Reviewer’s report

Title: Longitudinal Trajectories of Comorbid PTSD and Depression Symptoms Among U.S. Service Members and Veterans

Version: 0 Date: 19 Aug 2019

Reviewer: Cynthia Lancaster

Reviewer's report:

Summary: This study uses a large, longitudinal data set of service members and veterans to describe symptom trajectory among those with comorbid (probable) PTSD and MDD. I believe the study provides a meaningful contribution to the literature, particularly in understanding the prevalence of various trajectories of comorbid PTSD/MDD, as well as correlates of unremitting symptoms. The prospective nature of the study (with several correlates of trajectory measured at baseline) and size of the sample are notable strengths. However, I think the manuscript could be strengthened in a few key ways (comments on each section included below).

Introduction:
"Among the psychiatric disorder, major depressive disorder is the most frequently comorbid with PTSD."
-Please provide a reference for this statement. I believe the rates of depression comorbidity are comparable to substance use disorder comorbidity.

"Those with persistent PTSD were more likely to have comorbid PTSD"
-I suggest you revise to say "comorbidities in addition to PTSD"

"However, they do not directly address symptom change among individuals with comorbid PTSD and MDD"
-In addition to highlighting the gap in knowledge that you are trying to fill, please elaborate briefly on its importance. For example, what are the clinical implications of looking at a sample selected specifically for comorbid PTSD and MDD? What additional information will you get, over and above prior studies, which have already assessed trajectory of PTSD symptoms, and bi-directional PTSD/MDD relationships. For example, are there compelling reasons to think that PTSD trajectories should be different for those with comorbid PTSD/MDD as opposed to PTSD alone?

You have an extensive list of covariates in your methods section. In your introduction, consider including some background describing why you selected the covariates you did for your analyses.

Methods:
-Were all subjects enrolled in this study when active duty? Or are some active duty and others veterans? Consider exploring possible differences in trajectories between active duty service
members and veterans. If the pattern of findings is the same across both groups, I would recommend including this as a footnote.

Measures:
Please include some additional information on the validity of using the PCL and PHQ-8 to assess PTSD and depression diagnosis in the manner used in the present study.
Life events - please provide the rationale for combining physical harassment, divorce, and financial stress into one categorical variable. Why was this done differently than other items for this questionnaire? Please provide rationale and/or evidence for scoring the questionnaire in this manner.
You mention the PHQ alcohol abuse scale. Please spell out the full name of the scale the first time you mention it.

Discussion:
You use the PHQ and PCL as indicators of two separate diagnoses. However, some studies suggest that certain items of the PCL are non-specific and tap into general dysphoria (e.g., Marshall, Schell, & Miles, 2010; Grubaugh et al., 2010). Please comment on this limitation in your discussion, and consider describing what this might mean for the interrelation of your findings. For example, consider the possibility that these disorders move in tandem because they might represent or tap into the same underlying construct.

You briefly mention the use of integrative medicine (line 38, p. 9) and multidisciplinary treatment (line 4, pg. 10), but provide no references supporting the benefits of these techniques to prevent chronicity in those with comorbid psychological conditions. Please briefly elaborate on your rationale for suggesting these as future directions of research/promising intervention techniques for this specific population, including references to prior research as needed. For example, you can provide references to support the idea that physical factors are highly modifiable with multidisciplinary treatment.

I appreciate the thoroughness of your limitations section. For lines 4-6 (pg. 12), where you state that "both tools... have demonstrated high validity," please include references. Also ensure that the references code the measures (PHQ, PCL) in the manner you used in the present study (e.g., coding by diagnostic criteria, rather than overall cutoff scores).

In the strengths section, consider including the prospective nature of your design as a strength for causal inference (e.g., social support, as measured at baseline, predicts trajectory of symptoms over 15 years).
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 recommend additional statistical review

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

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