Reviewer's report

Title: Perceived neighborhood safety and incident mobility disability among elders: the hazards of poverty

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Reviewer: Gopal K Singh

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This is a well designed study in which the authors examine the association between perceived neighborhood safety and neighborhood crime rate and the risk of disability mobility among elders drawn from a longitudinal cohort of people aged 65 years and older in 1982 in New Haven, Connecticut. The authors found that the risk of incident mobility disability was significantly related to the lack of perceived neighborhood safety, but not with the neighborhood crime rate (especially among those aged 65-74 years who were living in poverty at baseline).

The methods and analytic approaches are suitable and well presented. Analysis of factors influencing perceived neighborhood safety and residence in high-crime neighborhood is a significant and important component of the study. The discussion section is detailed and very nicely laid out. Although the analyses presented in Tables 1-5 and Figures 1-2 are sound and quite adequate, the study might benefit from the following comments or recommendations for improvements:

1. The authors should provide SUDAAN-based standard errors for the weighted percentages reported in Table 1 and Table 2.

2. In Table 2, it might be a good idea to report annualized age-adjusted incident mobility disability rates (per 1000 or 100,000 person-years) and corresponding standard errors for perceived neighborhood safety and neighborhood crime rate as well as for the other covariates considered in Table 5. This should be done for the full cohort of elders aged 65+, and for each of the four age-poverty subgroups.

3. Pages 7 & 11: The authors mention that the length of follow-up was 8 years from the baseline year of 1982. Does this mean that the study was truncated in 1990 and no subsequent follow-up data on mobility disability for the baseline population cohort were available beyond 1990?

4. Page 8: The authors should provide some descriptive statistics for their measure of neighborhood crime rate, such as mean, standard error, minimum &
maximum? How does it vary across the 28 census tracts in New Haven? Did you consider measuring the neighborhood crime rate other than in tertiles, for example, as a continuous or a quintile variable?

5. Page 8: Your measure of neighborhood crime rate is defined as number of serious crimes per square mile of the census tract. This is a perfectly good measure of crime rate. However, crime rate is generally defined as the number of crimes per 1000, 10,000, or 100,000 population. If the census tracts in your study are fairly similar in population size, then your ecological measure of neighborhood crime might be a more appropriate measure than the population-based rate. However, if the census tracts do differ in their population size, it might be worthwhile to look at whether population-based neighborhood crime rates would yield different results from what you have reported here.

6. In Table 4, it seems like the main effects of neighborhood safety and neighborhood crime rate (adjusted for race and sex) are not statistically significant for the full cohort of elders aged 65+. Were the effects not adjusted for continuous age here? Note that the effects in Table 3 are age-adjusted. Why are the main effects of neighborhood safety and neighborhood crime rate for those aged 65+, 65-74, and 75+ not reported in either Table 3 or Table 4?

7. In Table 5, it would be helpful to see the fully adjusted models for elders aged 65+, 65-74, and 75+ (with poverty status as a covariate) along with the age x income/poverty specific models.

8. In Tables 3-5, it would be helpful to see the reference group mentioned for each of the covariates considered. This could be done as a table footnote or described in the methods section.

9. You have examined how the association between perceived neighborhood safety, neighborhood crime, and incident mobility disability varies by household income/poverty status. In the wider context of your discussion of the health effects of neighborhood conditions for vulnerable populations, do you think if the effects of perceived neighborhood safety and neighborhood crime on mobility disability risks would also vary by gender and/or race?

10. Were there other baseline measures of socioeconomic status available, such as educational attainment or usual occupation? If they were, what is the rationale for not considering them in the present analysis? Would the expected association between neighborhood safety and mobility disability likely to differ across SES strata if education or occupation were used as SES measures instead of household income? Unlike household or personal income, educational attainment among adults is particularly stable over the life course and would seem to be as good as (if not better than) income as a measure of socioeconomic position in the old age.
11. Did the race/ethnicity variable include only non-Hispanic Whites and Blacks? Were other ethnic groups such as Hispanics and Asians left out from the analysis?

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.