Reviewer's report

Title: Associations of Military Divorce with Mental, Behavioral, and Physical Health Outcomes

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Reviewer: Nexhmedin Morina

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The manuscript describes the results of a study that compared military service members who remained married with those who were recently divorced. A strength of the paper is the large amount of study participants. Yet, the manuscript can profit from considering the following comments:

Major Compulsory Revisions

1. Statistical analyses/Results: the authors report that they adjusted for birth year in the regression analyses. It is not clear why they have done so instead of using age. The difference between 1961 en 1976 is smaller than the difference between 40 years old and 25 years old. This is especially important as the groups differed on age and this might explain some of the outcomes: the younger, the shorter the marriage, the more physically healthy etc.

2. Background: I suggest that the authors report the hypotheses that they might have had before conducting the analyses. Further, the authors report that the purpose was to study the impact of marital dissolution on subsequent outcomes. However, the design of the study does not allow to measure the impact of marital dissolution on anything. I would rather report that the aim was to assess the extent to which recently divorced participants reported/showed different outcomes than those who remained married over the time in question. I would be careful with this or similar terms throughout the manuscript. In the discussion section for example, the author write that “divorce can lead to …”, but there are so many variables that are not controlled for that might partially explain the found differences.

3. Results: It should be informative to report whether the samples (married/divorced at second wave) differed at the first wave with regard the measured outcomes.

Minor Essential Revisions

4. Abstract: The authors report: “Compared to those who remained married, recently divorced participants were significantly more likely to screen positive for new-onset posttraumatic stress disorder, depression, smoking initiation, binge drinking, alcohol-related problems, experience moderate weight gain, be in the highest 15th percentile of physical functioning, and be able to deploy within the subsequent 3-year period.” As this sentence contains both negative and positive outcomes, I suggest to present the negative and positive outcomes in different
sentences, which might help the reader to better understand the content in question.

5. Abstract: The authors conclude that recent divorce was associated with adverse mental health outcomes and risky behaviors. However, in the results section of the abstract we also read that recently divorced participants also were more likely to be in the highest 15th percentile of physical functioning, and be able to deploy within the subsequent 3-year period.

6. Background: I suggest that the authors report the hypotheses that they might have had before conducting the analyses. Further, the authors report that the purpose was to study the impact of marital dissolution on subsequent outcomes. However, the design of the study does not allow to measure the impact of marital dissolution on anything. I would rather report that the aim was to assess the extent to which recently divorced participants reported/showed different outcomes than those who remained married over the time in question. I would be careful with this or similar terms throughout the manuscript. In the discussion section for example, the author write that “divorce can lead to …”, but there are so many variables that are not controlled for that might partially explain the found differences.

7. Methods, outcome measures: the authors should describe the assessment tools used. For example, the reader should be informed about the nature of the PHQ (and by the way, an acronym of the PHQ should be mentioned the first time the questionnaire is mentioned on page 6).

8. Statistical analyses: the authors should report which variables were adjusted for in the regression analyses (despite the fact that those are reported under the specific table).

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests