LITERATURE REVIEW AND RESEARCH ARTICLE

Peer Outdoor Support Therapy
for Australian Contemporary Veterans

Kendall Bird

Supervisor
Dr Nadine Pelling

Research thesis submitted in partial fulfilment of the requirements for the degree of
Masters of Clinical Psychology, School of Psychology, Social Work and Social Policy,
University of South Australia

31st July 2013
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SUBMISSION OF RESEARCH THESIS

NAME OF STUDENT: Kendall Bird

TITLE OF LITERATURE REVIEW:

Peer Outdoor Support Therapy (POST) with Australian Contemporary Veterans: A Review of the Literature

TITLE OF RESEARCH ARTICLE:

Contemporary Veterans’ experience of an Australian Peer Outdoor Support Therapy (POST) Program

I am the Research Supervisor of the student listed above. I certify that she has presented me with the final version of the work listed above.

I have read the above research article and I understand that this version of the work is to be submitted for examination.

Name of Supervisor: Nadine Pelling

Signature: 

Date: 30th July 2013
STATEMENT OF AUTHORSHIP

This thesis contains no material that has been accepted for the award of any other degree or diploma in any educational institution and, to the best of my knowledge and belief, it contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

[Signature]

Date: 30th July 2013

As the supervisor of this thesis I declare that this work conforms to University guidelines and is of suitable quality for submission

[Signature]

Date: 30th July 2013
ACKNOWLEDGEMENTS

I gratefully acknowledge Trojan’s Trek Director Moose Dunlop and the Trojan’s Trek Board for enabling access to their archived data for the current research and for their assistance and openness with information regarding the program framework and structure.

Many thanks to Nadine for your assistance in supervising my thesis work over the past year, it is greatly appreciated.

A detailed abstract for the research article is to be published in the Journal of Military and Veterans’ Health for proceedings of the Australian Military Medicine Association (AMMA), Adelaide, South Australia in November 2013.
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LITERATURE REVIEW

Peer Outdoor Support Therapy (POST) for Australian Contemporary Veterans:
A Review of the Literature

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Research thesis submitted in partial fulfilment of the requirements for the degree of Masters of Clinical Psychology, School of Psychology, Social Work and Social Policy,
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31st July 2013

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Peer Outdoor Support Therapy (POST) for Australian Contemporary Veterans: A Review of the Literature

Introduction

The unique experiences and demands of military combat deployment and its impact on mental health have been well established. Given high mental illness rates, an ongoing stigma regarding mental illness as weakness, and a reluctance to seek professional help, identifying effective approaches for treatment and early intervention to address veteran (former service military personnel) mental illness through research is needed. In this paper the effects of deployment, current standard practice for psychological therapy, and the literature regarding veteran reluctance to seek therapy and potential low responsiveness to some treatments are outlined. Current evidence regarding the effectiveness of peer outdoor support therapy (POST) approaches for non-veteran populations and contemporary returned post-deployed (CRPD) veterans (post-Vietnam deployed) experiencing mental illness, is reviewed.

Treatment literature and research articles on the topics of veteran, military, post-traumatic stress disorder, mental health treatment, outdoor therapy, and peer support/peer mentor were sought for the current review. The following databases were utilised: Ebscohost PsychInfo, PsychArticles, Web of Knowledge, ProQuest and Wiley as well as others. Additional information regarding programs, organisational reports and defence information was sought via internet search engines.

Effects of Deployment for Contemporary Veterans

Australia’s involvement in Vietnam demonstrated that veterans experience significant reductions in mental health and wellbeing as a result of combat deployment as well as maladjustment to post-deployment life. This remains a significant health issue for CRPD veterans, and although the link between deployment and mental illness has been debated, military combat is associated with reduced mental health and functioning and increased suicide risk. The Australian Department of Veteran’s Affairs’ (DVA) review of research identified a significant, consistent association between deployment and post-traumatic stress disorder (PTSD), anxiety and depressive disorders, alcohol misuse, suicide post-deployment and relationship conflict.

Bleier et al. surveyed 5,911 current and former ADF personnel and found that deployment was significantly associated with negative mental health as measured by self-report clinical
questionnaires when compared to non-deployed personnel and veterans. The researchers found that multiple deployments had a cumulative negative effect on mental health ($p < 0.01$). This link was not found by Hodson et al.\textsuperscript{6} in their 2010 ADF Mental Health and Wellbeing Study (MHWS), which utilised only current serving personnel. Warren Snowdon, Minister for Defence, Science and Personnel, stated that as of June 2012, 32\% of all Australian Defence Force (ADF) soldiers medically discharged after deployment to the Middle East were discharged due to mental health conditions directly resulting from deployment\textsuperscript{7}.

Military service alone is associated with higher mental illness rates, regardless of deployment. The 2010 ADF MHWS showed PTSD rates for 24,481 current serving ADF personnel were almost double that of the non-military Australian population and total mental health disorder rates were significantly higher\textsuperscript{6}. It is estimated that the suicide rate for veterans is double that of the non-veteran population\textsuperscript{6}, thus indicating a greater vulnerability for those who have left military service. In acknowledgement, transition from service is acknowledged as a key commitment area within the 2011 ADF Mental Health and Wellbeing Strategy\textsuperscript{9}.

Australian CRPD veterans experienced situations which may result in a higher mental health risk than previously experienced. For example, the heightened use and efficiency of modern improvised explosive devices (IEDs) in civilian centres, amongst other challenges not experienced in previous wars require hypervigilance\textsuperscript{10,11}. Returning service personnel may also not be given the time required for their neurological function to recover. For example, a significant increase in errors of memory and attention (scanned before and 4 months after combat deployment) were seen in Dutch military deployed to Afghanistan compared to those not deployed (22 deployed, 26 in training)\textsuperscript{12}. Deployed personnel also exhibited weaker neurobiological connections in these areas and pre-frontal cortex brain tissue damage compared to non-deployed, not related to blast impacts or other causes. Most reduction in functioning was reversed after 1.5 years, except for the connection strength between the midbrain and prefrontal cortex, potentially indicative of ongoing function reduction resulting in a permanent heightened susceptibility to future stress\textsuperscript{12}. ADF re-deployment rates are often more frequent than a minimum of 1.5 years and that recommended by the intergovernmental military
alliance North Atlantic Treaty Organisation (NATO). Deployments are also longer than experienced by the ADF previously.

In addition to the neurological impacts outlined above, combat-induced stress is defined as “any persistent psychological difficulty resulting from operational duties” (p. 266). The definition includes anxiety, depression and PTSD. Combat stress can result from the required significant physiological and mental preparation for military service becoming maladaptive once such preparation is no longer required. It is not only the cumulative trauma from combat but the readjustment process required after returning from combat which often results in experiences of aggression, emotion dissociation and hyper-arousal and -vigilance. Such states are all required functions within deployment, but when maintained long-term, are indicators of PTSD and detrimental to health. For many, the autonomic nervous system threat-arousal response is chronically heightened after returning from combat, resulting in cumulative physiological effects of stress known as allostatic load, greatly increasing risk of physical and mental illness for veterans. Difficult to unlearn, such states affect long-term individual and relationship functioning, including affect shut-down to avoid anger, and treatment seeking, engagement and therapy success.

**Therapist-led Psychological Treatment for Veterans**

**Current Standard Practice and Treatment Reviews**

Individual prolonged-exposure (PE) and trauma-focused cognitive behaviour therapy (CBT) are recommended first-line interventions for both military-induced PTSD and PTSD in Australian non-military populations. Although it is controversial to compare veteran experiences across countries, international studies have been included in the current review given the small number of Australian studies available relating to CRPD veterans. Rothbaum et al. conducted a review of evidence-based treatments for CRPD veterans with PTSD from the United States (U.S.) Iraq and Afghanistan deployments. The authors concluded that CBT exhibited the greatest empirical support with non-military populations. Warfe et al. reviewed the international literature into individual PE therapy, cognitive therapy and cognitive restructuring for CRPD veterans. Twenty systematic reviews, 34 randomised controlled trials (RCTs) and other non-RCT studies were found which supported the recommendations above; however very few used CRPD veteran or current serving military.
Primary Veteran and Military Population Treatment Studies

Twelve studies into therapeutic treatments with CRPD veterans were found and summarised in Table 1. Four were RCTs with two incorporating non-treatment waitlist controls. Four of the longitudinal studies involved either U. S. or Australian combat veterans returned from Iraq or Afghanistan deployment and Vietnam veterans. Two studies used only Vietnam veterans, while five did not indicate deployment era. All included predominantly male participants. Therefore, generalizability limitations exist.

One small-sample RCT showed individual PE therapy was effective for reducing PTSD symptoms for Vietnam veterans from the US, but not in reducing behavioural avoidance or increased sleep\(^{25}\). Group PE therapy has been found to be associated with reductions in PTSD symptoms and depression and improved functioning in sleep for Vietnam, Gulf War and Iraqi deployed U. S. veterans, with one study showing 36% no longer met PTSD diagnosis criteria\(^{26,27}\). Both studies were small with no control group. Khoo, Dent and Oei’s longitudinal study found that self-reported reductions in PTSD, depression, anxiety, anger, alcohol use, and quality of life were maintained at 12-month post-group CBT treatment for 496 veterans, with only marriage satisfaction not significantly different\(^{28}\). Changes were independent of concurrent individual treatment.

Two studies found U. S. veterans receiving individual cognitive processing therapy (CPT) exhibited reduced PTSD symptoms more rapidly, and decreased avoidance, compared to waitlist controls\(^{29}\). Morland et al. found that group therapy was effective regardless of the mode (face-to-face or via teleconference)\(^{30}\). Blevins, Roca and Spencer noted 63 U. S. veterans who attended an acceptance and commitment therapy (ACT) workshop showed significantly less depression, anxiety and PTSD symptoms and increased relationship satisfaction when compared to control participants\(^{31}\). Providing PE via virtual reality has also been researched. Reger and Gahm present a case study\(^{32}\) and a U.S. RCT with 19 active military personnel from Iraqi and Afghanistan deployments showed significant reductions in PTSD symptoms for 70% of participants compared to treatment as usual, although no overall group differences were evident\(^{33}\).

Chard et al. found positive therapeutic change in U. S. veterans from the Iraqi, Afghani and Vietnam wars involved in individual PE therapy\(^{34}\). Their study showed younger veterans exhibited a
## Table 1.

**Summary of quantitative research into main treatment approaches (non-POST) for veterans experiencing combat-related stress.**

<table>
<thead>
<tr>
<th>Authors and year</th>
<th>Research trial</th>
<th>Intervention</th>
<th>Veteran population</th>
<th>Main findings</th>
<th>P value</th>
<th>Effect size d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beidel et al.25 2011 U.S.</td>
<td>RCT (no treatment control)</td>
<td>Individual - ‘trauma management therapy’ exposure therapy (14 weeks) + group social emotional rehab (14 sessions) vs. individual exposure</td>
<td>30 male Vietnam veterans with chronic PTSD. 14 TMT, 16 control.</td>
<td>Post-treatment: Reduction in PTSD symptoms (CAPS), anxiety and depression both groups Increase in social activity for TMT No difference: hours of sleep or behavioural avoidance</td>
<td>p&lt;0.001</td>
<td>Not measured</td>
</tr>
<tr>
<td>Blevins et al.31 2011 U.S.</td>
<td>Longitudinal with control</td>
<td>Acceptance and Commitment Therapy group workshop</td>
<td>144 veterans (63 ACT, 81 control)</td>
<td>Significant declines in depression, and increased relationship satisfaction</td>
<td>p &lt; 0.01</td>
<td>Not measured</td>
</tr>
<tr>
<td>Creamer et al.72 2006 AUST</td>
<td>Longitudinal 2 years post-treatment</td>
<td>12 week group DVA ‘specialised veteran PTSD treatment’ + 6-12 individual sessions</td>
<td>1508 Vietnam veterans at 24 months</td>
<td>2 years post-treatment: Sustained reduction from baseline PTSD Anxiety Depression</td>
<td>p&lt;0.001</td>
<td>0.85</td>
</tr>
<tr>
<td>Khoo et al.28 2011 AUST</td>
<td>Longitudinal</td>
<td>Group CBT (6 weeks)</td>
<td>496 veterans</td>
<td>At 12 months compared to baseline: Reduced PTSD, depression, anxiety, anger, alcohol use, increased quality of life. No change marriage satisfaction</td>
<td>PTSD = 0.68 Others = med MS = 0.2</td>
<td></td>
</tr>
<tr>
<td>Macdonald et al.29 2011 U.S.</td>
<td>RCT</td>
<td>Individual Cognitive processing therapy (12 sessions over 6 weeks) vs waitlist</td>
<td>60 veterans with PTSD (6 female)</td>
<td>3, 6 and 10 week measures: more rapid decline of PTSD symptoms, decrease in avoidance</td>
<td>p=0.03</td>
<td>0.05</td>
</tr>
<tr>
<td>McGuire et al.22 2011 AUST</td>
<td>Longitudinal</td>
<td>DVA funded PTSD group treatment programs</td>
<td>984 veterans</td>
<td>9 months compared to baseline: Significant reduction of scores PTSD checklist military version, increased Qual of Life psychological, family functioning and reduced Anxiety and Depression and anger</td>
<td>p=0.0001</td>
<td>P=0.004</td>
</tr>
<tr>
<td>Authors and year</td>
<td>Research trial</td>
<td>Intervention</td>
<td>Veteran population</td>
<td>Main findings</td>
<td>P value</td>
<td>Effect size d</td>
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<tr>
<td>McLay et al.22</td>
<td>RCT</td>
<td>Virtual reality exposure therapy once a week over 10 weeks.</td>
<td>19 active military personnel Iraqi and Afghanistan conflicts</td>
<td>Significant reduction in PTSD in 70% of virtual reality participant symptoms measured by CAPS, compared to treatment as usual participants whose symptoms had changed. Mean PTSD reduced significantly however no overall difference before or after treatment between groups.</td>
<td>p&lt;0.01</td>
<td></td>
</tr>
<tr>
<td>Morland et al.30</td>
<td>RCT (no treatment control)</td>
<td>Group cognitive processing therapy. Face to face or teleconference (12 sessions over 6 weeks).</td>
<td>10 veterans (5 face to face; 5 teleconference).</td>
<td>No difference between groups. Reductions in PTSD symptoms post-treatment, and at 6 month followup</td>
<td>p&gt;0.05</td>
<td>Not measured</td>
</tr>
<tr>
<td>Ready et al.26</td>
<td>Longitudinal</td>
<td>Group-based exposure therapy 16 weeks, twice a week</td>
<td>30 (3 groups of 10) 27 Vietnam, 2 Iraq, 1 Gulf war/ Panama</td>
<td>Follow up 7-11 months post-treatment: Ptsd symptoms sign lower. Reduction in depression. 36% no longer met criteria for PTSD.</td>
<td>0.89</td>
<td>0.70</td>
</tr>
<tr>
<td>Swanson et al.27</td>
<td>Longitudinal</td>
<td>Group CBT exposure therapy and rescripting (10 sessions)</td>
<td>10 Vietnam and Gulf war veterans</td>
<td>Last session compared to baseline: increased sleep efficiency increased sleep onset latency reduced insomnia reduced weekly nightmare distress reduced nightmare frequency increased sleep quality reductions in PTSD</td>
<td>1.01</td>
<td>0.89 1.14 1.7 0.49 0.73 0.42</td>
</tr>
<tr>
<td>Yoder et al.73</td>
<td>Longitudinal between-groups</td>
<td>Individual Prolonged Exposure therapy (varied session length)</td>
<td>112 total (9 female) Vietnam (34), Iraq and Afghanistan (61) Gulf War (17)</td>
<td>All groups – significant reduction in PTSD symptoms. Gulf war veterans, reduced rate of change compared to other veteran groups.</td>
<td>p&lt;0.01</td>
<td>Medium</td>
</tr>
</tbody>
</table>

Note: $d=\text{Cohen's }d$ for effect size (Cohen, 1988) $0.2=\text{small}, 0.5=\text{medium, }0.8=\text{large}$
trend toward reduced PTSD post-CPT compared to Vietnam veterans after accounting for sessions attended and initial PTSD severity, indicating that contemporary veterans may be more responsive to treatment regardless of symptoms severity. This result could also indicate that older veterans had become symptom entrenched and less amicable to treatment.

To summarise, all of the studies found show reductions in PTSD or improvement in wellbeing. Studies that utilised CRPD veteran participants had a small sample size, used a convenience sample and no control group, increasing risk of bias and errors. However, most are of clinical significance supporting the use of individual PE therapy and cognitive processing treatments with veterans. Although the recommendations are clear regarding treatment with veterans, this appears based predominantly on empirical research with non-military populations generalised to military and veteran groups. Although supporting the current first-line recommendations for standard practice with veterans, several review authors concluded that research into therapies directly utilising military populations is insufficient. Available trials were mostly with Vietnam veterans and limited in sample size, limiting generalizability to the CRPD population\(^\text{11,15,22}\).

**Reluctance to Seek Therapist-led Treatment and Reduced Responsiveness**

Despite empirical support for the treatments outlined above, evidence suggests that many CRPD veterans affected by PTSD may not approach or respond to individual therapist-led treatment. Help-seeking may be impaired by attempts to maintain a self-view of the strong warrior, fear of prejudice in current or future work opportunities, and mistrust factors regarding therapist likeness-to-self, given military camaraderie and group identity\(^\text{13,35,36}\). In addition, if veterans perceive indifferent or ignorant responses when initially help-seeking this may hinder future help-seeking and treatment responsiveness\(^\text{17,37}\). Military culture promotes emotional toughness, strength and camaraderie where mental illness is seen as malingering or weakness\(^\text{17,19}\), inconsistent with help-seeking behaviour and treatment responsiveness. While necessary for survival in combat, such a culture often means that acknowledging a mental health issue is counter to one’s self-identity\(^\text{15}\), creating social isolation in dealing with combat experience\(^\text{16,17}\). The MHWS showed for example that 48.8% of current serving military personnel who met the criteria for PTSD were not receiving treatment. Of those meeting
criteria for a generalised anxiety disorder, 24.4\% were not receiving treatment, nor were 85\% who meet criteria for an alcohol disorder\textsuperscript{6}.

Creamer and Forbes\textsuperscript{15} concluded that psychological treatments, although beneficial, appeared less effective for veterans than for non-veteran populations. Creamer et al.\textsuperscript{19} observed that effect sizes for change for veteran populations are often lower than for non-veteran populations for the same treatment approach. Creamer and Forbes’ review also indicated that the military training and requirement to shut-off emotion to be able to complete combat tasks is a key factor in reduced treatment response\textsuperscript{15}. Arousal mal-adaption is seen in the pairing of stress with anger, and in using numbing and dissociation to avoid anger in civilian life, including with loved ones. They argue that veterans with mental illness may show less responsiveness to PE therapies until the arousal is addressed first, thus general CBT and some PE therapy approaches may be ineffective\textsuperscript{26}. In addition, Garcia et al. showed in their study that 68\% of 117 U. S. veterans returning from Iraq and Afghanistan terminated treatment before completion\textsuperscript{38}. This highlights the need to consider carefully using general CBT and PE approaches with this unique group.

Although autobiographies such as Exit Wounds\textsuperscript{37} and other public media exposures may slowly change the stigma of mental illness in the Australian military\textsuperscript{39}, the unique experience of CRPD veterans and the barriers to treatment response indicates a need to explore the evidence-base for innovative interventions provided outside of the clinical and hospital context. There may be intricacies in the veteran experience which are difficult to capture in quantitative research regarding lowered treatment responses. In particular, peer and outdoor group approaches for treating PTSD and depression may illuminate effective alternative treatment approaches that will engage veterans.

**Evidence for POST with Non-military Populations**

**Peer Support Intervention Evaluation**

Peer support is a widely used intervention for mental illness within non-military populations. Table 2 summarises 15 research studies found measuring peer support approaches with non-military populations. In the U.S. 47\% of 13,513 substance abuse treatment facilities surveyed in 2009 offered some form of peer-support service\textsuperscript{40}. It is also estimated that more people in the U.S. use self-help
<table>
<thead>
<tr>
<th>Authors and year</th>
<th>Research trial</th>
<th>Intervention</th>
<th>Population</th>
<th>Main Findings</th>
<th>P value</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berrick et al. 74 2011 U.S.</td>
<td>Qualitative</td>
<td>Parents reunified with children mentor for parents first entering child protection system</td>
<td>25 mentees, 6 mentors.</td>
<td>Themes - value of shared experience, communication, support. Both mentors and mentees experienced benefit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dorgo et al. 45 2009 U.S.</td>
<td>RCT</td>
<td>Peer mentor groups (1:1) vs qualified student led group. Fitness session content the same (14 weeks)</td>
<td>131 older adults – 87 peer mentor, 44 student mentor condition</td>
<td>At 14 weeks: Self-reported physical, mental and social functioning improved for peer mentored except for bodily pain. Change but not significant for student mentored. Both groups improved fitness significantly.</td>
<td>p&lt;0.05</td>
<td>p&gt;0.06</td>
</tr>
<tr>
<td>Herrera, Grossman, Kauh &amp; McMaken 75 2011 U.S.</td>
<td>RCT</td>
<td>Mentoring Big Brothers Big Sisters</td>
<td>1139 students age 9-15 from 10 schools. 554 mentors. Self and teacher reports and school academic records.</td>
<td>Presence of a special adult only significant change from baseline which lasted over time. 9 months: Short term sign better with academic performance and perceptions of abilities. 1.5 years compared to baseline: no impact on effort, self-worth, relationships w parents peers or teachers, rate of problem behaviour.</td>
<td>p&lt;0.01</td>
<td>p&lt;0.03, p&lt;0.01</td>
</tr>
<tr>
<td>Ljungberg, Kroll, Libin &amp; Gordon 59 2011 U.S.</td>
<td>Longitudinal (no control)</td>
<td>Peer mentoring (1 year weekly, fortnightly then weekly contact)</td>
<td>24 patients with spinal cord injury. Self-report to mentor</td>
<td>At 6 months: Reduction in Dr visits pre-test, reduction in self-reported medical complications. No sign difference fro self-efficacy score</td>
<td>p&lt;0.01</td>
<td>p&lt;0.05</td>
</tr>
<tr>
<td>Lucksted et al. 43 2009 U.S.</td>
<td>Longitudinal (no control)</td>
<td>Peer mentor program (9 2hr group sessions led by mentors).</td>
<td>138 with diagnosed mental illness - bipolar disorder, depression, schizophrenia, schizoaffective</td>
<td>Immediately after treatment compared to baseline: Increased confidence re own knowledge and management of illness, less powerlessness, more confident re decision making, connection with others. No difference for relationships, attitude to medication, spirituality, money management, housing planning, education or employment planning.</td>
<td>p&lt;0.01</td>
<td></td>
</tr>
<tr>
<td>Ott and Doyle 76 2005 U.S.</td>
<td>Longitudinal (no control)</td>
<td>Social norming workshop re peer substance use.</td>
<td>414 students across school.</td>
<td>One week later compared to baseline: Changes in perception of norm for smoking cigs, alc and marij towards more accurate rate.</td>
<td>p&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Purcell et al. 77 2007 U.S.</td>
<td>RCT</td>
<td>Peer mentor groups for HIV transmission reduction – or video discussion (10 sessions)</td>
<td>966 injection drug users.</td>
<td>At 12 months vs baseline: Both groups sign reduction in injection and sexual risk behaviours. No sign difference between groups. No change medical outcomes. No change using care or adherence to medication.</td>
<td>p &lt; 0.01</td>
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<td>Authors and year</td>
<td>Research trial</td>
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<td>Population</td>
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<tr>
<td>Robinson and Niemer</td>
<td>Longitudinal Controlled</td>
<td>Peer mentor tutoring vs no tutoring (1 year weekly contact) 1:5 ratio.</td>
<td>97 ‘at-risk’ nursing student participants vs control (rest of that year level (number not defined)</td>
<td>Peer mentor group - increased academic performances – grades – test scores, significantly compared to controls</td>
<td>p&lt;0.001</td>
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<tr>
<td>Rowe et al.**</td>
<td>RCT longitudinal</td>
<td>Group treatment peer support and citizen training + standard vs standard treatment (8 weeks course, 4 months peer support)</td>
<td>114 adults with drug use diagnosis and criminal history. 41 control, 73 group treatment</td>
<td>12 months post-treatment: Peer group participants - reduced alcohol use Drug use and criminal charged reduced in both groups,</td>
<td>p&lt; 0.005 p&lt;0.05 p&lt;0.05</td>
<td>0.05</td>
</tr>
<tr>
<td>Rowe et al.**</td>
<td>Qualitative</td>
<td>Group treatment with peer mentorship, 5 month citizens program group becomes participant led. 21 classes</td>
<td>3 case studies</td>
<td>Positive affect on substance use, criminal justice contact, transition to community supports, community living for people with dual-diagnosis and criminal justice history.</td>
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<tr>
<td>Sledge et al.**</td>
<td>RCT</td>
<td>Peer mentoring with standard care vs standard care. Ongoing weekly contact 9 months</td>
<td>74 psychiatric patients (38 peer mentor condition, 36 standard care). 8 mentors.</td>
<td>Sign less re-hospitalisations at 9 months for peer mentored patients. Reduced days in hospital.</td>
<td>p=0.042 p&lt;0.03</td>
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<tr>
<td>Smith**</td>
<td>RCT One post-test survey</td>
<td>Student social norming lecture re alcohol use.</td>
<td>774 students – 390 standard, 384 standard + lecture</td>
<td>No sign difference between groups re personal drinking self-report.</td>
<td>p=0.56 and p=0.62</td>
<td>79% power to find d=0.2.</td>
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<tr>
<td>Stewart, Kushner, Greaves, Letourneau, Spitzer, Boscoe</td>
<td>Longitudinal</td>
<td>Group and one-one peer support (14 weeks)</td>
<td>23 women nicotine addicted</td>
<td>3 months post-treatment: Self-reported decrease in tobacco and nicotine use and dependence, maintained No difference self-efficacy More support predicted better outcome in therapy – reduction in PTSD. Not helpful for relaxation condition control. Accounted for 33% of variance.</td>
<td>p= 0.002</td>
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<tr>
<td>Thrasher et al.*</td>
<td>RCT</td>
<td>Social support factor for exposure therapy (20 people), cognitive restricting treatment and ET (19), CR (18) vs relaxation control (20).</td>
<td>77 adults with PTSD</td>
<td></td>
<td>p&lt; 0.001</td>
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<tr>
<td>Tracy et al.*</td>
<td>Longitudinal (no control)</td>
<td>Peer mentor weekly group and individual contact (12 week)</td>
<td>30 participants. 10 mentors. Both diagnosis of alcohol abuse, mentors 6 months abstinent.</td>
<td>From baseline to week 12 Frequency of alcohol use reduced drug use reduced</td>
<td>p&lt;0.01 p&lt;0.01</td>
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Note: $d$= Cohen’s $d$ for effect size (Cohen, 1988)** 0.2 = small, 0.5 = medium, 0.8 = large
groups for substance abuse than any other mental health support combined. They found that self-help participation was associated with reduced substance use, increased psychosocial functioning, and reduced health care costs.

Hogan, Linden & Najarian conducted a review of 100 studies into social support interventions addressing substance abuse, parenting skills, weight loss and cancer. They concluded there was some support for the usefulness of social support. However, no studies were rigorous enough to be ranked as clearly efficacious. They noted issues with study generalizability, lack of control groups and randomisation. However the authors outlined that social support interventions were generally better than no treatment. Twelve studies showed superior/equal to alternative treatments, 22 had partial benefits, 17 had no benefits and in 2 studies participants got worse, indicating the importance of matching intervention type to need and mindfulness of the setup of groups.

Lucksted et al. conducted a longitudinal study using a peer support intervention for 138 people with mental illness (bipolar, schizophrenia and other diagnoses). They found that participation was significantly associated with increased confidence regarding knowledge and management of their illness, less powerlessness, more confidence regarding decision making, and greater connection with others. Many participants wanted to become involved in advocacy and educating others as a result of participation. A study by Sledge et al. showed peer support was associated with significantly reduced re-hospitalisations and number of days in hospital after 9 months of support for patients with psychiatric diagnosis as compared to standard care. They showed peer support was an effective adjunct to treatment to engage mental health patients with social network preventing relapse. Another randomised trial compared standard clinical treatment to treatment plus group intervention involving peer support and citizen training for 114 adults with dual-diagnosis mental health disorders and criminal history. Although drug use and criminal charges reduced in both groups, the study showed that peer support was effective for decreased alcohol use beyond standard treatment at 6 months and at 12 months post treatment.

One study in particular outlined how peer-led approaches can be more effective than professional-led. Dorgo, Robinson & Bader conducted a randomised control study into peer-support for 131 older adults when an identical fitness program was provided either by peers or by a qualified
student\textsuperscript{46}. Although both groups’ fitness improved significantly, peer-led fitness groups showed significantly better outcomes in self-reported physical and mental wellbeing, social functioning, general health, vitality and ability to carry out physical and emotional roles. They speculated that peer-led interventions may increase adherence to programs, providing positive role modelling and dispelling negative stereotypes about age and ability.

The presence of supportive social relationships alone has been shown to predict better outcomes in therapy for PTSD exposure therapy and cognitive restructuring treatments\textsuperscript{47}. These results strengthen the argument that peer support is valuable in role modelling, health, challenging stigma, and isolation around PTSD experiences. Such approaches may be particularly beneficial if the participant identifying as a group member feel ostracized or judged by the wider society, which may be the case for many veterans. In such situations, peer-led groups may decrease isolation and enable trust and connection with others\textsuperscript{11,15,24}.

**Outdoor Therapy Intervention Evaluation**

Various U. S. review studies have shown outdoor therapy with at-risk youth is associated with increased self-worth, self-regulation, physical health effects, reduction in anxiety and stress and sleep issues, improved participant social skills, improved critical thinking and reductions in antisocial/delinquent behaviour\textsuperscript{48-50}. There is also some evidence of reduced depression and drug and alcohol misuse\textsuperscript{20,50}. Greater outcomes were seen for participants involved in peer leadership opportunities\textsuperscript{50}.

An Australian longitudinal evaluation of Operation Flinders (OF), an 8-day camp for at-risk youth, found that participants at higher risk of offending showed significant improvement on self-reports for self-esteem, anger, attitude toward police and de-identification with criminals compared to those at lower risk\textsuperscript{51}. Raymond evaluated OF, using a non-randomised control group design comparing 58 participants with 55 non-participants and showed that although improvements on most measures were seen, changes were not significant compared to controls\textsuperscript{52}.

Very few studies have been completed with non-youth. Walker et al.\textsuperscript{53} conducted an evaluation of an Australian outdoor adventure program for 11 adults with severe brain injury and found a trend toward improved mental health. The 18-month program involved a 9-day camp run in conjunction with Outward Bound Australia (OBA). Results were not statistically significant, although
qualitative personal goal achievement was attained for 10 of the 11 participants. Lastly, Stuhlmiller completed a qualitative evaluation of an Australian camp to reduce mental health stigma among student nurses. Two hundred students and 100 mental health service consumers participated in the week-long camp. Student nurse attitudes about mental health consumers shifted in a positive direction.

Lubans et al.’s review of 15 camp evaluations for at-risk youth concluded that while outdoor adventure programs had the potential to improve wellbeing, the findings were mixed, due to research design limitations resulting in a high risk of bias. Therefore, empirically determining program efficacy was difficult in comparison to other approaches which have involved more controlled research.

**POST Approaches for the Veteran Population**

**Therapist-led Outdoor Therapy Intervention Evaluations**

There have been several research studies into therapist-led outdoor therapy for post-deployed veterans. Table 3 summarises research into both outdoor therapy and peer support utilising military populations.

Hyer et al. published results from a control-group evaluation of Outward Bound for Veterans Program (OBVP) for veterans with chronic combat-PTSD. The camp is non-clinical, focused on outdoor activity and developing leadership qualities. Participants included 108 in OBVP and 111 in clinical hospital group therapy and psychiatric support. All were interviewed using high reliability clinical measures before treatment, directly after, and at exit from treatment. They found no significant difference between those in the camp treatment versus control group, indicating OBVP was equivalent to clinical therapy. Results indicated greater effectiveness for those with lower clinical PTSD scores. Participants reported positive changes to self-esteem and indicated the important role social support played for their wellbeing.

More recently, Ewert et al. evaluated OBVP, assessing 142 CRPD personnel deployed to Iraq and Afghanistan and 175 non-veterans post-participation using scale course evaluation questions. The assessment tool was non-clinical and with reliability or validity reported. Veterans showed significantly higher levels of agreement for increased confidence, physical ability, emotional state and success compared to non-veteran participants, and lower levels in leadership skills, compassion, teamwork and accepting responsibility compared to non-veterans. Ewert et al. also studied 266
Table 3.

Summary of quantitative and qualitative research into peer mentor, outdoor and POST approaches for military populations.

<table>
<thead>
<tr>
<th>Authors and year</th>
<th>Research trial</th>
<th>Intervention</th>
<th>Population</th>
<th>Measures</th>
<th>Main Findings</th>
<th>P value</th>
<th>Effect size</th>
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<tbody>
<tr>
<td>ACPMH(^*) 2010 AUST</td>
<td>Longitudinal and qualitative program evaluation</td>
<td>Trojan’s Trek 6 day peer outdoor support therapy (POST)</td>
<td>10 participants and spouses from TT 2009.</td>
<td>DASS21 AUDIT PNI HILDA Life Satisfaction. Self-efficacy GSE. Qualitative Interviews.</td>
<td>Trend toward mental health improvement. 50% completed followup questionnaires. Those who did not complete follow-up showed initial higher ratings of unhappiness with life than those who completed follow-up questionnaires. Effective in addressing participant goals for managing day to day problems and achieving life goals such as managing anger and improving communication. 46% serving members or receiving veteran pensions. 54% retired members. OSISS only source of continuous social support for retiring personnel with OSI</td>
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<td>Department of National Defence and Veterans Affairs Canada(^*) 2005 Canada</td>
<td>Program evaluation</td>
<td>Operational Stress Injury Social Support (OSISS)</td>
<td>900+ current serving and veterans.</td>
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<tr>
<td>Dustin et al.(^*) 2011 U.S.</td>
<td>Qualitative</td>
<td>River Running, 4 day outdoor therapy river camp (non-peer)</td>
<td>10 male, 3 female veterans with PTSD diagnosis.</td>
<td>method not mentioned</td>
<td>Re-experiencing of traumas appeared to diminish over the time of the camp for participants from journal entries, avoidance and numbing replaced with ‘joyful involvement’ (pg. 335) in the trip experience, hyper-arousal replaced with fatigue from physical activity.</td>
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<tr>
<td>Ewert et al.(^*) 2010 U.S.</td>
<td>Control group post-program comparison</td>
<td>Outward Bound for Veterans Program (OBVP) non-peer. Wilderness-based courses—natural world, teamwork, challenge-based activity.</td>
<td>142 Iraqi and Afghanistan conflict veterans. 175 non-veterans.</td>
<td>9 likert-scale course evaluation questions (non-clinical and no reliability or validity testing).</td>
<td>Veterans showed higher levels of agreement for increased confidence, physical ability, emotional state and success compared to non-veteran participants, and lower levels in leadership skills, compassion, teamwork and accepting responsibility compared to non-veterans</td>
<td>Not given</td>
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<td>Authors and year</td>
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<tr>
<td>Ewert et al. 2010 U.S. and Ewert, Van Puymbroeck, Frankel &amp; Overholt 2011 USA</td>
<td>Longitudinal survey</td>
<td>OBVP</td>
<td>266 veterans from 32 difference OBVP sessions</td>
<td>11 item Outward Bound Outcomes instrument (no reliability or validity published). Sense of Coherence (SOC)</td>
<td>Significant change of between p= .05 or 0.01 levels with effect sizes from .26 to .74 for 11 leadership quality constructs. The authors do not explain which constructs showed most significant change, and in what direction. Effect size range from .40- .95 (not defined to constructs) Sense of Coherence improvement Alpha = .86</td>
<td>p=0.05</td>
<td>0.26-0.74</td>
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<tr>
<td>Greden et al. 2010 U.S.</td>
<td>Participation surveys</td>
<td>Buddy to Buddy trains veterans to provide peer support and links to resources to other CRPD veterans</td>
<td>926 returned deployed current serving personnel and veterans and spouses.</td>
<td>Survey, interviews and program evaluation.</td>
<td>50% stated they had used resources/services suggested by their buddy and more than 20% self-referred to formal treatment as a result of participation who were not previously accessing any formal treatment</td>
<td>p=0.01</td>
<td>0.40-0.95</td>
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<tr>
<td>Hawkins et al. 2011 U.S.</td>
<td>Qualitative</td>
<td>3 day Paralympic military sports camp for 50 current serving personnel with physical injury. Non-peer</td>
<td>10 veterans interviewed from Iraqi, Afghanistan deployments, age 20-40.</td>
<td>Semistructured interviews, transcribed by three researchers.</td>
<td>Social comparison assisted participant engagement and change with improvements in sense of competence and autonomy. Themes from participation in camp: (a) perceptions of disability and normalization (see beyond injury, self-acceptance); (b) finding motivation (through participation and through social comparison); (c) experiencing a sense of relatedness and social connection (with others in similar situation and to family); (d) establishing a connection with previous interests (transfer of skills confidence) (e) improved health, fitness, and general well-being; (f) improved sense of competence; and (g) increased autonomy (ie freedom of choice).</td>
<td>-</td>
<td>0.51</td>
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<td>Authors and year</td>
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<td>Hyer et al. 1996 U.S.</td>
<td>Controlled group longitudinal</td>
<td>OBVP versus hospital group therapy. Non-peer, focusing on outdoor activity and developing leadership qualities. Non clinical</td>
<td>108 OBVP participants, 111 hospital group participants, from two hospitals.</td>
<td>Combat Exposure Scale, Mississippi Scale for Combat Related PTSD, Impact of Events Scale, Hamilton Depression and Anxiety scales. SCL-90 Rotter Locus of Control, State Trait Anxiety Scale.</td>
<td>Pre-, post and follow-up. No significant difference between those in the camp treatment versus control group. However, results indicated greater effectiveness for those with lower clinical PTSD scores and qualitatively measured participants showed positive changes to self-esteem and indicated the important role social support played for participant’s wellbeing.</td>
<td>ANCOVA – no sign. group effects.</td>
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<tr>
<td>Lebeau et al. 2008 Canada</td>
<td>Qualitative</td>
<td>Operational Stress Injury Social Support (OSISS)</td>
<td>26 current serving personnel with serious OSI, 8 family members</td>
<td>Focus group content analysis</td>
<td>Main themes for areas of need: peer support, family support, homecoming and recovery, assisting officers, medical care, reservists needs, decompression, and prioritizing of injuries.</td>
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<tr>
<td>Lundberg et al. 2011 U.S.</td>
<td>Quantitative longitudinal</td>
<td>Higher Ground. Paralympic adaptive sports one week therapy program. Non-peer</td>
<td>18 Iraqi and Afghanistan conflict injured veterans</td>
<td>WHO’s Quality of Life Assessment. Profile of Mood States-Brief. Perceived Competence Scale.</td>
<td>Significant reductions in self-reported mood disturbance, tension, depression and anger post-camp compared to pre-camp. Increase in perceived competence No significant difference was found for self-reported quality of life in general, or for physical health, social relationships or environment. Psychological health of QOL showed a significant increase. Alpha = .0038</td>
<td>All p&lt;0.001 p= 0.001 p =0.044 p= 0.024</td>
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<tr>
<td>Mowatt and Bennett 2011 U.S.</td>
<td>Qualitative</td>
<td>Rivers of Recovery outdoor therapy run by Vietnam vet’s for CRPD veterans. POST program</td>
<td>67 male participants</td>
<td>Analysis of letters</td>
<td>Four themes: camaraderie is necessary while receiving treatment, there was ongoing regret experienced by veterans, reflection was involved in process of memory reconciliation, and participants saw benefits from involvement in outdoor recreational activity.</td>
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<tr>
<td>Mosack et al. 2012 U.S.</td>
<td>1 year health management program, peer-led sessions.</td>
<td>219 veterans, hypertensive</td>
<td>Participation rates</td>
<td>No outcome data available. Model of engagement presented.</td>
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<tr>
<td>Authors and year</td>
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<td>Pietrzak et al.⁴ 2010 U.S.</td>
<td>Survey correlation</td>
<td>Once-off survey questionnaire</td>
<td>272 Iraqi and Afghanistan conflict veterans</td>
<td>PTSD and depression screening measures, and questionnaires assessing resilience, social support, and psychosocial functioning.</td>
<td>Self-reported lower unit support and post-deployment social support associated with increased PTSD and depressive symptoms, decreased resilience and psychosocial functioning. Path analyses: resilience fully mediated the association between unit support and PTSD and depressive symptoms. Post-deployment social support partially mediated the association between PTSD and depressive symptoms and psychosocial functioning.</td>
<td>p&lt; 0.001</td>
<td></td>
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<tr>
<td>Price et al.²³ 2011 U.S.</td>
<td>RCT + correlation survey</td>
<td>Social support measured for participants in individual exposure therapy. In-person or telehealth (8 weeks).</td>
<td>69 contemporary veterans from Iraq and Afghanistan conflicts experiencing PTSD symptoms.</td>
<td>Medical Outcomes Study Social Support Survey Form (MOSSS).</td>
<td>At 8 weeks compared to baseline: Increased self-reported ‘emotional/information support’ and ‘positive social interactions’ associated with greater rate of PTSD symptom reduction. No significant associations for ‘affectionate’ or ‘tangible’ support.</td>
<td>p&lt;0.05</td>
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<tr>
<td>Wynn, G. (n. d.)⁷¹ U.S.</td>
<td>Longitudinal therapy retreat for CRPD veterans led by Vietnam veterans. POST program</td>
<td>Pos Affect and Neg Affect Schedule (state mood), Brief Symptom Inventory – dep, anx and somatic stress in past week. Perceptual Stress Scale, PTSD Checklist Military Version, Pittsburgh Sleep Quality Inventory.</td>
<td>67 men, 2 women returned deployed veterans with PTSD diagnosis</td>
<td>1 month prior, last day of retreat, 1 month follow up.</td>
<td>Significant reductions in perceived stress, PTSD symptoms (19% reduction, with some no longer meeting PTSD diagnosis) and sleep issues, compared to the initial baseline prior to camp participation (Prestwich, 2010), and significant reductions in anxiety, depression and somatic stress symptoms and also negative mood states, with a significant increase in positive mood states. Results also showed a significant reduction in daily cortisol production (stress measure) between the first and second days for 23 participants as measured by salivary cortisol, urinary catecholamines (e.g., epinephrine and norepinephrine) and immune function (salivary immunoglobulins).</td>
<td>p&lt;0.001</td>
<td>p&lt;0.001.</td>
</tr>
<tr>
<td>Authors and year</td>
<td>Research trial</td>
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<tr>
<td>Travis et al. 2010 U.S.</td>
<td>Longitudinal</td>
<td>Telephone based mutual peer support (12 weeks). Patients with depressive symptoms paired together, used telephone computer platform to contact.</td>
<td>Community treatment centres 22 veterans, 32 non veterans</td>
<td>BDI-II Quality of Life Enjoyment and Satisfaction Questionnaire Short Form (Q-LES-Q-SF) SF-12 – health related quality of life General Self-Efficacy Scale (GSE)</td>
<td>At 12 weeks compared to baseline: BDI score reduced Improvement in perception of disability Qual of life increased Psychological health increased Qualitative – found meaning and support. Veterans significantly greater adherence – less drop out.</td>
<td>p&lt; 0.02</td>
<td>p=0.02  0.04  0.001  p &lt; 0.0001</td>
</tr>
<tr>
<td>Westwood et al. 2013 Canada</td>
<td>Longitudinal and qualitative</td>
<td>Groups of 6-8 veterans, residential program 80 hours over weekends therapy ‘course’. Peer support and exposure-therapy focused.</td>
<td>18 male military personnel aged 32-73 years old, two peer facilitators with three non-military facilitators</td>
<td>Trauma Symptom Inventory, Beck Depression Inventory II and Self-Esteem Rating Scale. Interviews for content analysis</td>
<td>Before, after and three months follow up measures. Trauma symptom inventory: A reduction in Tension Reduction behaviour, Anger/Irritability Dysfunctional sexual behaviour Impaired self-reference Anxious arousal Depression Defensive avoidance Reduction in BDI score between first and second administration and first and third administration Increase in self-esteem between first and second administration and first and third administration No significant change in depression between second and follow up administration.</td>
<td>0.95  0.45  0.55  0.44  0.19  0.19  0.2  0.75  0.55  0.19  0.17  0.07</td>
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</table>

Note: d = Cohen’s d for effect size (Cohen, 1988) 0.2 = small, 0.5 = medium, 0.8 = large
OBVP veteran participants before and after participation, using the same assessment tool, and showed significant change of between $p = .05$ and $p = 0.01$ with effect sizes from .26 to .74 for 11 leadership quality constructs. The authors did not explain which constructs showed most significant change.

River Running, a 4 day outdoor therapy river camp, was qualitatively evaluated analysing journals completed by 10 male and 3 female veterans with diagnosed PTSD\textsuperscript{35}. Participants were selected by defence health staff, and 17 professional staff were present. They reported that re-experiencing of traumas appeared to diminish over the duration of the camp, avoidance and numbing replaced with "joyful involvement" (p. 335) in the trip experience and hyper-arousal replaced with fatigue from physical activity for the participants\textsuperscript{35}. However, no method details were outlined in the report regarding their analysis approach.

Hawkins, Cory & Crowe conducted a qualitative analysis of a 3-day Paralympic military sports camp for 50 injured contemporary U. S. personnel\textsuperscript{58}. Ten participants volunteered to be interviewed using a semi-structured model. Researchers found that social comparison assisted participant engagement and change with improvements in sense of competence and autonomy.

Another week long Paralympic therapeutic adaptive sports and recreation program called Higher Ground for 18 recently returned injured U. S. veterans from the Iraq and Afghanistan conflicts was evaluated. The quantitative pre-post no control sample study showed significant reductions in self-reported mood disturbance, tension, depression and anger post-camp compared to pre-camp\textsuperscript{59}. No significant difference was found for self-reported quality of life in general, or for physical health, social relationships or environment, although the subscale of psychological health showed a significant increase ($p = 0.024$).

Published research into outdoor therapy for non-military populations and veterans, show anecdotal promise, but exhibit methodological limitations. These include small sample sizes and a lack of randomised controlled groups, resulting in a convenience sample bias\textsuperscript{8,48}. This is not unlike other treatment studies with veterans. Difficulty exists in creating a sufficient evidence-base because outdoor therapy is often run intentionally with small participant numbers. It is also difficult to draw conclusions regarding the effectiveness of the outdoor therapy approach and generalizability due to program diversity. It appears, however, that the clinical or self-reported qualitative change noted is of
importance and the peer relationships formed and subsequent benefit of social comparison, social support and peer mentoring may be an important area not adequately studied within these outdoor therapy evaluations.

**Peer Support Approaches for Veteran Populations**

Several studies were located evaluating peer support interventions for PTSD and mental health with veteran populations, see Table 3. Having social support as a deliberate adjunct to other therapies appears important for clinical change. Pietrzak et al. showed lower self-reported unit support and post-deployment social support was associated with decreased resilience and psychosocial functioning, and greater depression and PTSD for 272 contemporary U. S. Iraq and Afghanistan deployed combat veterans. Unit support association with PTSD and depression was mediated by personal resilience. Price et al. also completed research into the effect of four types of social support on the outcome of exposure therapy for 69 U. S. CRPD veterans experiencing PTSD symptoms from the Iraq and Afghanistan conflicts. They found that positive treatment response was significantly associated with emotional or informational support and positive social interactions, rather than affectionate or tangible support. These elements of support are often intentionally included in peer support models of therapy.

Based on such studies, if social support is enhanced for veterans through peer support approaches, especially for CRPD veterans who are socially isolated as a result of their experiences, there is a possibility for improved veteran wellbeing. Travis et al. conducted a longitudinal study into telephone-based mutual peer support with 22 veterans and 32 psychiatry outpatients and community mental health centre consumers who experienced ongoing depressive symptoms. Depression, quality of life, and psychological health all significantly improved over time. Of particular significance, veterans had significantly better adherence to treatment than non-veterans (2 veterans dropped out compared to 20 non-veterans). Based on participant qualitative responses, the authors concluded that this form of support may be considered valuable and maybe more meaningful for veterans than for non-veterans. Participants reported having someone who could relate, and who had common experiences, was of particular importance. A sense of camaraderie, important in any therapeutic setting, is significant within veteran culture particularly and seen in the current study were
veterans felt they had to censor self less. A high majority of participants, 94%, stated they would be more satisfied with their general care if they had peer support routinely available. This study demonstrated that veterans may be particularly well suited to this type of intervention support and is thus a potential treatment in combating compliance issues with veterans.

Veteran peer mentor programs in particular have shown to assist treatment adherence and enhance outcomes, improve behaviour and motivation for self-care, potentially de-stigmatised veteran mental illness, correct stereotypes of the mentally weak person, and act as a stress buffer in reducing psychological despair\textsuperscript{13,64}. An increased uptake and responsiveness to other clinical treatment options is also seen\textsuperscript{36}. Significant support exists for the peer approach with veterans, when conducted in a structured, formal and accountable way where appropriate training is provided\textsuperscript{13}. For example, in evaluating the group peer support Veterans Transition Program in Canada with 18 male military personnel returning to civilian life post-combat, Westwood et al.\textsuperscript{61} found that participation was associated with decreased trauma-related symptoms including defensive avoidance, anxiety, anger and depression.

Although a peer support program exists for ADF military personnel in their first year of service\textsuperscript{9}, a wide-scale program for ADF veterans does not appear available. In contrast, veteran programs such as Shoulder to Shoulder (STS)\textsuperscript{65} in the UK and Buddy to Buddy (BTB)\textsuperscript{36} in the U.S. utilise the peer support framework. Whereas STS utilises civilian volunteers to support veterans, BTB trains veterans to provide peer support to CRPD veterans, and views peer mentoring and social support as an integral component to the treatment approach for veterans. Preliminary research into the BTB program showed that after participation, 50% stated they had used resources/services suggested by their buddy and more than 20% self-referred to formal treatment as a result of participation when they had not previously accessed any formal treatment\textsuperscript{36}. A Canadian veteran program, Operational Stress Injury Social Support (OSISS), also provides peer and family support to current serving personnel and veterans in one-on-one and in group formats\textsuperscript{13,66,67}. A program evaluation completed by the Department of National Defence and Veterans Affairs Canada\textsuperscript{66} indicated that over 900 personnel and veterans were utilising the service and OSISS appeared to be the only form of ongoing social support for veterans.
POST for Veteran Populations

Bringing both outdoor therapy and peer support together in treatment, POST approaches addressing veteran wellbeing have been in operation for many years, but as of yet not formally or systematically evaluated. Of those programs evaluated, many remain organisational reports and not subject to peer-review and journal publication. Given the limited published literature, relevant organisational reports have been included in this review. Examples of non-evaluated POST approaches for CRPD veterans are outlined in Table 4.

POST programs for veterans that have been evaluated are included in Table 3. Rivers of Recovery (ROR) is a U. S. fly-fishing camp run by Vietnam veterans for CRPD veterans. ROR also includes a focused post-camp outreach program to aid veteran mental health\textsuperscript{68,69}. The program provides more than 200 CRPD veterans with camps for men and women and couples every year\textsuperscript{68}.

Mowatt and Bennett analysed the content of letters written by 67 male participants of ROR during 2010 to their sponsors, who assisted financially for camp attendance\textsuperscript{70}. The authors found four themes: camaraderie is necessary while receiving treatment; veterans experienced ongoing regret; reflection was involved in the process of memory reconciliation; participants saw benefits from involvement in outdoor recreational activity. A high risk of bias in results appears evident in this research however, because participants may have felt obligation to justify the sponsor’s costs and express gratitude.

Research available on the ROR website appears rigorous and uses sound within-subject longitudinal methodology\textsuperscript{71}. The participants, 67 men and 2 women post-deployed veterans with PTSD diagnosis, were assessed 1 month prior to the fly fishing excursion (baseline), the last day of the fly fishing retreat, and at 1 month follow up using reliable self-report questionnaires: Positive Affect and Negative Affect Schedule, Brief Symptom Inventory, Perceptual Stress Scale, PTSD Checklist Military Version and Pittsburgh Sleep Quality Inventory\textsuperscript{71}. The study found statistically significant reductions in perceived stress, PTSD symptoms (19% reduction, with some no longer meeting PTSD diagnosis) and sleep issues, compared to the initial baseline prior to camp participation\textsuperscript{69}. Significant reductions in anxiety, depression and somatic stress symptoms and negative mood states, with a significant increase in positive mood states were also found. Results also showed a significant
Table 4.
Non-evaluated POST approaches for CRPD veterans

<table>
<thead>
<tr>
<th>Program Title</th>
<th>Country</th>
<th>Format</th>
<th>Detail</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenge Aspen</td>
<td>US</td>
<td>Veteran camps</td>
<td>For physical injury and PTSD but include therapist support</td>
<td>Pavlou, 2008; <a href="http://www.operationwearehere.com/WoundedWarriorRehabTherapy.html">http://www.operationwearehere.com/WoundedWarriorRehabTherapy.html</a></td>
</tr>
<tr>
<td>Coming Home</td>
<td>Australia</td>
<td>12-day bush camp</td>
<td>Focusing on companionship and utilising a buddy system plus ongoing counselling post-camp participation</td>
<td><a href="http://www.youngdiggers.com.au/home">http://www.youngdiggers.com.au/home</a> Young Diggers is a Returned and Services League (RSL) initiative.</td>
</tr>
<tr>
<td>Expedition Balance</td>
<td>US</td>
<td>one-week outdoor therapy</td>
<td>Health retreat, veterans on the board of directors. Uses health and fitness and creative expression to address PTSD. Using a model similar to the evidenced based Post-Traumatic Stress Disorder Day Treatment Program, Landstuhl Regional Medical Centre, Germany, in an outdoor camp setting.</td>
<td><a href="http://www.expeditionbalance.org/">http://www.expeditionbalance.org/</a>; Lewis, 2009</td>
</tr>
<tr>
<td>In and Out</td>
<td>Australia</td>
<td>Fitness Program</td>
<td>Run by an Australian veteran to address the transition back to civilian life and support mental health in veterans</td>
<td><a href="http://www.youngdiggers.com.au/and-out-fitness-program">http://www.youngdiggers.com.au/and-out-fitness-program</a></td>
</tr>
<tr>
<td>Pandanus Park</td>
<td>Australia</td>
<td>Veteran retreat</td>
<td>Annual group retreat and camp sites open to veterans</td>
<td><a href="http://www.pandanusparkinc.com/">http://www.pandanusparkinc.com/</a></td>
</tr>
<tr>
<td>Soldiers to Summits</td>
<td></td>
<td>Outdoor trips</td>
<td>Outdoor trips run by soldiers and civilians for address disability due to combat</td>
<td><a href="http://soldierstosummits.org/">http://soldierstosummits.org/</a></td>
</tr>
<tr>
<td>Veterans Expeditions</td>
<td>US</td>
<td>peer-led outdoor challenge program</td>
<td>Expressly not therapeutically focused but hopes nonetheless to reduce suicide rates in recent returned veterans through social connection and team challenge involving national and international trips.</td>
<td><a href="http://vetexpeditions.com/">http://vetexpeditions.com/</a></td>
</tr>
<tr>
<td>Veterans in Action</td>
<td>UK</td>
<td>Adventure therapy</td>
<td>Outreach and outdoor trips by veterans and civilians</td>
<td><a href="http://www.v-i-a.org.uk/index.php">http://www.v-i-a.org.uk/index.php</a></td>
</tr>
</tbody>
</table>
reduction in stress indicated by daily cortisol production between the first and second days for 23 participants. This was measured by salivary cortisol, urinary catecholamines (e.g., epinephrine and norepinephrine) and immune function (salivary immunoglobulins). The research is however limited due to being an organisational report with no control group reported.

Closer to home, Trojan’s Trek (TT) appears to be the only Australian program evaluated and available for review. This evaluation is also an organisation report and has not been subject to peer-review and not available via standard journal publication. Data from TT’s first camp in 2009 was evaluated by ACPMH\(^8\) using self-report questionnaires and interviews with 10 participants and their partners before camp, immediately after camp and at 2-months follow-up. Outcomes showed a trend toward mental health improvement. However, only 5 participants completed post-intervention questionnaires limiting statistical analysis. Some respondents showed diminished perceived benefit of camp involvement after 2 months compared to immediately after the camp, and those who did not complete follow-up showed initial higher ratings of unhappiness with life than those who completed follow-up questionnaires. Due to the small sample size, self-selection and lack of control group, conclusions could not be drawn regarding the camp’s effectiveness. However, positive qualitative results from diary and interviews were evident. The most common goals at the start of the trek were managing anger and improving communication and the camp was most effective in managing day to day problems and achieving these goals\(^8\).

Programs for veteran populations such as TT and ROR both utilised medallions as symbols for belonging, accomplishment, and legacy-making\(^6\), providing culture specific meaning-making important in many therapy approaches with veterans\(^14\). TT and ROR are two evaluated examples of where peer support programs have been applied within an outdoor therapy setting for veterans.

**Discussion**

In this paper the effects of deployment, standard treatment for veterans, and evidence of the reluctance to seek and respond to treatment for CRPD veterans experiencing military-induced PTSD have been reviewed. The evidence for the effectiveness of outdoor therapy, peer support approaches and POST with non-military and contemporary veteran populations has also been detailed.
CRPD veterans experience a relatively high level of mental health issues in contrast to the non-military population. Despite recommendations for individual and group PE and CBT therapies supported by research these appear primarily through generalisation from non-military population studies. Such therapies may be under-utilised given the unique characteristics and reluctance of this population to engage with these approaches. Treatment response and retention may be lower than for other populations accessing similar treatment due to the nature of combat-related PTSD and the culture of military service.

There is strong evidence indicating a peer support model for veterans is efficacious based on the research with both veteran and non-veteran populations. In particular, veterans show greater engagement in mutual peer support for mental health and may be well suited to this therapy approach. Although there are practical and ethical risks to any peer support approach, and also in generalising methods across diverse U. S. and Australian veteran cultures, this approach is promising in its application to Australian CRPD veterans. From the reviewed studies into peer support approaches which utilised veteran populations, it is reasonable to conclude that veteran peer-mentor interventions have the potential to: (a) be perceived as more accessible than professional-led therapies, (b) directly impact positive therapeutic change and retention for veterans, and (c) encourage access to professional mental health support. Existing veteran social support programs build on the camaraderie which naturally develops as an aspect of deployment and provide social comparison, norming, and modelling. In addition, under well-structured programs, veterans may benefit from having a strong identification with peers and leaders.

While POST approaches for veterans appear commonly used, particularly in the US, only a small amount of peer-reviewed research exists in this area. The small number of quantitative research available to date directly exploring this approach with veterans supports its use. Qualitative evaluations are similarly limited in this area. Much of the evidence for veteran POST approaches is limited to organisational based reports without peer review and publication in academic journals. As such further research is warranted into the efficacy of POST approaches with veterans where peer support is a core aspect of the outdoor therapeutic approach. Such research would add further to
current knowledge and treatment practice regarding the potentially significant role POST approaches play within the wider context of treatment for the veteran population.

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## Appendix A

Table 5  
*List of terms*

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full term</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACPMH</td>
<td>Australian Centre for Post-Traumatic Mental Health</td>
</tr>
<tr>
<td>ADF</td>
<td>Australian Defence Force</td>
</tr>
<tr>
<td>AUST</td>
<td>Australia</td>
</tr>
<tr>
<td>BTB</td>
<td>Buddy to Buddy</td>
</tr>
<tr>
<td>CBT</td>
<td>Cognitive Behaviour Therapy</td>
</tr>
<tr>
<td>CRPD</td>
<td>Contemporary Returned Post-Deployed</td>
</tr>
<tr>
<td>DVA</td>
<td>Department of Veterans Affairs</td>
</tr>
<tr>
<td>EMDR</td>
<td>Eye movement desensitisation and reprocessing</td>
</tr>
<tr>
<td>FAPRP</td>
<td>Forensic and Applied Psychology Research Group</td>
</tr>
<tr>
<td>IED</td>
<td>Improvised Explosive Device</td>
</tr>
<tr>
<td>MHWS</td>
<td>Mental Health and Wellbeing Study</td>
</tr>
<tr>
<td>NATO</td>
<td>North Atlantic Treaty Organisation</td>
</tr>
<tr>
<td>Non-deployed</td>
<td>Military personnel or veteran served but never deployed</td>
</tr>
<tr>
<td>OBA</td>
<td>Outward Bound Australia</td>
</tr>
<tr>
<td>OBVP</td>
<td>Outward Bound for Veterans Program</td>
</tr>
<tr>
<td>OF</td>
<td>Operation Flinders</td>
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<tr>
<td>PE</td>
<td>Prolonged Exposure</td>
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<tr>
<td>POST</td>
<td>Peer Outdoor Support Therapy</td>
</tr>
<tr>
<td>PTSD</td>
<td>Post-traumatic stress disorder</td>
</tr>
<tr>
<td>RCT</td>
<td>Randomised controlled trial</td>
</tr>
<tr>
<td>ROR</td>
<td>Rivers of Recovery</td>
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<tr>
<td>STS</td>
<td>Shoulder to Shoulder</td>
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<tr>
<td>TT</td>
<td>Trojan’s Trek</td>
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<tr>
<td>US</td>
<td>United States of America</td>
</tr>
<tr>
<td>Veteran</td>
<td>Former-serving military personnel</td>
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</tbody>
</table>
Appendix B

Author Publication Guidelines – Journal of Military and Veterans’ Health

Manuscript requirements

Manuscripts submitted to the Journal of Military and Veterans’ Health must conform with the Uniform requirements for manuscripts submitted to biomedical journals (www.icmje.org).

2. Categories of manuscripts

The Journal of Military and Veterans’ Health publishes articles related to health of military personnel and veterans within two broad areas of interest:

- Research and practice related
- Informative and commentary

<table>
<thead>
<tr>
<th>Research and practice related</th>
<th>Informative and commentary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original Research/</td>
<td>Editorials</td>
</tr>
<tr>
<td>Original Articles</td>
<td>Letters to the editor</td>
</tr>
<tr>
<td>Short Communication</td>
<td>Biographies</td>
</tr>
<tr>
<td>Review articles</td>
<td>History</td>
</tr>
<tr>
<td>Reprinted Articles</td>
<td>Obituaries</td>
</tr>
<tr>
<td>Case Studies</td>
<td>Book reviews</td>
</tr>
<tr>
<td>Abstracts from the Literature</td>
<td>Commentary</td>
</tr>
<tr>
<td>Literature</td>
<td>View from the Front</td>
</tr>
</tbody>
</table>

Each issue may not contain all categories of articles. The word limit does not include text in the abstract, references, figures and tables. The requirements for submission categories, which are peer reviewed, are summarised below:

<table>
<thead>
<tr>
<th>Category</th>
<th>Maximum word count</th>
<th>Maximum number of tables and/or figures</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Editorials</td>
<td>1000</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Original research</td>
<td>3500</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>Section</td>
<td>Length</td>
<td>Fig</td>
<td>Tab</td>
</tr>
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<td>------------------------------</td>
<td>--------</td>
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<tr>
<td>Short communication</td>
<td>1500</td>
<td>3</td>
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<tr>
<td>Review article</td>
<td>5000</td>
<td>8</td>
<td>60</td>
</tr>
<tr>
<td>Case studies</td>
<td>1000</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Letters to the editor</td>
<td>800</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>History</td>
<td>3000</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>Commentary</td>
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<td>3</td>
<td>10</td>
</tr>
<tr>
<td>View from the Front</td>
<td>2000</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>Obituaries</td>
<td>200</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

**Original research**

This category is the primary mode in the journal for communication of findings from original research studies.

**Short communications**

This category is for communicating the findings from small-scale research studies however other subject material will be considered.

**Review articles**

Authors who wish to submit a review should first contact the editors to determine its suitability for publication in the journal. The editors encourage authors to submit systematic reviews for publication.

**Reprinted articles**

This section will include full length copies of articles reprinted with permission from other journals. These articles must be keynote and valuable contributions to health issues in the military and veterans’ areas. Readers are invited to email details of papers that should be considered for this category. Any proposal should be accompanied by a short commentary (maximum 200 words) outlining why this historical paper was important in shaping some aspect of military or veteran health practice. The commentary will be published with the keynote article.
Case studies

This category is primarily designed to present details of interesting or unusual clinical cases and a summary is required with a limit of 100 words. The text should be presented using the following headings; background, history, examination findings, special investigations, discussion including differential diagnosis. The article should succinctly illustrate important points.

Abstracts from the literature

This category will include abstracts of seminal work published in other journals which is related to the scope of the Journal of Military and Veterans’ Health. Readers are invited to email references to papers that are considered to be valuable to healthcare professionals and others in the military and veterans domains. The editors acknowledge that many of our readers may not have facilitated access to comprehensive reference libraries.

Letters to the Editor

Letters may comment on material that has recently been published in the journal or may address new topics, such as use of new equipment or instrumentation in the field or a new technique applicable to preventive medicine. Where the subject matter is directed towards a previous publication the editors will usually send the letter first to the authors of the original paper so that their comments may be published at the same time as the letter.

Editorials

Submissions are encouraged for publication in this category and these will be subjected to the peer review process. Topics of interest must fall within the scope of the Journal of Military and Veterans’ Health. Guest editorials may be invited from time to time by the editor; suggestions for topics for editorials should be directed to the editor.

Biographies

Biographical accounts of the work of individuals who have made outstanding contributions to the health and care of military personnel and veterans will be considered for publication. If you wish to submit a biographical article the editor should be consulted prior to preparation of the article. The editorial board may solicit such articles directly.

History

Articles describing notable themes related to health and care of military personnel and veterans are invited for publication. The scope is broad and could include, for example, the conduct and outcome of military operations, effect of climate, improvements in trauma care, surgical techniques and mental health. The article should focus on health care delivery and practice as the main theme and may compare changes from earlier practice to those in use today. The editorial board may invite such articles directly however if you wish to submit a manuscript the editor should be consulted in advance. The style of this category will be the same as that applied to a review article.
Obituaries

The editorial board will accept obituaries for individuals who have served as health professionals within the Australian Defence Force. These have been very successful in the British Medical Journal (BMJ) to provide information to the wider health readership. Guidance for preparing an obituary can be found on the BMJ web site, www.bmj.com (e.g. BMJ 1995;311:680-681 (9 September) and BMJ1995;311:143-144 (15 July)). Obituaries should be submitted within one month of death and will be subject to editing if required.

Book reviews

Reviews of publications which have a direct focus on military and veterans’ health for educational, informative, reference or other reasons will be invited. The author/s would be expected to be independent, have considerable experience and/or a track record and a direct involvement in the field which is addressed by the publication.

Commentary

Commentaries will be short articles which provide incisive, informative and balanced comment on current health issues. The editors may invite commentary on a research paper published in the same edition of the journal. All commentary articles will be peer reviewed and the article style will be that of an editorial.

A view from the front

This category will consider submissions from health individuals at the front line of health care and health delivery to serving personnel and veterans. These articles should be topical, recent, may contain an individual’s personal view of a health delivery system and will be subject to peer review.

3. Editorial policy

Original material

The Journal of Military and Veterans’ Health publishes original work describing health related research studies. Submitted manuscripts must not have been published or submitted for publication elsewhere, either in whole or in part. This applies to both paper and electronic methods of publication but not to abstracts presented to scientific meetings. Authors planning to submit review articles should first contact the Editorial Office to ensure the appropriateness of the subject material.

Disclaimer

While the Editorial Board makes every effort to ensure that no inaccurate or misleading data, opinions or statements are published in the journal, all data, results and opinions appearing in articles and advertisements are the responsibility of the contributor/s and/or the advertiser concerned. Accordingly the Editorial Board and their respective employees, officers and agents accept no liability whatsoever for the consequences of any such inaccurate or misleading data, results, opinions or statements. While every effort is made to ensure that all data are accurately presented, new methods and techniques should only be considered in conjunction with published literature from manufacturers.
Ethics approval

All studies that involve participation of humans, information on participants or which would otherwise be considered to require ethical approval related to the principles set forth in the Helsinki Declaration should be conducted in accordance with such principles. Studies of this nature must contain a statement indicating that approval has been granted by a properly established Human Research Ethics Committee.

All studies involving experiments with animals must contain a statement indicating that the protocol was approved by an appropriately constituted ethics committee or institutional review board in compliance with guidelines established by that country's government. A statement must be included that indicates that all animals received humane care in compliance with these guidelines.

Confidentiality

Confidentiality must be maintained in relation to all participants. All presented data must be de-identified. If a participant is able to be identified from illustrations, photographs, case studies or other study data then release forms or copies of permission for publication must be submitted with the manuscript.

All potentially identifying information (including patient likenesses, identification numbers, names and initials) must be removed from images, tables, graphs, charts and text before the manuscript is submitted.

If a reference is made in the text to personal communication (oral or written) as a source of information, a signed statement of permission is required from each source. The year of receipt of these statements should be provided in the text. Use of personal communication as a reference will only be accepted in special instances.

Informed consent

A statement must be included indicating that informed consent was obtained from all participants if data were obtained from or were related to human participants.

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includes submission by the authors and their colleagues in the interval before this work is published. Submission by authors of similar material to advertising, news media or other forms of publication must be indicated when the Journal of Military and Veterans’ Health receives your manuscript and a copy of that material should be provided with your manuscript.

Conflict of interest and funding

Authors are responsible for recognising and disclosing financial and other conflicts of interest that may bias or could be perceived to bias their work. They should acknowledge in the manuscript all financial support for the work and other financial or personal connections to the work. Each author must complete the conflict of interest and funding section of the Authors Process form.

Peer review

Two or more referees are assigned to review each submission (except for Book Reviews and Reprinted Articles). Acceptance of original articles is based on significance, originality, scientific quality and interest to the Journal of Military and Veterans’ Health readership. If the submission is accepted for publication, editorial revisions may be made to aid clarity and understanding without altering the meaning. Authors are given the opportunity to nominate reviewers whom they believe are expert and impartial in their area of interest.

Clinical trial registration

We define a clinical trial as “Any project that prospectively assigns human subjects to intervention and comparison groups to study the cause-and-effect relationship between a medical intervention and a health outcome (ICMJE definition). These should be registered, including early phase uncontrolled trials (phase I) in patients or healthy volunteers (WHO Recommendation).”

The Journal of Military and Veterans’ Health requires all clinical trials to be registered with a registry that is accessible to the public (at no charge); is searchable using standard, electronic (internet) means; is open to all prospective registrants at minimal or no cost; validates registered information; identifies trials with a unique number; and includes basic information related to the researchers and the trial.

If you are submitting a randomised controlled trial, add the registration number of the trial and the name of the trial registry in the acknowledgements section of your manuscript. Other trial registers that currently meet all of the International Committee of Medical Journal Editors (ICMJE) and World Health Organization (WHO) requirements can be found at http://www.icmje.org/faq.pdf.

Registries that meet these criteria include:

- Australian Clinical Trials Registry (www.actr.org.au)
- The International Standard Randomised Controlled Trial Number registry (www.controlled-trials.com)
- The National (UK) Research Register (www.update-software.com/national)
- European Clinical Trials Database (http://eudract.emea.europa.eu)
Language

All manuscripts must be written in English. Spelling and phraseology should be to either standard English or standard American usage and should be consistent throughout the manuscript. Contributors with a non-English native language are encouraged to seek the help of a competent linguist who is familiar with medical terminology prior to submission. It is the author’s responsibility to have the language revised before submitting the work for publication. Only minor language revisions are provided after submission.

Review process

Receipt of all submitted papers is acknowledged by email. Manuscripts are initially assessed by the editors and then sent for external review to experts in the field. The corresponding author will be notified by email when a decision is reached. To aid in the peer review process we invite authors to suggest potential reviewers, with their contact details, in the cover letter.

Software and format

The manuscript must be supplied in Microsoft Word in .doc format (Word 2007 file format not accepted at this point in time) or in rich text format. Files prepared in other packages will only be accepted and considered provided they are compatible with Microsoft Word and that any reformatting is minor. Files prepared in various desktop publishing proprietary formats will not be accepted.

4. Organisation of manuscripts

Papers will differ in structure depending on category. These instructions refer to sections of manuscripts independent of category where these sections are included. For original research articles the structure should follow the order below with each section beginning on a new page. Reviews should commence with an abstract and then be organised such that the information is presented in a logical sequence with informative headings and sub-headings related to the content.

Title page

The manuscript should be preceded by a title page which includes the following information:

- Concise title of manuscript
- Name, address, title, highest qualification, affiliation and contact details (email, postal address, telephone and fax) for each author
- Identify corresponding author
- Identify (email) address for correspondence (corresponding author)
- Short running title (maximum 50 characters including spaces)
- Word count (text of paper only – excludes abstract, references, figures and tables)

Abstract

The abstract for original articles should be structured under the following headings: Background, Purpose, Material and Methods, Results, Conclusion. The Background must be a maximum of two sentences. Maximum length of the summary should be 250 words with three to five key words or phrases included below the abstract or summary.
Conflict of Interest

All conflicts of interest must be disclosed in full in this section of the manuscript. These may include, but not be limited to, specific or “in kind” interests, incentives and relationships in respect of the manuscript (e.g. grants, funding, honoraria, stock ownerships, royalties, payment of expenses). This section applies to all authors.

Introduction

It should be assumed that the reader does not have a comprehensive knowledge in the field and you should therefore provide a concise account of the background (including relevant literature references) and reasons for this study.

Materials and methods

Descriptions of any techniques and methods must provide sufficient detail such that a reader can replicate the procedures. Methods that have been published elsewhere should not be described in detail and should be referenced to the original work Statistics. A full description of the statistical methods used should be provided.

Results

Description of results, while concise, should permit repetition of the procedures and direct comparison with similar data by others. Data should not be repeated unnecessarily in the text, figures and tables and appropriate selection of significant figures for numerical data presentation should be applied. Significance should be expressed as values of probability. Where appropriate, results should be presented as figures rather than tables of data.

Discussion

The discussion should not simply reiterate the results presented; the authors should present their analysis and conclusions with reference to the current knowledge base related to this work. Any assumptions on which conclusions may be based should be stated and there should be some discussion of strengths and weaknesses of the research.

Acknowledgements

These should be brief and should include references to sources of support including financial, logistical and access to material not commercially available. Any individuals named must be given the opportunity to read the paper and approve their inclusion in the acknowledgements before the paper is submitted.

References

A list of references should be provided starting on a new page. Only published references or those genuinely in press should be included.

Tables (including legends to tables)

Tables are to be placed at the end of the manuscript in order of appearance in the text with one table per page. Captions to tables should be short and concise, not exceed one sentence and be on the same page as the table.
Illustrations

These are to be submitted as a separate electronic file for each image.

5. Preparation of manuscripts

Style

References.

A standard English dictionary should be used (e.g. Oxford English Dictionary 2007) for spelling or hyphenation of non-medical terms and Dorland’s Illustrated Medical Dictionary (WB Saunders, Philadelphia) is recommended for medical terms. A source for general style including grammar, punctuation and capitalisation is the Style manual for authors, editors and printers, Sixth edition 2002 (John Wiley and Sons, Australia).

Numbers.

Use numerals for all units of measure and time and for all sets of numbers (e.g. 1 m, 2 hours, 5 years, 4%, 2 of 6 observations). Spell out the numbers one through nine only for general usage (e.g. “we had two opportunities”). Spell out numbers beginning a sentence.

Abbreviations.

Abbreviations should be kept to a minimum to avoid confusion with readers who may not be familiar with the subject material. Only standard abbreviations, as listed in a style manual or accepted internationally for use within a subject area, may be used without definition. Terms used frequently within a manuscript may be abbreviated however these should be spelled out at first citation with the abbreviation in parenthesis. Abbreviations in speciality areas must conform to accepted use in that area.

Layout.

Headings and sub-headings should be consistent throughout the article and conform to the style used in articles previously published in the journal. No text should be underlined. Prepare the manuscript with double-spacing and allow margins of 2.5 cm.

Tables

Tables should be on separate pages at the end of the paper (following the References section) and be capable of interpretation without reference to the text. They should be numbered consecutively with Arabic numerals (e.g. Table 1). A concise, descriptive caption must be provided for each table. Units in which results are expressed should be given in brackets at the top of each column and not repeated on each line of the table. Ditto signs are not acceptable. An indication should be provided in the manuscript as a guide to indicate where the table should be inserted.

Image files
All images must be submitted as separate files. Images embedded in word processing files are not acceptable. Each image must be referred to in the text and an indication should be provided in the text as to the preferred position of the image. Lettering and lines should be of uniform density and the lines unbroken. Image size and layout should be constructed so that each can be placed within a single column or page width.

At submission all files must satisfy the following criteria for resolution, file format and file size and be submitted in the actual size to be used. Image width should be constructed to be either one or two column width.

- Halftone images 600 dpi
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- Black and white line art 1200 dpi
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Illustrations.

These should be referred to in the text as figures (e.g. Figure 1) and numbered consecutively with Arabic numerals. Photographs and illustrations will only be accepted as digital images and should be either composed or cropped before submission to ensure there is no unwanted material in the frame. Digital files judged to be unacceptable in the review process must be resubmitted by the authors.

Graphs, charts and figures.

All graphs, charts and figures must be submitted in electronic format (.EPS or .TIF files) and should be prepared by a suitable software package. These should be referred to in the text as figures (e.g. Figure 1). Images of hand drawn material will generally not be accepted. Symbols which are to appear in the figure (and not in the caption) should be chosen from the following available types: ● ○ □ △ ▽ ◇ + △

Footnotes

The following symbols should be used in the order given to reference footnotes: *, †, ‡, §, ||, ¶, **, ††, ‡‡

References

The list of references should appear at the end of the manuscript. References should be numbered consecutively in the order in which they are first mentioned in the text. References in text, tables and legends should be identified by Arabic numbers and appear in the text in superscript, for example text 1 or text 2-4 or text 5,6-7. Where punctuation (e.g. comma, period) follows a reference number then the punctuation should appear after the reference. The format of references should follow the “Vancouver” style as described in the Uniform
requirements for manuscripts submitted to biomedical journals (www.icmje.org). The Journal of Military and Veterans’ Health varies in two respects from these guidelines: Surnames and initials of no more than the first three authors [et al.] are cited and the first and last page numbers of a reference are cited in full. Journal names should be abbreviated as accepted in Index Medicus (www.nlm.nih.gov/ tsd/serials/lji.html) and a period is not used after journal name abbreviations (e.g. J Mil Vet Health). A list providing detailed examples of references for many types of publication is available at http://www.nlm.nih.gov/bsd/uniform_requirements.html. Where appropriate, cite the type of reference (e.g. letter, editorial, abstract or supplement).

Authors should verify references against the original documents and are responsible for checking that none of the references cite retracted articles except in the context of referring to the retraction. For articles published in journals indexed in MEDLINE, the International Committee of Medical Journal Editors considers PubMed (http://www.ncbi.nlm.nih.gov/sites/entrez/) the authoritative source for information about retractions. Authors can identify retracted articles in MEDLINE by using the following search term, where pt in square brackets stands for publication type: Retracted publication [pt] in pubmed.

An example of the reference system is as follows: 1. Quail G. Asthma in the military. Aust Mil Med 2000; 9(3):129-137.

Units of measurement

The International System of Units (SI) must be used. For values less than zero enter a zero before the decimal point e.g. 0.123. The style should include a solidus e.g. mg/L.

Abbreviations

Use of abbreviations should be minimised. Spell out non-standard abbreviations at their first mention in the text followed by the abbreviation in parentheses. Avoid uncommon abbreviations and jargon.

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Covering letter

Your covering letter should be submitted electronically with the manuscript as a separate file. It can contain author identifying information as it will not be shown to peer reviewers. It should include:

- Why the paper should be published in the Journal of Military and Veterans' Health
- Details of suggested reviewers

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Proofs will be sent in electronic form as a PDF to the corresponding author who should read them carefully. Major alterations to the text cannot be accepted at this stage. The proofs should be corrected and returned to the Editorial Office by fax or email (image) within 48 hours of receipt.

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The files can be compressed using a .zip compression format. File size must not exceed 10 Mb for a given email. If there are file size concerns contact the Editorial Office.

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