalence and symptom overlap of these two disorders (Hankin et al, 1999; O'Donnell et al, 2004, Finnegan, 2011). In the ART randomized controlled trial at the 3-month post-treatment follow-up, there were substantial reductions in self-reported aggression, a symptom notably present in depression servicemen yet not within international diagnostic depression classification (American Psychological Association, 2013; World Health Organisation, 1996; Finnegan et al, 2014b). There is also considerable societal interest due to domestic violence (Finnegan, 1995; Bryne & Riggs, 1996), and the greater self-compassion reported 3 months after completing ART. These findings suggest that ART has the potential for improving family relations, an area encouraged for future research.

As noted above, dropout rates for approved first-line interventions is high, and is particularly germane given that US Iraq and Afghanistan veterans have been reported to dropout from treatment twice more frequently than Vietnam veterans. (Erbes et al, 2009). As the current US DoD/VA mental health system is substantially challenged to meet the very high current PTSD treatment need (APA,2007) there exists a premium on delivering therapy with approaches that maximize successful treatment initiation and completion (Jakupcak & Varra, 2011).

US Engagement

Implementation of ART in the US has been sporadic and limited to date. This is based on a number of factors. First, only two empirical studies have been completed to date on ART which results in reluctance for use within some treatment facilities. Second, there is a substantial investment and commitment to treatment of military PTSD in the US by use of conventional PE and CPT protocols. Some of this preference is mandated through directives and performance metrics that are embedded directly within the US VA system. In other instances, there are financial influences. Specifically, since 2008, approximately \$80M in US government funding has been earmarked to two programs of military PTSD-related research known as the South Texas Research Organizational Network Guiding Studies on Trauma and Resilience (STRONG STAR) program (<http://delta.uthscsa.edu/strongstar/>), and more recently, the Consortium to Alleviate PTSD (CAP). Both programs conduct a range of studies that have a very strong emphasis on variations of PE and CPT, and to date, have not expressed an interest in evaluation of ART or several other emerging therapies. At the clinical level, training of military clinicians in ART has occurred on multiple occasions at Ft. Belvoir Community Hospital and at Ft. Benning, home of the US Army Infantry and Rangers. In addition, there has been representation from Walter Reed Army Institute of Research. In the US, the number of cases treated to date with ART (for PTSD and other psychological conditions) is unknown, but is estimated at more than 10,000 within the civilian sector and several hundred but less than 1,000 with the military sector.

Future Funding and Research

Given the substantial promise of ART, within the US there are a large number of research protocols are being developed and submitted to a range of potential funding organizations. These can be summarized as head-to-head randomized controlled trials of ART versus first-line therapies for PTSD (PE/CPT/EMDR), mechanistic studies, both physiological and brain-based, to examine and ideally elucidate how the ART protocol appears to resolve trauma so quickly, and lastly, cost-effectiveness studies and applications of ART to other patient populations (e.g. family members of service members and veterans afflicted with PTSD) and clinical indications including substance abuse, chronic pain, and sleep dysfunction. Whereas these studies are being initiated from the University of South Florida, research collaborations are strongly encouraged, and to date, a limited number of 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 an intervention that has significant promise for improving the lives of people suffering 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 on a number of levels. ART can result in rapid improvement and therefore help combat the use of secondary coping mechanism such as alcohol or drug misuse.

Conclusion

Military personnel often face unique multi-factorial stressors that are often incremental/accumulative in nature, and a soldier's personality impacts on their ability to cope with military life, and their propensity for developing MH disorders such as depression. In addition, unique operational stressors may lead to the development of PTSD, and there are numerous reports of operational stressors being linked to suicide. With Veterans, there is little empirical evidence denoting an individual's MH pathway from discharge to accessing civilian support. Often, Veteran MH problems are automatically assumed to be aligned to active service, but further illumination of the stressors that lead to a MH referral is required. The implications are a need to address the poor understanding of military stressors; their relationships to depressive and other MH symptoms and a need to raise higher awareness of gender imbalances with regard to access and treatment. Research options such as exploration of family dynamics and how soldiers cope once discharged is required.

For MH problems in both the serving and reserve populations; proactive primary healthcare treatment 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 intervention. ART as an intervention protocol recognises the unique challenges of War and conflict Zones, if readily accessible in culturally-competent manner has significant implications.

Future comparative effectiveness studies of ART versus 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, and subsequently lead to resolution of symptoms of PTSD and other MH disorders. Excitingly, ART presents an opportunity to provide interventions and resolutions in theatre, which may positively enhance the fighting capability of the deployable force.

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