Reviewer's report

Title: Social, behavioral, and sleep characteristics associated with depression symptoms among undergraduate students at a women's college: A cross-sectional stress and depression survey, 2012

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Reviewer: Liisa Hantsoo

Reviewer's report:

This study assessed correlations among self-reported social / behavioral characteristics and depressive symptoms in women’s college students. While the research question itself is clear, the authors provide little contextual information on what makes this line of research novel. For instance, why would we expect women’s college students to differ from co-ed college students, or the general population in terms of predictors of depression / depressive symptoms? The methods included self-report surveys, conducted online by students who responded to email recruitment. The authors should provide more information on the measures used; while their outcome variables (CESD, DASS) are well-established instruments, it is not clear how they assessed other variables, including sleep quantity / quality, social support, or mental health history. As these constitute their main findings, the authors should provide more detail on how these items were assessed. In general, the data appear sound, and the manuscript adheres to the relevant standards for reporting and data deposition. The discussion and conclusions are reasonably balanced but should include more detailed discussion of ALL outcomes; as it stands, the Discussion focuses mostly on the authors’ findings on sleep and depressive symptoms, but do not contextualize (e.g. discuss past research and how their findings fit into the larger literature) findings on social support or mental health history. The limitations of the work are clearly stated, but the authors should provide more detail on work upon which they are building. The writing is of good quality. Specific items that the authors should address are below.

Major Compulsory Revisions

1. The use of “stress” is the title seems to overstate the focus of the study. The authors should consider removing reference to stress in the title; the research focuses mainly on depressive symptoms, and the authors do not discuss the relevant stress literature.

2. The authors should provide more information on rationale for the study. Poor social support, prior depressive episodes, and sleep dysregulation are all established in the literature as being correlated with depression. How / why would this be different in a women’s college population? What does this study add to the literature? In the Background, the authors state that there are “few established risk factors for depression among US college students.” This is
surprising, as there is substantial literature on risk factors for depression in the general population. Why would risk factors for college students (co-ed or women’s college) be different than those for the general population? Please describe in more detail.

3. In the Background, the authors mention that “Studies among female undergraduate students have identified sleep deficit [12], lack of certain types of exercise [22], and binge eating [23] as predictors of depression.” Do these factors predict depression in a prospective / longitudinal manner, or are they simply associated with depression?

4. In the Methods section, the authors state “The survey instrument collected self-reported information on students’ demographics, individual behaviors,…” What were these behaviors? How were they assessed? Were these single-item questions? Were they drawn from established instruments? If students were merely asked to rate their sleep quality (E.g. poor, good, excellent), were the students provided metrics / definitions for what constitutes “good” sleep quality? The authors do not mention use of a well-validated measure, such as the PQSI. How was "overall health" measured / operationalized? Similarly, the results/data refer to "social support group" - how was this defined?

5. In the Methods, the authors mention directed acyclic graph theory was used. Please describe further.

6. In the Results: the CESD includes questions on sleep, so it's not surprising that sleep quality was associated with CESD score. Is this a case of redundancy? The authors should address this.

7. The authors might describe more clearly whether associations between factors were positive or negative in the Results and Discussion. This is hard to follow at times, particularly for the social support finding. Specifically, in the discussion (paragraph 1), the authors mention that “A self-reported strong social support group … remained significant predictors in backward and stepwise elimination models for depression.” However, in the Results (paragraph 5), they state that “The absence of a self-reported strong social support group … remained significant in the backward and stepwise elimination models for current depression by CES-D.” It is not clear what the directionality of the association between social support and depressive symptoms is. Please clarify

8. In the Discussion, the authors describe their findings on sleep and depressive symptoms in the context of previous research. However, the same is not done for their findings on social support or mental health history. Why is this? The fact that strong social support was associated with depressive symptoms is surprising in the context of previous research, and the authors should explain their results further. Previously, they mention that it is ABSENCE OF strong social support that's associated w depression - which is it?

Minor Essential Revisions
9. The authors should include the n in the Abstract.
10. The authors should consider reformatting the tables for clarity, ensuring that the tables are consistent with APA style, and including an asterisk to indicate statistically significant differences between groups.

Discretionary Revisions
11. None.

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**
I declare that I have no competing interests.