Reviewer’s report

Title: Use of Social Adaptability Index to Explain Self-care and Diabetes Outcomes

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Reviewer: Maureen Monaghan

Reviewer's report:

This manuscript extends the literature on social determinants of health by examining associations among the Social Adaptability Index and diabetes self-care and health outcomes. The Social Adaptability Index is a way to quantify known social risk, resulting in an overall score. However, the overall SAI score was not associated with key self-care behaviors and there were few associations among individual demographic indicators and diabetes outcomes. It is unclear why this sample did not show the expected pattern of relationships, and the authors did not sufficiently explain the lack of findings. Comments are below:

1. The SAI is used to estimate a quantifiable indicator of overall socio-economic status among patients with diabetes. However, a key indicator for health care - insurance status - is not provided. Is this not included in the index? Was this available for the sample?

2. In relation to the SAI, it is unclear if the grading of each variable on a 0-3 scale is consistent across all studies or if the grading of categories is personalized to each sample. For example, in an older adult sample with an average age of 60, continuing to work part time or full time may be an indicator of risk rather than being retired, which suggests the ability to voluntarily leave the workforce.

3. More thorough information about the study sample and study procedures is needed. One of the potential limitations mentioned in the conclusion is that the sample may not be representative; however, little information is given for the reader about sample representativeness. At a minimum, it is important to present mean scores/values for the variables of interest beyond the demographic characteristics (e.g. mean SDSCA scores; mean A1c; etc.). Additional information about representativeness can be determined from the study enrollment procedures. This sample may be higher functioning in that they were all engaged with a health care provider and presenting for diabetes care. How many patients were approached vs. enrolled in the study? Did they need to be present in person at a diabetes care clinic to complete questionnaires?

4. There is some question about the selection of dependent variables for this study. The introduction and hypotheses focus on self-care and glycemic control but the methods and results section introduce additional variables, such as quality of life, blood pressure, and
lipids. Why were these variables selected and what associations were they hypothesized to have with the SAI?

5. There are many analyses conducted to address this hypothesis and it is unclear how the error is adjusted for multiple analyses. Further, as the overall SAI score was not significant with the self-care and health indicators, what is the justification to do further analyses with the subscales when the overall scale as validated is not significant? With so many analyses, it is also difficult to determine the meaning of some of these relationships when so many analyses are conducted, particularly when self-care (e.g. what is done to manage diabetes each day) and outcomes potentially related to this self-care (e.g. A1c) are not examined in the same model.

6. The text uses alcohol and tobacco as the indicator of substance use but Table 2 uses language about drugs/alcohol without mentioning tobacco.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Unable to assess

**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:

Acceptable

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