Reviewer’s report

Title: Association of Functional and Structural Social Support with Chronic Kidney Disease among African Americans: The Jackson Heart Study

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Reviewer: Sarah Schrauben

Reviewer's report:

Summary for the editors: This paper describes social support among African American individuals in the Jackson Heart Study, and specifically assesses how social support relates to prevalent CKD status and change in kidney function among participants with CKD or those at high risk for kidney function decline, such as those with hypertension and diabetes. The rationale for assessing social support in this population is based on the reasoning that social support may improve self-management of CKD and thereby through this pathway, may improve outcomes. The authors conclude that social support (assessed in two ways) was not associated with prevalent CKD or kidney function decline. However, despite the important topic of social support in populations with chronic disease, in its current form, the paper is could benefit from further development of the study's background/introduction, reporting the results, and the conclusions.

Major Comments

Introduction

The background for the study is based on the rationale that social support is intimately related to self-management behaviors, and through this pathway, social support has an effect on outcomes. However, this study does not focus on self-management behaviors and does not provide clear reasoning how social support and self-management are linked. The introduction could therefore be improved with other reasoning of why social support is important in this population.

Additionally, it would be helpful to provide more background on the types of social support (functional vs. structural) and domains of social support that are later discussed in the methods section.
Methods

- What is the rationale for excluding participants that reported history of dialysis or kidney transplant at any visit? It is my understanding that these participants would represent prevalent CKD.

- Why is 'structural' social support a secondary assessment? Does this then infer that 'functional' social support is the primary exposure?

  If you intended to mean that you performed this analysis 'in addition' to the functional social support, I would clarify the language.

- Was there any other rationale for scoring of the structural social support other than the 2/3 cut point that the ISEL score used? I would suggest sensitivity analyses of utilizing different cut points to define low structural social support since it is hard to believe that a low social network (score <8) could mean that you could have 3-5 close friends and relatives that you see once a month but still be considered low social support.

- Is prevalent CKD the primary outcome and the kidney decline measures secondary? Please clarify.

- What is the rationale for evaluating social support as a continuous and as a categorical measure? Without an a priori specification, this infers the authors chose the most significant result to report. In the results section, it appears that only the continuous forms of the variables were reported.

Results

I suggest reporting Table 1 in terms of participants with CKD and participants without CKD since this is the focus of the paper and moving the current type 1 to a supplement.

Table 2- why report only ISEL social support and not the structural social support level? It would also be helpful to further separate out into those with and without CKD.

Table 3- suggest adding to Model 1 "Relative Odds of Prevalent CKD"

  I would suggest limiting reporting the point estimate to only the primary exposure variable (ISEL total) to increase the readability.

Table 4 - would combine with Table 3 (and remove reporting the point estimates for the adjustment variables)
To my understanding, it appears that with higher scores in the appraisal domain, there is less eGFR decline and with higher scores in tangible domain, there is more eGFR decline. However, in reporting the results, the authors chose to focus only on higher scores of self-esteem and lower odds of prevalent CKD (although the 95% CI includes one, so not a significant association.

Table 5 - would combine with Table 3 (and remove reporting the point estimates of the adjustment variables)

Discussion
- Reporting that the role of self-esteem and chronic disease self-management could uncover critical elements for effective behavioral interventions seems overly enthusiastic, especially since the 1) study did not assess self-management and instead, investigated the association of the self-esteem domain of social support and prevalent CKD, and the 2) association was not significant.

- The appraisal and tangible domains for social support were associated with a similar magnitude with the kidney decline outcome, but were not highlighted in the results or discussion in the same manner as self-esteem - is this because prevalent CKD was the primary outcome of interest and the other measures of eGFR decline were secondary?

- Page 12, line 59 - What does higher perceived self-esteem social support mean?

- I would suggest adding a section to the limitations the use of an unvalidated measure of structural social support. This could be strengthened by sensitivity analyses.

Minor Comments
- What is the rationale for not adjusting for marital status in the primary analyses if later analyses are stratified based on marital status? Instead of stratifying, the authors could test for the significance of an interaction term.

- Please consistently use the terms patients, subjects, or participants

- Page 13, line 20 - I thought the prevalence of CKD and JHS was 12% not 22%
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