Evidence Compass

Technical Report

What are effective interventions for veterans who have experienced moral injury?

A Rapid Evidence Assessment

April 2015

Australian Government
Department of Veterans' Affairs

Disclaimer

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Please forward any comments or queries about this report to EvidenceCompass@dva.gov.au

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List of Abbreviations

ACT	Acceptance and commitment therapy
CBT	Cognitive behavioural therapy
CPT	Cognitive processing therapy
DVA	Department of Veterans' Affairs
EMDR	Eye Movement Desensitization and Reprocessing
PE	Prolonged exposure
PTSD	Posttraumatic stress disorder
REA	Rapid Evidence Assessment

Executive Summary

- Military personnel are often confronted with situations whereby under extreme conditions, they make decisions, take action or exposed to events that challenge their ethical and moral beliefs. Transgressions of ethical and moral beliefs and inner conflict can arise from such circumstances and lead to potential mental health problems. Moral injury is defined as a psychological state that arises from events and experiences associated with perpetuating, failing to prevent or bearing witness to inhumane or cruel actions, or learning about acts that transgress deeply held moral beliefs and expectations. Events associated with such transgressions and internal conflict leading to a moral injury can include acts of commission or omission, behaviours of others in the unit, bearing witness to human suffering or horrific acts of violence perpetrated by oneself or by others.

- Moral injury is in early stages of concept development and the construct itself is fairly new within the military/veteran literature. Research indicates that in addition to symptoms already associated with posttraumatic stress disorder (PTSD), additional features of moral injury can manifest itself as shame, guilt, loss of trust, anger, demoralisation, self-handicapping behaviours, and desire for self-harm. Hence, moral injury is a useful concept that addresses a wider range of combat-related experiences beyond threat and loss and clinical presentations not fully encompassed by current diagnostic criteria for psychopathology such as PTSD or its related features.

- The aim of this rapid evidence assessment (REA) was to examine the evidence and efficacy of interventions targeting moral injury in military personnel and veterans. Psychological and interdisciplinary therapies that may be appropriate in targeting symptoms associated with moral injury were identified, including: cognitive behavioural therapy (CBT); cognitive processing therapy (CPT); eye movement desensitisation and reprocessing (EMDR); prolonged exposure; acceptance and commitment therapy (ACT); adaptive disclosure; and spiritual, religious and social treatments.

- Moral injury research is in early stages and we know little about its phenomenology, prevalence, or trajectories in military or veteran personnel. This REA identified only two studies that investigated the effectiveness of an intervention for moral injury. The evidence for treatments targeting moral injury in military personnel and veterans received an “Unknown” ranking (i.e. insufficient evidence of beneficial effect).

Currently, very little is known about the degree to which psychological or other treatments are able to address morally injurious symptoms.

- Future research is needed to identify and refine our understanding of the nature, prevalence and trajectories of moral injuries, and to develop and test psychometrically sound instrumentation for assessing potentially morally injurious events and moral injury as an outcome. It is also important to continue to research whether new interventions specifically targeting moral injury are effective, and if current evidence-based treatments for posttraumatic stress and other mental health problems that attenuate feelings of shame and guilt can be equally applied to target the broad array of features associated with moral injury in the presence or absence of posttraumatic stress disorder. In addition, it is also necessary to investigate the effectiveness of broader interventions that approach moral injury from spiritual, religious or social perspectives.

Introduction

The aim of this rapid evidence assessment (REA) was to examine the evidence and efficacy of interventions targeting moral injury in military personnel and veterans. As moral injury is a relatively new field of investigation in the psychological military literature, and therefore interventions are likely to be emerging, this review was also intended to describe the military literature to date regarding moral injury.

The conceptualisation of moral injury

Military personnel often confront high risk situations that include combat, threats to life and physical integrity. Most of these situations are navigated successfully as a result of military training, preparation, and ongoing unit support. However during service, military personnel are also challenged with scenarios whereby under extreme conditions they are required to make decisions, take action or experience or witness events that challenge their ethical and moral beliefs. These decisions, acts and experiences can transgress personal beliefs and values, leading to inner conflict and potential mental health problems. Apart from the high risk associated with exposure to such events including potentially traumatising events, very little is known about the consequences of these transgressions of ethical and moral beliefs. For instance, it is unclear how these transgressions of beliefs influence the development of mental health or other problems, the nature of these problems, and how they relate to known disorders. It is also unknown if existing interventions for related disorders can effectively address symptoms that arise from such transgressions of beliefs.

In order to understand these complex transgressions of beliefs, a body of psychological research is now dedicated to 'moral injury'. This research sought to describe and explain the experiences associated with ethical and moral challenges experienced during combat and military operations. Moral injury is defined as a psychological state that arises from events which involve "*perpetuating, failing to prevent, bearing witness to, or learning about acts that transgress deeply held moral beliefs and expectations*" [1]. Events associated with such transgressions and internal conflict leading to a moral injury can include acts of commission or omission, behaviours of others in the unit, bearing witness to human suffering or horrific acts of violence perpetrated by oneself or by others. One of the events that has been most elaborated upon in the literature to this point is the experience of betrayal, by leadership or peers resulting in significant adverse outcomes[2]. Moral injury therefore requires a decision, act or experience that severely contradicts the expectation of oneself or others, during the event or at some time point after, and an awareness of the discrepancy between one's own morals and the dissonant or conflictual experience[1].

The construct of moral injury within the psychological and military/veteran literature, is still fairly new[2]. Hence, studies to date have focused mostly on the validation of the moral injury construct itself. Drescher et al[3] for example, interviewed mental health providers, academic researchers, chaplains and policy makers (N=23) about the range of potentially morally injurious experiences reported by serving and former military personnel. Four themes relating to these experiences were identified including: (1) betrayal, which can be perpetrated by leaders, peers, trusted significant others or oneself; (2) disproportionate violence, including mistreatment of the enemy and acts of revenge; (3) incidents involving civilians, including violence or property damage perpetrated by oneself or others; and (4) within-rank violence, including sexual trauma, friendly fire or fragging (deliberately causing the death of a fellow military member). These authors proposed that moral injury is a useful construct, not fully encompassed by current diagnostic criteria for psychopathology such as posttraumatic stress disorder (PTSD) or its related features, and therefore helpful in addressing a wider range of combat-related presentations.

These findings were echoed by Nash et al[4], who developed a self-report assessment of moral injury and utilised it to evaluate the moral injury concept in 533 US Marines recently returned from deployments in Iraq and Afghanistan. The construct identified two separate factors related to moral injury: perceived transgression of moral codes by self and others, and perceived betrayal of trust. The findings consequently endorsed the moral injury themes identified in previous research adding to the emerging research seeking to empirically validate the construct of moral injury in military veterans.

Potentially morally injurious events in combat and peacekeeping operations

Research into moral injury is in early stages and little is reported about the prevalence of it in military personnel, veterans or other populations. Studies indicate high levels of exposure to potentially traumatic events reported by service members deployed to combat and peacekeeping operations that have potential to give rise to moral injury Among members of the US army and Marine Corps recently returned from combat duty (N=3,671), these events and the proportion of those personnel endorsing them included: seeing dead bodies (65%), seeing wounded or ill women or children whom service members were unable to help (60%), handling human remains (31%) and having direct responsibility for the death of a non-combatant (20%)[5]. Among 122 treatment seeking active duty personnel, index traumas relating to witnessing potentially morally injurious events were identified by 22% of participants, while committing such acts were identified as index traumas by 12% of participants[6]. In another study that investigated the impact of direct and indirect killing

among 2,797 US soldiers returning from Operation Iraqi Freedom, 40% reported that they killed or were responsible for killing during their deployment[7].

Considering peacekeeping operations, several studies indicated that peacekeeping missions may present a range of unique stressors that can have a significant psychological impact on deployed personnel[8]. Prior research with Australian Defence Force indicated that 31.5% of members reported exposure to potentially traumatic events associated with peacekeeping missions [9]. Whilst the primary goal of these operations is to keep the peace rather than engagement in combat, peacekeepers members can still be exposed to threats to life, witnessing the death and suffering of others, including harm to civilians. Furthermore, restrictive rules of engagement may prevent them from taking action or preventing harm to others[10]. Consequently, the range of experiences presented in these studies establish that experiences associated with combat and peacekeeping operations are multiple, complex and enduring, with some potentially more morally injurious than others.

Features of moral injury

It is well established that combat and deployment pose risks to mental health problems such as posttraumatic stress disorder (PTSD) and depression[5]. Although many if not most potentially morally injurious events are considered potentially traumatising, not much research has investigated the direct link between exposure to morally injurious events and mental health outcomes. Those studies which have investigated this link have focused on the acts of perpetration and killing. Among Vietnam and Iraq war veterans in the US for example, feeling responsible for killing during deployment is identified as a significant predictor of PTSD[11]. Moreover, the role of killing has been argued to impact PTSD and other symptoms differently when compared to other combat-related experiences such as exposure to perceived threat of death or severe injury, suggesting a link between potentially morally injurious events and PTSD and other mental health outcomes[12]. This raises questions around whether fear and transgression of beliefs mediate different patterns of psychological responses and mental health outcomes[13]. The distinctive clinical pathways and patterns differentially associated with these mediators, and which of course can occur in combination, requires further research and exploration.

Notwithstanding those symptoms already associated with PTSD, additional features associated with moral injury reported in the literature include: shame, guilt, loss of trust, self-depreciation[3], anger[14], relationship difficulties[7], impaired psychosocial functioning, alcohol abuse, suicidal ideation and desire for self-harm[15]. In a qualitative study of archival data

randomly selected from 8.2 million US veterans (N=3,016), morally injurious events associated with causing civilian death and disproportionate violence were identified as the most troublesome combat experiences. Loss of trust, spiritual/existential tension, social problems, psychological symptoms and self-depreciation including guilt and shame were reported as the most prevalent problems following exposure to such events. Similarly in another study among active duty US military personnel (N=69), guilt and shame associated with morally injurious events were commonly identified in personnel with histories of suicidal ideation. In addition, these events were associated with severity of suicidal ideations, above and beyond the effects of depression or PTSD[16]. Furthermore, guilt has also been shown to mediate the relationship between PTSD and suicidal ideations, supporting the argument that moral injury may be a risk factor for suicidal ideation among military personnel exposed to combat-related trauma. This link was also demonstrated in US military active-duty personnel receiving treatment (N=151). In particular, personnel with histories of suicidal ideation and behaviour reported higher levels of transgressions (by the individual or others) compared to military personnel without these histories[17].

The demonstrated evidence from these studies suggests a link between combat-related morally injurious events and mental health outcomes that extend beyond the commonly associated trauma-related events not associated with such transgressions or potential conflicts. However, based on available literature and considering the surrounding commonalities in the presentation of symptoms, it is difficult at this time to confidently demarcate between features of PTSD (particularly with the expanded range of symptoms in DSM-5), depression and the purported consequences of potentially morally injurious events.

A moral injury framework

In order to describe and explain the relationship between morally injurious experiences and their impact on psychological distress, Litz and colleagues have proposed a framework of moral injury[1]. These authors argue that when a failure to accommodate conflicting experiences with moral, spiritual or religious beliefs occurs, this can lead to an inability to forgive oneself or others for failing to act in accordance with their moral values. This failing provokes feelings of shame, guilt, demoralisation, self-handicapping behaviours (e.g. self-sabotaging relationships) and at the extreme, self-harm (e.g. suicidal behaviour). Anger and revenge impulses may also result from others' acts or failures to act and these can be maintained through an inability to forgive the perceived perpetrator[1]. The intensity of these emotions and impulses, along with cognitions that accompany them, trigger avoidance and unwanted re-experiencing symptoms often associated with symptoms of PTSD[1,3,18]. While

similarities exist in the development of symptoms, the moral injury framework as Litz and colleagues argue, captures a broader aspect of war-related events different to what may be considered within a purely fear-based model of trauma.

Litz and colleagues[1] argue that symptoms of moral injury may not be well targeted by purely exposure-based treatments for PTSD. That is, because exposure models concentrate primarily on fear as the driving mechanism of associated symptoms, these treatment models may not sufficiently target shame and guilt emotions that follow from morally injurious events. That is, cognitions that underlie moral injury relate to beliefs that one is "immoral" or "cannot be forgiven", and therefore require specific targeting in treatment because they differ from the cognitive characteristics associated with fear-based experiences (i.e. incompetence or safety)[19].

The role of religion and spirituality are also central to the moral injury framework, as individual's interpretations of the morally injurious events stem from their spiritual or existential values and practices[1]. Prior research in this area has indicated that beliefs about right and wrong-doings are essential and relate to interpretations of events[20]. For example, in Vietnam veterans (N=155), exposure to atrocities was related to PTSD symptoms, in addition to global guilt and cognitive aspects of guilt, including hindsight bias, responsibility and wrongdoing. Hence, interpretations of atrocities appeared underlined by an individual's appraisal associated with one's own standards and beliefs about wrongdoing. In this model, self-forgiveness and forgiveness of others who have transgressed promotes adaptation and wellbeing, whereas lack of self-forgiveness maintains self-condemnation and shame, which in turn is associated with greater severity of PTSD symptoms[21,22].

Moral injury interventions

It is important to investigate where the extant literature is situated in regards to interventions targeting moral injury. Given the potential inter-disciplinary nature of moral injury, it is also important that this review spans individual, social and spiritual domains. This REA focused on those categories of psychological and interdisciplinary therapies that were identified as being appropriate in targeting the symptoms and features associated with moral injury, and which were identified as being of most relevance to DVA. Below is a description of interventions that may be appropriate in addressing the symptoms arising from moral injury.

Cognitive behavioural therapy (CBT) is a psychological therapy that focuses on the relationship between cognitions (thoughts), behaviours, and emotional responses[23].

Specifically, CBT proposes that cognitions concerning one's responsibility for an event and thoughts regarding one's violations of important moral standards can lead to guilt and shame[24]. CBT therefore targets cognitions, behaviour and reasoning styles of a person experiencing negative emotions. The process of re-activation of the trauma memory promotes elaboration and contextualisation of the memory, while cognitive restructuring techniques are utilised to address problematic negative appraisals associated with the event when considered in context. Particular forms of CBT therapies include exposure (the most evidence based form of which in trauma related mental health is prolonged exposure) and cognitive therapy (the most evidence based form of which in trauma related mental health is cognitive processing therapy).

Prolonged exposure (PE) involves prolonged imaginal exposure to the memories of the traumatic event, aimed at reduction of symptoms through two mechanisms, habituation and information processing[25]. Habituation occurs when the person is repeatedly exposed to the memory of trauma until the memory no longer elicits high levels of fear, arousal or distress. Exposure facilitates the emotional processing of the traumatic event by addressing the nature of the trauma memory and negative appraisals. The expectation is that with repetitive and prolonged exposure to corrective information regarding the trauma memory and its context, the associated negative appraisals will also change. In this case, the negative appraisal associated with guilt and shame are purported to change when the person judges themselves on a more complete contextualised memory, rather than on the unintegrated fragments of a memory.

Cognitive processing therapy (CPT) is primarily a cognitive treatment for PTSD which offers an alternative to purely exposure-based interventions. CPT has a smaller exposure component than regular trauma-focussed CBT, and involves a written trauma account and out-of-session practice assignments practicing CBT techniques. CPT also specifically targets guilt, shame and self-blame by incorporating Socratic questioning and challenging cognitions impeding recovery. Finally the focus of CPT is on specific topics that are likely to have been disrupted by moral injury such as trust and power/control[26].

Eye movement desensitisation and reprocessing (EMDR) is a treatment on the assumption that overwhelming emotions or dissociative processes interfere with information processing during a traumatic event, leading to an 'unprocessed' experience disconnected from existing memory networks. The client is asked to focus on trauma-related imagery, negative thoughts, emotions, and body sensations while simultaneously moving their eyes back and forth following the movement of the therapist's fingers across their field of vision for

20–30 seconds or more. This process is repeated until desensitisation occurs. EMDR includes more treatment components that are comparable with cognitive behavioural therapy (CBT) interventions including cognitive interweaving (analogous to cognitive therapy), imaginal templating (rehearsal of mastery or coping responses to anticipated stressors), and standard in vivo exposure.

Adaptive Disclosure is a brief, manualised type of cognitive behavioural therapy specifically developed to treat war-related moral injury and traumatic loss[27], but it can target both fear-based, grief-based and morally injurious traumas. Treatment includes imaginal exposure and processing of the traumatic event, cognitive-behavioural techniques, and Gestalt therapy. Specifically, when trauma indexes are related to a fear-based event, intervention predominantly includes prolonged exposure. When trauma indexes are related to morally injurious events or traumatic loss, interventions include engagement in "experiential breakouts" - i.e. imaginal conversations with the key "relevant other" such as the deceased person or authority figure. The goal of this technique is to promote opportunities for corrective experiences and assist admissions to the transgressive act of commission or omission. In addition, the person is encouraged to take on the role of the compassionate and supportive relevant other and offer support and compassionate encouragements aimed at making amends. This technique enables the person to explore the experience but not be consumed by it and accommodate the notion of doing and being good despite the morally injurious event[27]. In sum, the "experiential breakout" exercise is designed to stimulate full disclosure of the transgressions, which would be followed by experiential strategies aimed at initiating the corrective beliefs and behaviours that promote self-compassion and remediation[27].

Acceptance and commitment therapy (ACT) encourages the individual to create a rich and meaningful life, through committing to taking effective value based actions, remaining fully present and engaged, and accepting difficult experiences as an inevitable part of life[28]. To achieve this, ACT promotes the six core processes of: acceptance, cognitive defusion, being in the present moment, self as context, values, and committed action[28]. Specifically, ACT targets the effects of these experiences on behaviour, using behavioural based approaches that promote actions consistent with the individuals values. In this way, ACT is thought to alleviate mental distress and symptoms of disorder more as a by-product, than an actual focus of the therapy.

Spiritual, religious and social interventions aim to deal with social- and self-condemnation, that is, criticism and condemnations of oneself, by oneself or others,

accompanied by emotions of guilt, shame, remorse, regret and self-blame, experienced due to moral failures[1,29]. These interventions aim to help the person deal with questioning his/her own faith and reconsider and reconnect with God or what they previously considered to be sacred[30]. The goal of these therapies is to deal with self-condemnation in a personal but psychologically informed way. This is done by conversing with a friend, family member, chaplain or a counsellor. The expectation is that by talking about self-condemnation one seeks self-forgiveness. This process may include *decisional self-forgiveness* – making a decision to act towards oneself without malice, self-blame and self-condemnation, and *emotional self-forgiveness* – an emotional replacement of unforgiving emotions with forgiving emotions such as self-empathy, self-sympathy, self-compassion and self-love [29,31]. Another goal of spiritual and religious treatments is to make amends. Such amends are aimed at social and psychological repair that bring about changes in expectations of self and others. In summary, self-forgiveness promoted through spiritual, religious and social treatments occurs as a culmination of responsibility dealing with God or what is considered to be sacred, others, and finally dealing with oneself.

Method

To answer the question of what are the effective interventions for veterans who have experienced moral injury, this review utilised a rapid evidence assessment (REA) methodology to assess the interventions reported in the moral injury literature. A REA is a research methodology that uses similar methods to a systematic review but makes concessions to the breadth and depth of the process, in order to suit a shorter timeframe. The advantage of a REA is that it utilises rigorous methods for locating, appraising and synthesising evidence related to a specific topic. To make a REA rapid, however, the methodology places a number of limitations in the search criteria and in how the evidence is assessed. For example, REAs often limit the selection of studies to a specific time frame (e.g. last 10 years), and limit selection of studies to peer-reviewed published, English studies (therefore not including unpublished pilot studies, difficult-to-obtain material and/or non-English language studies). Also, while the strength of the evidence is assessed in a rigorous and defensible way, it is not necessarily as exhaustive as a well-constructed systematic review and/or meta-analysis. A major strength however, is that a REA can inform policy and decision makers more efficiently by synthesising and ranking the evidence in a particular area within a relatively short space of time.

Defining the research question

The components of the question were defined using terms of the Population Intervention Comparison Outcome (PICO) framework (refer to Appendix 1). Operational definitions were established for key concepts related to the question, and from this, specific inclusion and exclusion criteria were defined for screening studies into this REA. As part of this operational definition, the population of interest was defined as military personnel including active duty personnel and veterans who have experienced moral injury. The intervention was defined as any psychological, spiritual or social intervention targeting moral injury. The outcome was defined as any mental health symptom or psychological wellbeing.

Search strategy

To identify the relevant literature, systematic bibliographic searches were performed to find relevant trials from the following databases: EMBASE, MEDLINE, PsychINFO, CINAHL, Scopus, ERIC, EMBASE, Cochrane, Clinical Guidelines Portal (Australia), and the National Guideline Clearinghouse (USA). In addition, specialised databases were identified and included to enable the inclusion of publications from other disciplines. These included the following databases: Social Index with fulltext, Religion and philosophy collection,

Psychology and behavioural sciences collection, PsychArticles, Academic Search Complete (EBSCO). An example of the search strategy conducted using the EMBASE database appears in the Appendix 2.

Search terms

Search terms using the Title/s, Abstract/s, MeSH terms and Keywords lists included:

"moral injury" OR "moral attitudes" OR "moral attitude" OR "moral belief" OR "military ethics" OR "moral ethics" OR morals OR morality ***AND***

veterans OR veteran OR military OR army OR soldiers OR war OR deployment OR combat ***AND***

treatment OR therapy OR psychological OR counselling OR intervention OR psychotherapy OR psychology OR clinical OR "adaptive disclosure" OR "prolonged exposure" OR "mental health service" OR spiritual OR religion OR religious OR religiosity OR spirituality OR theology OR social OR family OR sociology ***AND***

*"mental health" OR "PTSD" OR "posttraumatic stress" OR "post-traumatic stress" OR "traumatic stress" OR "stress disorder" OR traumati*ation" OR alcohol OR drugs OR "drug abuse" OR self-harm OR self*harm OR "depression" OR "depressive" OR "anxiety" OR "well-being" OR shame OR guilt OR forgiveness OR self-handicapping OR self*destructive OR aggression OR anger.*

Paper selection

After conducting searches, identified studies were evaluated according to the following inclusion and exclusion criteria:

Included:

1. Internationally and locally published peer-reviewed research studies
2. Research papers published from **1st January 2004** to **30th November 2014**
3. Outcome data reporting on moral injury OR other publications with relevance to the treatment of moral injury
4. The majority of the sample were identified as military personnel
5. Human adults (i.e. ≥ 18 years of age)
6. English language

Excluded:
1. Non-English papers 2. Papers where a full-text version was not readily available 3. Validation studies 4. Animal studies 5. Grey literature (e.g. media: websites, newspapers, magazines, television, conference abstracts, theses) 6. No quantitative outcome reported 7. Papers where the study focus was not relevant to the treatment of moral injury

Information management

A screening process was adopted to code the eligibility of papers acquired through the literature search. Papers were directly imported into the bibliographic tool Endnote X5, and then processed using Excel. All records that were identified through the literature search were screened for relevance against the inclusion criteria. Initial screening for inclusion was performed by one reviewer, and was based on the information contained in the title and abstract. Full text versions of all studies which satisfied this initial screening were obtained.

In screening the full-text paper, the reviewer made the decision on whether the paper should be included or excluded, based on the pre-defined inclusion and exclusion criteria. If the paper met criteria for inclusion, it became subject to data abstraction. At this stage in the information management process, 20% of the articles processed were randomly selected and checked by a second independent reviewer. There was 100% inter-rater agreement between the two reviewers. The following information was extracted from studies that met inclusion criteria: (i) study description, (ii) intervention description, (iii) participant characteristics, (iv) primary outcome domain, (v) main findings, (vi) bias and, (vii) quality assessment.

Evaluation of the evidence

There were four key components that contributed to the overall evaluation of the evidence:

1. The **strength of the evidence base**, in terms of the quality and risk of bias, quantity of evidence, and level of evidence (study design)
2. The **consistency** of the study results
3. The **generalisability** of the body of evidence to the target population (i.e. adults/military personnel)

4. The **applicability** of the body of the evidence to the Australian context

The first two components provided a gauge of the internal validity of the study data in support of efficacy for an intervention. The last two components considered the external factors that may influence effectiveness, in terms of the generalisability of study results to the intended target population, and applicability to the Australian context.

Strength of the evidence base

The strength of the evidence base was assessed in terms of the (a) quality and risk of bias, (b) quantity of evidence, and (c) level of evidence.

a) **Quality and risk of bias** reflected how well the studies were conducted, including how participants were selected, allocated to groups, managed and followed-up; and how the study outcomes were defined, measured, analysed and reported. An assessment was conducted for each individual study with regard to the quality and risk of bias criteria utilising a modified version of the Chalmers Checklist for appraising the quality of studies of interventions (see Appendix 3). Three independent raters rated each study according to these criteria, and together a consensus agreement was reached as to an overall rating of 'Good', 'Fair', or 'Poor'.

b) **Quantity** of evidence reflected the number of studies that were included as the evidence base for each ranking. The quantity assessment also took into account the number of participants in relation to the frequency of the outcomes measured (i.e. the statistical power of the studies). Small underpowered studies that were otherwise sound may have been included in the evidence base if their findings were generally similar- but at least some of the studies cited as evidence must have been large enough to detect the size and direction of any effect.

c) **Level of evidence** reflected the study design. Details of the study designs included in this REA were assessed against a hierarchy of evidence commonly used in Australia[32]:

- Level I: A systematic review of randomised controlled trials (RCTs)
- Level II: A RCT
- Level III-1: A pseudo-RCT (i.e. a trial where a pseudo-random method of allocation is utilised, such as alternate allocation).
- Level III-2: A comparative study with concurrent controls. This can be any one of the following:

  - Non-randomised experimental trial [this includes controlled before-and-after (pre-test/post-test) studies, as well as adjusted indirect comparisons (i.e. utilise A vs B and B vs C to determine A vs C with statistical adjustment for B)]
  - Cohort study
  - Case-control study
  - Interrupted time series with a control group
- Level III-3: A comparative study without concurrent controls. This can be any one of the following:
  - Historical control study
  - Two or more single arm study [case series from two studies. This would include indirect comparisons utilise (i.e. A vs B and B vs C to determine A vs C where there is no statistical adjustment for B]
  - Interrupted time series without a parallel control group.
- Level IV: Case series with either post-test or pre-test/post-test outcomes

Overall strength

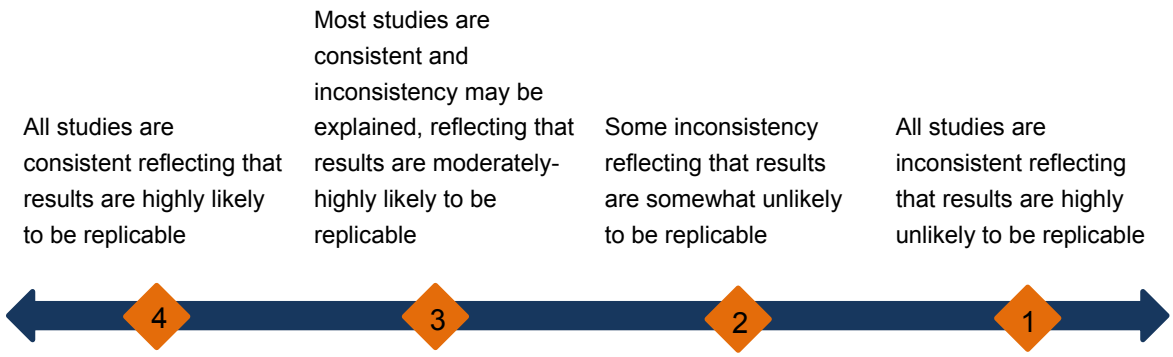
A judgement was made about the strength of the evidence base, taking into account quality and risk of bias, quantity of evidence and level of evidence. Agreement was sought between three independent raters and consensus about the strength of the evidence base was obtained according to the following categories.

High beneficial strength	**Moderate beneficial strength**	**Low beneficial strength**	**High non-beneficial strength**
Clear evidence of beneficial effect. One or more Level I studies with a low risk of bias **OR** three or more Level II studies with a low risk of bias	*Evidence suggestive of beneficial effect***.** One or two Level II studies with a low risk of bias **OR** two or more Level III studies with a low risk of bias	*Insufficient evidence at present.* One or more Level I through to Level IV study with a high risk of bias	*No effect or a harmful effect.* One or more Level I studies with a low risk of bias **OR** three or more Level II studies with a low risk of bias

It should be noted here that due to the early nature of the concept of moral injury and the limited research identified on this topic in the literature, not all four evaluation components were applicable to this review. In particular, the low strength of the evidence base identified rendered the subsequent steps unnecessary. As such the following three components of the evaluation were not utilised in this review and are provided only as general description.

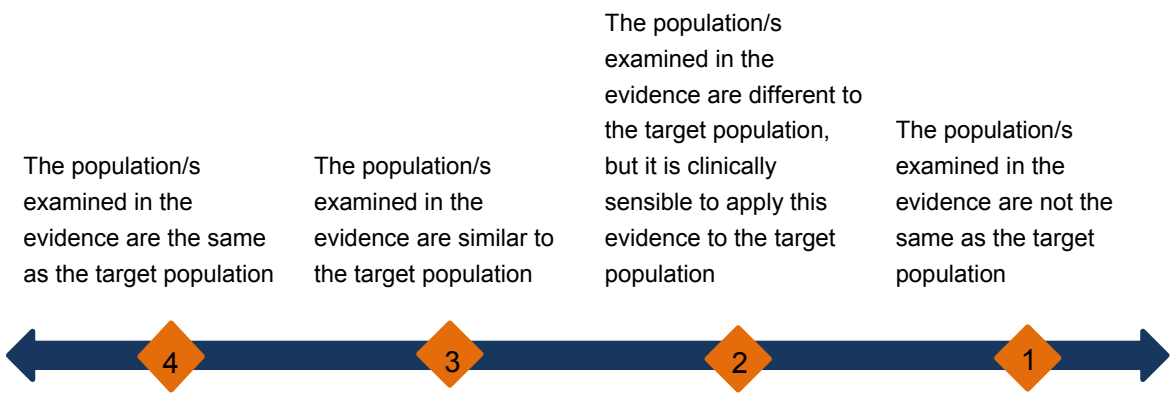
Consistency

The consistency component of the ranking system of the body of the evidence assesses whether the findings are consistent across the included studies (including across a range of study populations and study designs). It was important to determine whether study results are consistent to ensure that the results are likely to be replicable or only likely to occur under certain conditions.



Generalisability

This component covers how well the participants and settings of the included studies could be generalised to the target population. Population issues that might influence this component included gender, age or ethnicity, or level of care (e.g. community or hospital).



Applicability

This component addresses whether the evidence base is relevant to the Australian context, or to specific local settings (such as rural areas or cities). Factors that may reduce the direct application of study findings to the Australian context or specific local settings include organisational factors (e.g. availability of trained staff) and cultural factors (e.g. attitudes to health issues, including those that may affect compliance).

Ranking the evidence

On balance, this next step takes into account the considerations of the strength of the evidence (quantity and risk of bias, quantity of evidence and level of evidence), consistency, generalisability and applicability. The total body of the evidence is then ranked into one of four categories: ‘Supported’, ‘Promising’, ‘Unknown’ and ‘Not Supported’ (see Figure 1). Agreement on ranking is sought between all three independent raters.

Figure 1: Categories within the intervention ranking system

SUPPORTED	PROMISING	UNKNOWN	NOT SUPPORTED
Clear, consistent evidence of beneficial effect	Evidence suggestive of beneficial effect but further research required	Insufficient evidence of beneficial effect and further research is required	Clear, consistent evidence of no effect or negative / harmful effect

Results

The following section presents the flowchart relating to the number of records identified at each stage of the REA (refer to Figure 2). From all the sources searched, only two publications met the full inclusion criteria and were included in the results of this REA. Both studies originated form the US and were published in the last two years (2012 and 2014). Of the 49 additional publications that were assessed for eligibility, 19 studies were identified as addressing the topic of moral injury, however not specifically addressing treatment of moral injury (i.e., publications were discussion papers on conceptual development, treatment description etc.). Information from these publications has been incorporated into this report in the introduction or discussions section where possible. Of the remaining 30 publications that were identified as non-eligible or irrelevant, the majority were excluded because the topic of the publication was not moral injury or the publication was not a research study (e.g., conference proceedings, commentary, etc).

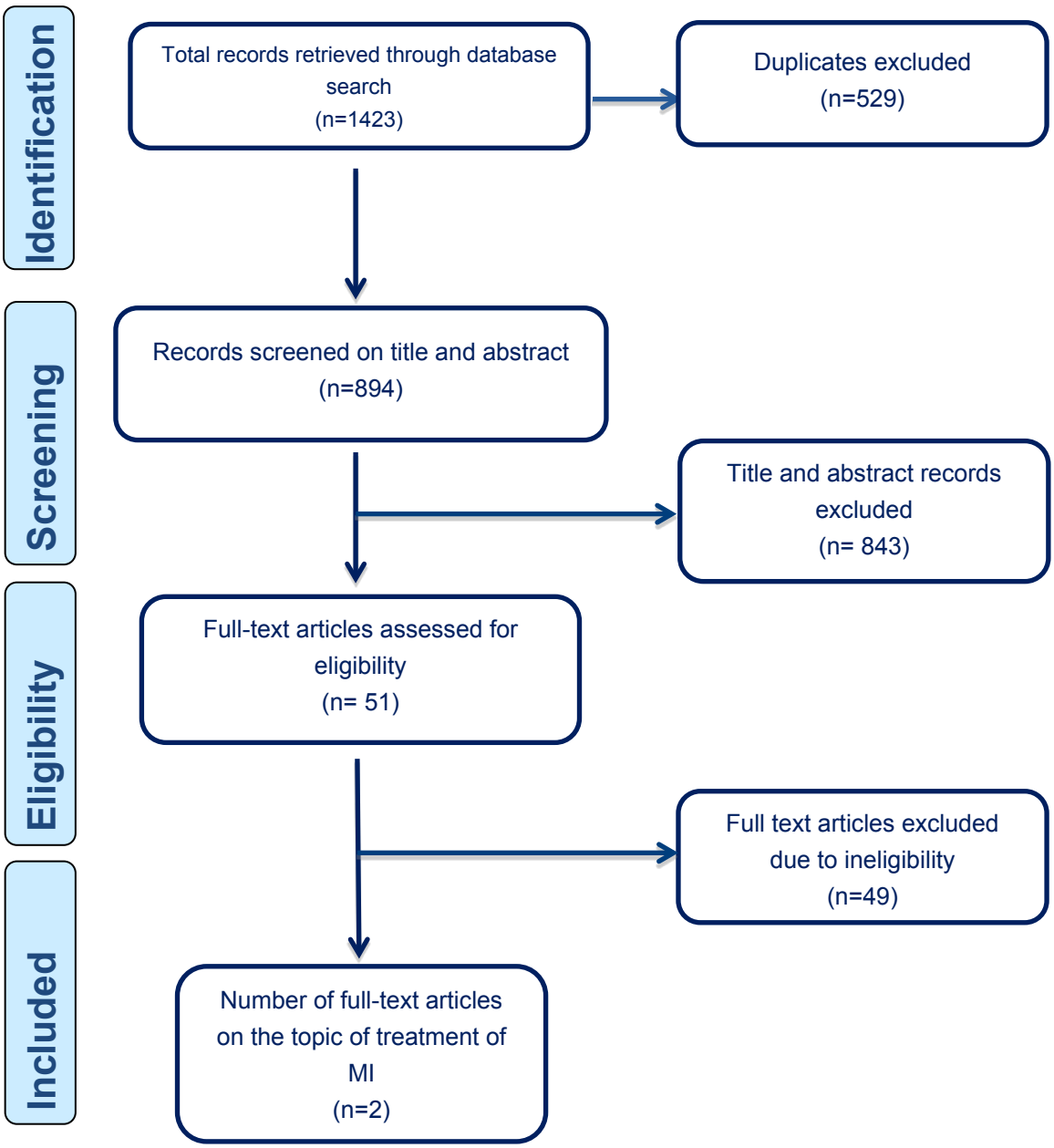


Figure 2: Flowchart representing the number (n) of records retrieved at each stage of the rapid evidence assessment

Summary of the evidence

Only two studies were identified that examined effective interventions for military personnel or veterans who have experienced moral injury. Both studies were single group pre-post designs without follow-up. A detailed summary of the findings is found in the evidence profile presented in Appendix 4.

The first study, by Gray and colleagues[33] assessed the effectiveness of Adaptive Disclosure in active-duty military personnel (N=44) who experienced traumatic loss and moral injury. Adaptive Disclosure is a brief, manualised type of cognitive behavioural therapy specifically developed to treat war-related moral injury and traumatic loss[27]. Treatment included six 90-minute weekly sessions including imaginal exposure and processing of the traumatic event, cognitive-behavioural techniques and gestalt therapy. Specifically, when the trauma index related to a fear-based event, intervention predominantly included prolonged exposure. However, when the trauma index related to morally injurious events or traumatic loss, the intervention also included engagement in "experiential breakouts" - i.e. imaginal conversations with the key "relevant other" such as the deceased person or authority figure. At the end of treatment, participants reported significantly large reductions in PTSD, depressive symptoms and posttraumatic appraisals relating to negative beliefs about self and the world, but not self-blame or alcohol use.

In the second study, Artra [34] assessed the effectiveness of a brief narrative art-based therapy conducted in group-format (60 contact hours) with male veterans (N=8) diagnosed with PTSD in relation to the experience of moral injury and traumatic loss. Specifically, therapy included 5 days of retreat facilitated by two trained psychotherapists, during which time, participants grieved via guided introspection and body based mindfulness, an art-expression and reviewing process addressing their experience of distress, and the creation of a 'new story', encompassing an evolved understanding of the participants past, present and future. The goal of the therapy was meaning reconstruction, in particular making up for the loss of others, the personal self or 'sense of soul'. At the end of treatment, all participants demonstrated significant reductions in their PTSD symptoms. In terms of clinical significance, at post-treatment seven out of eight participants demonstrated clinically significant improvements on their individual PTSD scores (individual decrease range between 34-70%).

As outlined in the Introduction, many of the current evidence based treatments such as CBT, PE, EMDR and CPT include components that address elements considered to be features

of moral injury such as shame, guilt, demoralisation and anger. It is noteworthy, however, that no studies published during the identified search period using these treatments referred to the concept of moral injury and hence were not included in this evidence review. This is not surprising since the term moral injury has only recently been introduced into the field's lexicon. It cannot be assumed from that however, these treatments are not effective for these types of injuries. For example, treatments such as cognitive therapy and cognitive processing therapy demonstrate strong outcomes in the area of guilt. Hence, the strength of the evidence base for psychological interventions explicitly targeting moral injury was limited to a very small number of studies identified, with small sample sizes and limited study design, and subsequently high risk of bias. Given that the strength of the evidence base was low, generalisability, consistency, and applicability could not be rated, and the evidence for the effectiveness of psychological interventions in the treatment of moral injury specifically in military personnel/veterans was therefore ranked as 'Unknown' – that is, there is currently insufficient evidence of beneficial effect.

Discussion

The aim of this review was to assess the evidence related to effective interventions for military personnel or veterans who have experienced moral injury. The REA yielded only two studies with limited study design, which investigated the efficacy of an intervention for moral injury in military personnel/veterans. The evidence for the use of psychological interventions was insufficient and therefore ranked as 'Unknown'. This means that at this time, there is insufficient evidence to support the beneficial effect of interventions for moral injury and further research is required.

Although this review was broadened to accommodate spiritual, religious or social treatments targeting moral injury in veterans, there were no studies identified in this REA that evaluated these interventions, beyond the component included as part of Adaptive Disclosure. Again this does not indicate that such interventions are not effective, but that as yet there is no reported evidence to evaluate their effectiveness in this population. It is important to note that the military and veteran literature reporting on moral injury has spanned only the last few years and as good quality studies investigating interventions for moral injury in military personnel and veterans are published, the evidence base for treatments this area will need to be reassessed.

However, it needs to be emphasised that in attempting to describe the current literature around moral injury in veterans, this REA indicates that the concept of moral injury is still currently being refined to improve its definitional clarity with attention to improving the

delineation between the event parameters, the purported mechanisms of action and the identified mental health and broader outcomes. There is also still more to learn about the overlap and independence of moral injury from other mental health and posttraumatic reactions, the prevalence course and trajectories of moral injury related phenomenology, and the degree to which psychological, social, spiritual, religious or any other interventions are adequately able to address it. The moral injury framework proposed by Litz and colleagues[1] provides a valuable basis for future work in examining moral injury and broadens the discussion beyond the focus on the threat and fear-related mechanisms often associated with combat and deployment related trauma. However, this research is still preliminary, and further investigation is needed before we can infer which interventions lead to improved mental health outcomes.

Despite the lack of evidence on effective treatments for moral injury, the literature does consider whether current evidence-based treatments are able to address moral injury and promote recovery. While there is an indication that current evidence-based treatment such as PE, address some components of moral injury (e.g. guilt and shame),[35] interventions that primarily address fear-based symptomatology are criticised as insufficiently addressing the full spectrum of moral injury presentations[1]. Although it could be argued that symptoms such as guilt and shame are secondary outcomes that often resolve upon repeated exposure and emotional processing of the event and its context (i.e. treated by therapies such as exposure therapy), or indeed targets of treatment specifically addressed by trauma driven cognitive therapies (such as CPT), Litz and colleagues argue that interventions need to target moral injury directly. Furthermore, proponents of more focused moral injury intervention suggest that emphasis should be placed on addressing self-condemnation by building forgiveness of self or others, restoring trust and accepting transgressions and that this requires a more experiential approach than that delivered by cognitively focused interventions[3,29]. However, further evidence is needed to establish the effectiveness of targeted interventions, as well as the effectiveness of existing evidence-based interventions, on moral injury specifically.

Implications and future directions

Research on moral injury is still in development and more evidence is needed to better define the construct, identify its prevalence and course and specify the recommended interventions. This will include identifying and defining potentially morally injurious events and their relationship with other potentially traumatic events. In addition, it will be necessary to identify specific symptom features and outcomes that relate to moral injury and how and where they overlap, enhance and are distinct from other psychological outcomes. There is

also need to develop and test psychometrically sound instrumentation for assessing potentially morally injurious experiences and moral injury as an outcome.

It is also very important to define *what* treatments need to address when dealing with moral injury. In particular, it will be important to develop interventions that are well-targeted to the underlying mechanisms (i.e. failure to accommodate transgressions of belief associated with moral injury). Lastly, there is a need to assess if we need new treatments that specifically target moral injury (e.g. Adaptive Disclosure) or if current evidence-based treatments for posttraumatic stress and other mental health problems that can attenuate feelings of shame and guilt (e.g. CBT, CPT, PE) can be equally applied to target the broad array of features associated with moral injury in the presence or absence of PTSD.

Limitations of this rapid evidence assessment

The findings from this REA should be considered alongside some limitations. These limitations included: the omission of potentially relevant papers that were published prior to or after the defined search period; the omission of non-English language papers; the limitation of the search to veteran and military literature and reference lists of included papers were not hand-searched to find other relevant studies. However, as research on moral injury in military personnel is in early stages, perhaps the biggest limitation to this REA was the limited number of treatment studies yielded from the process. As research continues to explore the questions raised in this review, the level of evidence to support (or not support) therapies for moral injury are likely to increase. Finally, the information presented in this REA is a summary of information presented in available papers. We recommend readers source the original papers if they would like to know more about a particular intervention or study.

Conclusion

This REA concludes that moral injury is potentially a significant outcome for veterans and military personnel particularly following combat or peacekeeping deployments. However currently, research into moral injury remains preliminary and more empirical evidence is needed to define and operationalise the concept of moral injury and its prevalence in the military and veteran population. Further research is also needed to understand the unique constellations of symptoms associated with moral injury, and their overlap with other traumatic reactions, which will assist in guiding the continued development and evaluation of targeted treatments. To date, there is insufficient evidence to identify what the effective psychological, religious, spiritual or social interventions are for moral injury in veteran/military

populations. The very limited treatment research focusses on combat veterans with no studies focusing on peacekeepers. Further research investigating the effectiveness of existing evidence-based and new interventions for moral injury are required in these populations.

Appendix 1

Population Intervention Comparison Outcome (PICO) framework

This question was formulated within a Population Intervention Comparison Outcome (PICO) framework. Application of a PICO framework helps to structure, contain and set the scope for the research question. Inclusion of intervention and comparison components is dependent on the question asked, and may not be appropriate for all question types.

- **What are the effective interventions for veterans who experienced moral injury?**
    - **PICO format:** In veterans who have experienced moral injury which psychological interventions lead to improved mental health outcomes?

P Patient, Problem, Population	**I** Intervention	**C** Comparison (*optional*)	**O** Outcome (*"more effective" is not acceptable unless it describes **how** the intervention is more effective)*
Patient – adults who have experienced moral injury **Problem** – moral injury i.e. acts of perpetrating, failing to prevent, bearing witness or learning about acts that lead to serious inner conflict because such transgressions are at odds with core	Any psychological, spiritual and social treatments which targets moral injury		Improvements in any of the following: • mental health symptoms (e.g. PTSD, depression, anxiety, alcohol and drug abuse, self-harm) • psychological well-being (e.g. shame, guilt, , demoralisation, self-handicapping/self-destructive behaviours, aggression)

ethical and moral beliefs and expectations[1] Population – military personnel			

Appendix 2

Example search strategy

The following is an example of the search strategy conducted in the EMBASE database:

Step	Search Terms	No of records
S1	"moral injury" OR "moral attitudes" OR "moral attitude" OR "moral belief" OR "military ethics" OR "moral ethics" OR morals OR morality	28,504
S2	treatment OR therapy OR psychological OR counselling OR intervention OR psychotherapy OR psychology OR clinical OR "adaptive disclosure" OR "prolonged exposure" OR "mental health service" OR spiritual OR religion OR religious OR religiosity OR spirituality OR theology OR social OR family OR sociology	13,676,370
S3	"mental health" OR "PTSD" OR "posttraumatic stress" OR "post-traumatic stress" OR "traumatic stress" OR "stress disorder" OR traumati*ation" OR alcohol OR drugs OR "drug abuse" OR self-harm OR self*harm OR "depression" OR "depressive" OR "anxiety" OR "well-being" OR shame OR guilt OR forgiveness OR self-handicapping OR self*destructive OR aggression OR anger	2,026,856
S4	veterans OR veteran OR military OR army OR soldiers OR war OR deployment OR combat	424,116
S5	#1 AND #2 AND #3 AND #4	164
S6	#1 AND #2 AND #3 AND #4 AND [2004-2014]/py	122
S7	#1 AND #2 AND #3 AND #4 AND [2004-2014]/py AND [english]/lim	117

Appendix 3

Quality and bias checklist

Chalmers Checklist for appraising the quality of studies of interventions[36]

Completed		
Yes	No	
		1. **Method of treatment assignment**
		• Correct, blinded randomisation method described OR randomised, double-blind method stated AND group similarity documented
		• Blinding and randomisation stated but method not described OR suspect technique (eg allocation by drawing from an envelope)
		• Randomisation claimed but not described and investigator not blinded
		• Randomisation not mentioned
		2. **Control of selection bias after treatment assignment**
		• Intention to treat analysis AND full follow-up
		• Intention to treat analysis AND <25% loss to follow-up
		• Analysis by treatment received only OR no mention of withdrawals
		• Analysis by treatment received AND no mention of withdrawals OR more than 25% withdrawals/loss-to-follow-up/post-randomisation exclusions
		3. **Blinding**
		• Blinding of outcome assessor AND patient and care giver (where relevant)
		• Blinding of outcome assessor OR patient and care giver (where relevant)
		• Blinding not done
		• Blinding not applicable
		4. **Outcome assessment (if blinding was not possible)**
		• All patients had standardised assessment
		• No standardised assessment OR not mentioned

		5. Additional Notes
		• Any factors that may impact upon study quality or generalisability

Appendix 4

Evidence Profile

Authors & year	Design	Sample	Intervention	Intervention delivery method, frequency, duration, (delivered to)	Outcomes (Measure(s))	Participants randomised
Treatment Studies						
Artra, 2014	Single group pre-post design	Veterans diagnosed with combat-related PTSD Age range 35-67 Male 100% male	Art-based intervention *(The Warrior's Journey)*	*5 daily 8 h group-based sessions*	- Posttraumatic Stress Disorder Checklist- Military version (PCL-M) -Complicated grief – thematic analysis only i.e. no qualitative analysis	N=8
At post-treatment (i.e. at Day 5), seven out of eight participants demonstrated clinically significant reductions in PTSD symptoms (t(7)=5.71; p<.001). The changes in PCL-M score from pre- to post-treatment ranged between -14 to -48 points.						
Gray et al, 2012	Single group pre-post design	US active-duty marines and Navy Corps personnel with PTSD diagnosis	Adaptive disclosure	*Six weekly 1.5 h individual sessions*	- Posttraumatic Stress Disorder Checklist- Military version (PCL-M) - Depression (PHQ-9) - Alcohol use (AUDIT -Traumatic appraisal (PTCI)	N=44

Authors & year	Design	Sample	Intervention	Intervention delivery method, frequency, duration, (delivered to)	Outcomes (Measure(s))	Participants randomised
		Age: 73% between 17-29 years Male 95%			- Posttraumatic Growth Inventory (PTGI)	
At post-treatment, participants reported significant improvements in PTSD (d=.79), depressive symptoms (d=.71) and posttraumatic cognitions (d=.64). In particular participants reported significant changes in negative self-belief (d=.57) and world-belief (d=.69), while there were no significant changes reported on self-blame subscale. In addition, there was a small increase in posttraumatic growth (d=33), while there was no significant change reported for alcohol use.						

Appendix 5

Evaluation of the evidence

Type of Intervention	Included Studies
Supported	
Promising	
Unknown	
	Artra 2014 **Gray et al., 2012**

References

1. Litz BT, Stein N, Delaney E, et al. Moral injury and moral repair in war veterans: A preliminary model and intervention strategy. *Clinical Psychology Review.* 2009;29(8):695-706.
2. Shay J. Moral injury. *Psychoanalytic Psychology.* 2014;31(2):182-191.
3. Drescher KD, Foy DW, Kelly C, Leshner A, Schutz K, Litz B. An exploration of the viability and usefulness of the construct of moral injury in war veterans. *Traumatology.* 2011;17(1):8-13.
4. Nash WP, Marino Carper TL, Alice Mills M, Au T, Goldsmith A, Litz BT. Psychometric evaluation of the moral injury events scale. *Military Medicine.* 2013;178(6):646-652.
5. Hoge CW, Castro CA, Messer SC, McGurk D, Cotting DI, Koffman RL. Combat duty in Iraq and Afghanistan, mental health problems, and barriers to care. *New England Journal of Medicine.* 2004;351(1):13-22.
6. Stein NR, Mills MA, Arditte K, et al. A Scheme for Categorizing Traumatic Military Events. *Behavior Modification.* 2012;36(6):787-807.
7. Maguen S, Maguen B, Lucenko M, et al. The impact of reported direct and indirect killing on mental health symptoms in Iraq war veterans. *Journal of Traumatic Stress.* 2010;23(1):86.
8. Waller M, Treloar SA, Sim MR, et al. Traumatic events, other operational stressors and physical and mental health reported by Australian Defence Force personnel following peacekeeping and war-like deployments. *BMC Psychiatry.* 2012;12(1):88.
9. McFarlane AC, Hodson SE, Van Hooff M, Davies C. *Mental health in the Australian Defence Force: 2010 ADF Mental Health and Wellbeing Study: Full report.* Canberra: Department of Defence; 2011.
10. Litz BT, Orsillo SM, Friedman M, Ehlich P, Batres A. Posttraumatic stress disorder associated with peacekeeping duty in Somalia for US military personnel. *Am. J. Psychiatry.* 1997;154:178-184.
11. MacNair R, MacNair. Perpetration-induced traumatic stress in combat veterans. *Peace and Conflict.* 2002;8(1):63-72.
12. Fontana A, Rosenheck R. A model of war zone stressors and posttraumatic stress disorder. *Journal of Traumatic Stress.* 1999;12(1):111-126.

13. Maguen S, Burkman K. Combat-related killing: Expanding evidence-based treatments for PTSD. *Cognitive and Behavioral Practice.* 2013;20(4):476-479.
14. Worthen MJ. The Causes, Course, and Consequences of Anger Problems in Veterans Returning to Civilian Life. *Journal of Loss & Trauma.* 2014;19(4):355-363.
15. Maguen S, Luxton DD, Skopp NA, et al. Killing in combat, mental health symptoms, and suicidal ideation in Iraq war veterans. *Journal of Anxiety Disorders.* 2011;25(4):563-567.
16. Bryan CJ, Morrow CE, Etienne N, Ray-Sannerud B. Guilt, shame, and suicidal ideation in a military outpatient clinical sample. *Depression and Anxiety.* 2013;30(1):55-60.
17. Bryan AO, Bryan CJ, Morrow CE, Etienne N, Ray-Sannerud B. Moral injury, suicidal ideation, and suicide attempts in a military sample. *Traumatology.* 2014;20(3):154.
18. Litz BT. Clinical heuristics and strategies for service members and veterans with war-related ptsd. *Psychoanalytic Psychology.* 2014;31(2):192-205.
19. Steenkamp MM, Nash WP, Lebowitz L, Litz BT. How Best to Treat Deployment-Related Guilt and Shame: Commentary on Smith, Duax, and Rauch (2013). *Cognitive and Behavioral Practice.* 2013;20(4):471-475.
20. Beckham JC, Feldman ME, Kirby AC. Atrocities exposure in Vietnam combat veterans with chronic posttraumatic stress disorder: Relationship to combat exposure, symptom severity, guilt, and interpersonal violence. *Journal of Traumatic Stress.* 1998;11(4):777-785.
21. Witvliet C, Phipps K, Feldman M, Beckham J. Posttraumatic mental and physical health correlates of forgiveness and religious coping in military veterans. *Journal of Traumatic Stress.* 2004;17(3):269-273.
22. Fisher ML, Exline JJ. Self-forgiveness versus excusing: The roles of remorse, effort, and acceptance of responsibility. *Self and Identity.* 2006;5(02):127-146.
23. Beck A. Thinking and Depression. *Archives of General Psychiatry.* 1964;10(6):561.
24. Ehlers A, Clark DM. A cognitive model of posttraumatic stress disorder. *Behaviour Research and Therapy.* 2000;38(4):319-345.
25. Foa EB, Meadows EA. Psychosocial treatments for posttraumatic stress disorder. *Psychological Trauma.* 1998:179-204.

26. Monson CM, Schnurr PP, Resick PA, Friedman MJ, Young-Xu Y, Stevens SP. Cognitive processing therapy for veterans with military-related posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology.* 2006;74(5):898.
27. Steenkamp MM, Litz BT, Gray MJ, et al. A Brief Exposure-Based Intervention for Service Members With PTSD. *Cognitive and Behavioral Practice.* 2011;18(1):98-107.
28. Hayes SC, Luoma JB, Bond FW, Masuda A, Lillis J. Acceptance and commitment therapy: Model, processes and outcomes. *Behaviour Research and Therapy.* 2006;44(1):1-25.
29. Worthington Jr EL, Langberg D. Religious considerations and self-forgiveness in treating complex trauma and moral injury in present and former soldiers. *Journal of Psychology and Theology.* 2012;40(4):274-288.
30. Fontana A, Rosenheck R. Trauma, change in strength of religious faith, and mental health service use among veterans treated for PTSD. *The Journal of Nervous and Mental Disease.* 2004;192(9):579-584.
31. Devenish-Meares P. Call to Compassionate Self-Care: Introducing Self-Compassion Into the Workplace Treatment Process. *Journal of Spirituality in Mental Health.* 2015;17(1):75-87.
32. Merlin T, Weston A, Tooher R. Extending an evidence hierarchy to include topics other than treatment: revising the Australian 'levels of evidence'. *BMC Medical Research Methodology.* 2009;9(34).
33. Gray MJ, Schorr Y, Nash W, et al. Adaptive Disclosure: An Open Trial of a Novel Exposure-Based Intervention for Service Members With Combat-Related Psychological Stress Injuries. *Behavior Therapy.* 2012;43(2):407-415.
34. Artra IP. Transparent Assessment: Discovering Authentic Meanings Made by Combat Veterans. *Journal of Constructivist Psychology.* 2014;27(3):211-235.
35. Smith ER, Duax JM, Rauch SAM. Perceived Perpetration During Traumatic Events: Clinical Suggestions From Experts in Prolonged Exposure Therapy. *Cognitive and Behavioral Practice.* 2013;20(4):461-470.
36. NHRMC. How to review the evidence: systematic identification and review of the scientific literature. Canberra: Biotext; 1999.