Summary

This study was conducted in the US, based on the NHSs I and II cohort data, which only included female registered nurses. The study proposed to assess the association between caffeine consumption and risk of incident hypertension. The paper subject area is quite important due to the health consequences of having hypertension and the high prevalence of the disease in the US and many other countries. However, there are some design features that need to be addressed:

1. There is a consistent typo in the abstract – it should be non-linear association instead of no linear association.
2. What is the race of these participants? You should control for it as there is genetic variation in the incidence of hypertension.
3. Did the level of stress in their work have any influence on their incidence of hypertension? How about physical activity? Maybe stratify the analysis.
4. Weight and height were not measured in all questionnaires. I am a bit unclear how you handled the missing data in this case.
5. Some participants were allowed in the study even though they did not answer the baseline questionnaire. Is there a potential for bias here?
6. It is important to show if there are differences between those included and excluded.
7. When were the measurements of blood pressure taken in relation to the caffeine?
8. Given that you are proposing a survival analysis using Cox proportional hazards, which method was used to assess the proportionality assumption? Also, results of the survival analysis are called hazard ratios and not relative risk. These are 2 very different measures.
9. What was the name of the trend test used?
10. How did you perform the age-adjusted analysis? Did you perform a direct age-standardization?
11. How did you select the confounders for your final model?
12. In the results, presenting rates instead of counts for our outcome is more informative.
13. Table 1 should have a comparison test. This is an observational study and the exposure. However, there was some type of test done as per the text. What is the r that you report in the text related to the association of potential confounders and the quintiles of caffeine intake?
14. Why did you include a p-value for trend in Tables 2-6? What are you testing the trend in hazard ratios???
15. Which table did you present the interaction model that you mentioned in the Methods?
16. It is important to mention that several of your measures of association were either very close to the unit or they were not significant. Thus, you need to investigate whether you have no power to detect the association, whether there are issues how you analyse the data (I am almost certain that the model selection is not correct), or there are several colinear variables that are influencing your results. Based on Table 1, it seems that the blood pressure of most participants was normal, and maybe that is why your associations were quite weak.

17. You talked about the generalizability of your results in terms of race. How about the fact that you only looked into nurses in your study? They do not represent the general population.