Reviewer’s report

Title: Posttraumatic Stress Disorder and Risk of Selected Autoimmune Diseases among US Military Personnel

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Reviewer: Lisa M. James

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The study aimed to evaluate the association between PTSD and common autoimmune diseases in active duty service members. The primary finding was that risk of any autoimmune disease was higher in those with a history of PTSD compared to those with no history of PTSD, regardless of trauma history or lifestyle factors such as BMI, smoking, or alcohol use. The long-term health of our military personnel is an important area of study and the large sample and prospective design are strengths. In addition, the manuscript is generally well-written. That being said, my enthusiasm for the manuscript is somewhat tempered. The primary issue is that several previous studies, including prior studies of military personnel, have reported increased risk for autoimmune conditions in those with PTSD; thus, the contributions of the current study are not particularly novel aside from extending a previously established connection of autoimmune conditions and PTSD from veterans (and other samples) to active duty military personnel. Additional limitations and weaknesses are summarized below.

While the PCL is widely used to screen for PTSD, it is also often criticized for reflecting general distress. This is of particular relevance in the present study given that PTSD is the focus of the study and that the majority of the "PTSD" sample also had other mental health conditions that may raise the distress aspects of the PCL. Limitations of using the PCL to define study groups should be acknowledged at the very least. What was the breakdown of provider diagnosed PTSD vs PCL-C positive screens?

The definition of combat is somewhat restricted and does not include more common combat-related experiences (e.g., firing a weapon at enemy, being fired at, going on patrols) that are typically assessed in standard measures of combat experiences (e.g, CES). The definition used here seems to conflate combat with Criterion A traumatic events.

It would be helpful to know a little more about the items used to assess for physical assault, sexual assault, and sexual harassment.

The authors themselves correctly point out the imprecision of the estimates for autoimmune diseases at several points throughout the manuscript. Relatedly, the number of cases is incredibly small for some diseases (e.g., 3 men and 9 women in the PTSD group with SLE); not surprisingly, many of the findings for specific diseases are non-significant.

A minor point - The authors refer to CD and UC in the discussion without prior mention of these IBD subtypes.
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?
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