Reviewer’s report

Title: Association Between Baseline Psychological Attributes and Mental Health Outcomes After Soldiers Returned from Deployment

Version: 0 Date: 27 Mar 2017

Reviewer: Laura Palmer

Reviewer’s report:

Corrections:

(p.2, line 24-31) sentence clarity

(p.2, line 41) family capitalised and other GAT categories are not

(p.2, line 17) can examples of psychological health attributes be provided here (to help those quickly scanning abstracts)?

(p.2, line 24) acronym needed for Global Assessment Tool

(p.10, line 14) percent written as a word, inconsistent with % used elsewhere

(p.10, line 19) post deployment not hyphenated like elsewhere

(p.10) could refer the reader to the Appendices for Figure 1 and Table 2

(p.10, line 58) hyphen used for confidence interval rather than comma used elsewhere

(p.12, line 46) GAT referred to as psychological and social attributes in the Discussion (capturing the breadth of variables well), but is referred to as 'psychological' elsewhere. Would there be a benefit in referring to psychological and social attributes throughout the paper (or psycho-social)?

(p.13 line 6) interpretation query re. "dramatic" - Perhaps the OR= 8.16 effect, but the other results seem moderate yet notable

(p.15, line 24) "were" not was

(p.16, line 24) "are" not is

Recommendations:

This reading could be relevant to your work.
- Warner et al. (2011) Effectiveness of mental health screening and coordination of in-theater care prior to deployment to Iraq: a cohort study

- Brewin et al (2000) Meta-Analysis of Risk Factors for Posttraumatic Stress Disorder in Trauma-Exposed Adults. This paper shows that post-deployment factors of life stress and lack of social support are more predictive than pretrauma factors. This might partly explain the increase in PTSD and depression encountered after 90-180 days post-deployment

- Rona et al (2017) Post-deployment screening for mental disorders and tailored advice about help-seeking in the UK military: a cluster randomised controlled trial. This paper shows immediate post-deployment screening does not appear to predict mental health outcomes 10-24 months later

Literature review:

- The paper reports a scarcity of research linking antecedent psychological factors and mental health outcomes in military populations, but are there any similar studies you can include in the introduction? The introduction is light on prior research in the field

- From lines 14-36, p.4 - The context of psychological screening might be better placed before the more specific aims of your study. This paragraph could be merged with the section following line 7, p.5.

- P.5 however reads a little too methodologically for an introduction or lit. review - can these elements be summarized here and expanded upon in the methods section?

Methods:

- Do you have response rates?

- Can you clarify if you're excluding National Guards? It might be an interesting inclusion/comparison considering known differences in mental health outcomes and potential preparedness for combat

Results:

- I see you adjusted for counselling, but did you adjust for pre-deployment PTSD and depression? It might be worth commenting upon if yes or no. One consideration is whether the worst 5% on psychological attributes are also the positive cases of pre-deployment PTSD and depression. If they map upon one another, this would indicate that pre-deployment mental health outcomes are associated with post-deployment mental health outcomes (which is expected)
Discussion:

- It would be beneficial to see whether your findings fit with other studies looking at psycho-social antecedents and mental health outcomes in military samples (if any). If none, you could make the original contribution of this work in finding these associations clearer.

- There is a strong thread throughout that this could be a strategy for pre-selecting a suitable workforce. In light of the sometimes delayed onset of PTSD post-deployment (years after exposure - see Rona et al. above), you could suggest that future studies should use at a longer follow-up period in order to conclude that this would be a viable pre-selection method - otherwise it is quite excluding.

- Regarding your supposition on line 6, p.14, you could address the difficulties more explicitly, i.e. issues surrounding the reliability of the data if personnel know that they may not be deployed as a result of their pre-deployment screening answers.

**Are the methods appropriate and well described?**

If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**

If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**

If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**

If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**

Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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