Manuscript Number: EHB-D-20-00035   **Black-White Disparities During an Epidemic: Life Expectancy and Lifespan Disparity in the US, 1980-2000**

Dear Professor Sharp,

Thank you for submitting your manuscript to Economics and Human Biology.   I have completed my evaluation of your manuscript. The reviewers recommend reconsideration of your manuscript following minor revision and modification. I invite you to resubmit your manuscript after addressing the comments below. Please resubmit your revised manuscript by **Oct 06, 2020**. When revising your manuscript, please consider all issues mentioned in the reviewers' comments carefully: please *outline every change made in response to their comments and provide suitable rebuttals for any comments not addressed.* Please note that your revised submission may need to be re-reviewed.

To submit your revised manuscript, please log in as an author at <https://www.editorialmanager.com/ehb/>, and navigate to the "Submissions Needing Revision" folder under the Author Main Menu.

Economics and Human Biology values your contribution and I look forward to receiving your revised manuscript.￼

Kind regards,    Joerg Baten   Editor   Economics and Human Biology   Editor and Reviewer comments:

**Reviewer #1:** The study investigated differences in changes between 30 US states and between black African Americans and whites in life expectancy and lifespan disparity during the HIV epidemic from 1980 to 2000. The differential impact of the HAART treatment on mortality from HIV and the effect on the difference in the mortality pattern were studied. The study is relevant on its own but also in the light of the Covid-19 pandemic. The restriction to include 30 states only was due to the limitations as to the share of the black population in 1980. Data was from CDC and from the Vital Statistics. Changes in life expectancy and life disparity were decomposed to estimate the contributions from age and HIV/other causes of mortality. With one exception, results were restricted to the years 1980, 1990 and 2000. The comprehensive results are nicely presented and the manuscript is well written. I have some comments/questions:

1. On page 4, I suggest the sentence "However, that might not be the case, since…" be replaced by "For instance, since…"
2. I assume that "around 500,000 cases" mentioned on page 5 is in fact "around 500,000 deaths".
3. On page 5 it is stated that "all-cause age standardized death rates were on average 1.38 and 1.33 times higher for blacks in 1990 and 2000". I cannot see that this appears at first from Figure A2 and Table A1.
4. Figure A1 is very illustrative and might be better placed in the main text and not as an appendix figure.
5. Apart from Figure A1 all other Figures are with three time point of measurements (1980, 1990 and 2000). Thus, the fluctuations is missing and it is not possible to say when the gaps are widest.
6. I wonder why gender differences were not investigated. I would expect different patterns between black and white men and women and states.

1. Could some comments be said to the special results for New York. Was this state particularly burdened by HIV?
2. Page 14 lists the states that were hit the hardest by HIV. It seems as the list is alphabetic and not according to the burden of HIV. This should be clearly stated because of the marked differences between blacks and whites (black lives matters).
3. The wording "positive contribution from HIV…" on page 14 is awkward.
4. It is not discussed whether the HAART treatment was offered equally to all with no differentials between blacks and whites.

**Reviewer #2:** This paper is a very welcome contribution in the context of the COVID-19 pandemic. The paper aims at proving mortality differences during the HIVS pandemic in the 1980s between white and black populations. The authors highlight that pandemics can have disproportional effects over specific minorities. The analysis of mortality differences is based on the estimation of indicators of life expectancy and lifespan disparities for white and black populations in different US states.

* The authors recognize indirectly (p. 2, first paragraph) that the former have been estimated before. In this context, a *consistent contrast and discussion with previous findings is missing*. Are the new estimations on life expectancy in line with previous findings? What it is new? Was something wrong in previous estimations? What can explain potential differences? Or, is lifespan disparities the only new (which is not a minor one) quantitative contribution of the paper?
* The fact that "the epidemic rolled out very differently across states" (p. 6) is another critical finding of the paper. Indeed, during the last past months a lot of research and newspaper articles were devoted to analyse why the COVID-19 has such a great different impact in regional terms. However, the authors do not provide the sufficient space to explain these regional differences.

*The authors could offer a more systematic analysis taking advantage of all the material they already have*. *For instance, the authors discuss on average differences in the life expectancy and lifespan disparity gaps between black and white population (p. 15, last paragraph). These averages imply a lot of variation across states that is not presented/discussed in the text*.

Similarly, they show life expectancy differences for those states that were particularly hit by the epidemic (p. 14, second paragraph). *Why not to show these differences for all the states?*

Indeed, the graphs offer great information but make impossible to obtain specific figures on the gap between black and white populations. Therefore, I am not asking for a causal analysis to understand why the HIVS epidemic has such a different evolution both for blacks and whites across the different US states. By contrast, I believe that *simple tables covering the main indicators by state can offer a lot of information*. Among these indicators, I would suggest: *changes in life expectancy; changes in lifespan disparities; the marginal effect of HIV (the counterfactual without HIV)*; *the role of public policy (year of introduction of early reporting).* This should be done at least for the 1980-1990 period and could offer important insights for future research. In relation to this, it can be accepted that the authors want to leave for future research the causes of the HIVS higher prevalence on black populations (p. 3, last paragraph) or the causal effect of the HAART treatment on mortality (p. 6). If this is the case, I would suggest to discard extremely vague explanations on the former. *Indeed, they suggest that the lower socioeconomic status (p.3, last paragraph) of black populations may explain lower life expectancy and higher lifespan disparities generated by the HIV epidemic. This, however, seems a tautology since, according to the authors, "lifespan disparity (…) provides information important for capturing inequality in economic status" (p. 2, last paragraph). Therefore, what "lower socioeconomic status" really means? What indicators really matter?*