Author’s response to reviews

Title: Social Determinants of Health Associated with Hemodialysis Non-Adherence and Emergency Department Utilization: A Pilot Observational Study

Authors:

Kamna Singh Balhara (kamna.balhara@gmail.com)
Lori Fisher (lori2k15@gmail.com)
Naya El-Hage (naya.elhage@ahn.org)
Rosemarie G Ramos (rosemarieramos@hotmail.com)
Bernard G Jaar (bjaar@jhmi.edu)

Version: 1 Date: 02 Dec 2019

Author’s response to reviews:

Thank you for your thoughtful comments and feedback. Please see our responses below. Editor Comments: Given the small sample size as pointed out by the reviewers, for any continuous variables that are reported, if you could give the median and the interquartile range (rather than the mean and standard deviation). ***Thank you for the feedback. We have examined the distribution of all of our data; for the data that is normally distributed, we have presented means + SD. For other distributions, medians + IQRs are appropriately updated. Tables 1 and 3 have been updated accordingly. The updated cells are highlighted in yellow on the manuscript with tracked changes.***

BMC Nephrology operates a policy of open peer review, which means that you will be able to see the names of the reviewers who provided the reports via the online peer review system. We encourage you to also view the reports there, via the action links on the left-hand side of the page, to see the names of the reviewers. Reviewer reports: Hoichi Amano (Reviewer 1): Please overwrite this text when adding your comments to the authors. The manuscript by Kamna et al. investigated the impact of Social Determinants of Health Associated with Dialysis Non-Adherence and Emergency Department Utilization. The topic is interesting and clinically important. ***Thank you.*** However, there are some concerns to accept. My major comments are followed. 1As the authors maintained, the sample size was so small, that there was not enough power to perform Multivariate analysis. The author should adjust some confounders to clearly the association between ED visit and SDOH. (For example, DM may affect mental disease, pain, SDOH and ED visit.) ***This is an important point; thank you. We did not perform an analysis to adjust for age, gender, or presence of diabetes; cases were matched to controls by age, gender, time on dialysis and diabetes, so there was no significant difference in these characteristics between groups. Further, we do not believe that simple
presence or absence of disease would interact with SDOH; degree of disease control is more likely to confound associations with SDOH, but in this pilot study, we were unable to gather data on markers of disease control (such as HgbA1C or numbers of anti-hypertensives medications) or disease severity.*** 2, The author should discuss the difference in race. About 95% of the sample of this study was African-American and External validity should be discussed. ***Thank you again for this important comment. The majority of our study participants were African-American; this is appropriately representative of our inner city patient population. We recognize and agree that, while this may lend generalizability to other large inner-city settings in the US, this certainly does not represent all settings nor the dialysis patient population at large in the US. Our limitations section has been updated to specifically reflect this: “Additionally, our study population was predominantly African-American; while this may render our results applicable to similar metropolitan settings, they are not necessarily applicable to all settings or the US dialysis patient population at large.”*** 3, The association between SDOH and the reasons for missing dialysis should be investigated. ***While this would potentially yield valuable data, patients often provided multiple or multifactorial reasons for missing dialysis. Additionally, reasons often overlapped and were subject to reporter bias. Given our “n”, this would make it challenging to ascertain a true association between specific SDOH and reason provided. Our limitations section has been updated to specifically reflect this: “Moreover, our small sample size prevented the analysis of any possible associations between SDOH and reason provided.”*** 4, It is better to discuss how to resolve this issue, which helps medical provider control patient who undergo dialysis. ***Thank you for your comment. This is an important point; however, this is a pilot study that was undertaken to better understand the scope of the problem and to design larger studies to further study the issue, which could in turn inform future interventions. It is challenging for us to provide specific suggestions on how to resolve the issue of missed HD, since our study was not examining the effectiveness of any specific intervention. Our findings do suggest, however, that an interprofessional approach may be most successful, and we have updated our conclusions to reflect this: “Our findings suggest that an interprofessional approach, incorporating psychiatric services, social work, case management and pain management, may be most effective in addressing the complex, interrelated SDOH that contribute to these patterns of healthcare utilization.” *** Gayani Shashikala Amarassinghe, MBBS (Reviewer 2): This is a very interesting research topic and the efforts the investigators have taken to study this should be really appreciated. ***Thank you.*** However, I have a concern regarding the selection of cases and controls. According to what I understood, people visiting to Emergency department for any reason are included as cases if they have missed at least one hemodialysis session. Controls are recruited from the basis of nephrologist recommendation as rarely missing hemodialysis. Controls might have actually missed a hemodialysis session and therefore are similar to cases. It would be better if authors can explain whether there is any objectively measurable difference in compliance between the groups (for example if they can compare number of HD sessions missed by cases and controls at least in a certain time period.) Otherwise I don't think it is appropriate to compare the two groups and draw
conclusions regarding social determinants relevant for non adherence as it will only show social determinants leading to emergency department attendance of patients on hemodialysis. ***Thank you for this comment. Our controls missed no hemodialysis sessions over a one-year period; we will further clarify recruitment in the manuscript. After chart review and documentation review by their treating nephrologists, patients who had missed 0 dialysis sessions in the year preceding recruitment were identified as controls. If a patient missed a dialysis session at their “home” dialysis unit solely due to being hospitalized or on vacation (but hemodialyzed at another unit) while in compliance with preceding scheduled sessions, they were still eligible to be considered as controls. The last paragraph of the “Study design, setting, and population” section has been modified to clarify this: “After chart review and documentation review by their treating nephrologists, patients who had missed 0 dialysis sessions in the year preceding recruitment were identified as potential controls.”*** In line number 28 authors have mentioned about logistic regression but no relevant data is presented in the results section. ***Thank you for pointing this out. The inclusion of this sentence was an oversight on our part and it has accordingly been deleted.*** In line 54, mean length of stay is described. However it would be better if authors justify weather mean was appropriate for this data (There could be outliers in data like this ). Provision of Standed deviation with the mean will be appropriate if mean can be used. ***Thank you for this important feedback - table 3 has been appropriately updated with median values.*** It would be better if the test statistic and the p value can be presented in results section when it is stated as statistically significant or not. ***We have updated this in the text accordingly.*** At line 56/57 it says "controls are more likely to drive themselves etc". It would be better if it is clearly mentioned that this is when going for hemodialysis. ***Thank you - we have updated this for clarity.*** ***Again, we thank the reviewers for their thoughtful comments and the editors for the opportunity to revise and improve our manuscript.***