Reviewer’s report

Title: Reliability of race of the ascendants as race ascertainment: a cross-sectional study

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Reviewer: Dr Matthew Anderson

Level of interest: A paper whose findings are important to those with closely related research interests

Advice on publication: Accept after discretionary revisions

Comments

1. This article deals with a topic of scientific interest, namely how to best ascertain the race of individuals for epidemiological studies. I do not however think that the conclusions drawn by the authors are well supported by their data.

2. The article compares ascertainment of race based on the race of patient ascendants (parents and grandparents) to two other methods of racial ascertainment: self-identified race and observer-identified race. The study used observers who were trained to determine race based upon 1) observed skin color, 2) color of lines and hand/palm surface, 3) hair color and 4) hair style. Conceptually speaking, therefore, this is an article about the value of a diagnostic test (namely, query concerning the race of ascendants) compared to five other diagnostic tests.

3. There was some ambiguity concerning exactly how the authors interpreted the ascendants' race. The authors asked how many parents or grandparents were of black race. I understood, although it is not explicitly stated, that a maximum of six ascendants could be black. However the authors did not analyze the responses in 7 categories (0-1-2-3-4-5-6). Analysis of the answers to this question was done by grouping responses into four categories (none, one, two and three or more). These categories were interpreted as corresponding to white (no black ascendants), mixed race (one or two black ascendants) and black (three or more black ascendants). In the conclusions, the authors state that "number of ascendants with black colour of skin is an alternative and efficient method to describe race..." It is unclear if they mean the actual number of ascendants or the categories that they derived from the number. This must be clarified.

4. The authors provide no conceptual justification for including parents and grandparents or for having...
chosen ascendants to begin with. They provide no justification for asking the number of black ascendants as opposed to querying regarding number of white ascendants or Indian ascendants (even though we are told there are Indians in Southern Brazil).

5. Appropriate gold standard (reference criteria): Diagnostic tests need to be compared to appropriate gold standards or reference criteria. This is a vexing problem with respect to race. Generally speaking there are those who consider race a biological variable and those who see it as a social variable. The authors of this paper throw their lot in with the "biological camp". I should state that I do not consider race a biological variable(1). The authors cite Caldwell (2) to justify their separation of race as a biological variable from ethnicity. The Caldwell article is an inappropriate citation for this key point. I would have preferred to see the authors reference the anthropological literature on the topic which is generally far better informed than the medical literature. Two excellent references are Stephen Molnar's Human Variation: Races, Types, and Ethnic Groups and Jonathan Marks' Human Biodiversity: Genes, Race, and History.

6. If one accepts that race is a biological variable, what then is the appropriate reference criteria? The closest approximation to such a standard are probably the norms used by forensic scientists to identify cadavers from skeletal measurements, not a particularly useful technique for an outpatient study! Further, these norms do not identify persons of mixed racial heritage. I do not believe that skin color is a scientifically validated technique for racial identification and should not be the reference criteria used. If the authors disagree they need to demonstrate not just that they agreed on the skin color, but that it was a valid measure of race. Indeed the authors adopt the logically inconsistent position of labeling a person with one black and five white ascendants as mixed, but with three white and three black ascendants as black. This is disturbing to me and highlights the essentially social (and non-biological) construction of racial categories.

7. If we accept that race is a social construction what options exist for a reference criteria? A number of solutions have been proposed. The approach favored by the Centers for Disease Control in the US is to rely on patient self-identification as the reference criteria. There are undoubtedly problems with this, but it is simple and logically defensible. In the legal sphere, birth certificate race is taken as the reference criteria. Finally, there are those who argue that race is in the eye of the beholder, so that the opinion of a registration clerk or a physician is an appropriate reference criteria.

8. The authors of the paper might adopt the position that their method of racial ascertainment (skin color, hair texture, etc) is precisely the operant social definition of race in their part of Brazil. This may very well be true and so constitute an appropriate reference criteria. If they were to make this argument, then I think they need to show why their way is better than self-definition. Further they need to explain why they have collapsed two definitions (light mulatto and dark mulatto) commonly used by people in the region into the term mixed.

9. Validity of conclusions: The conclusion of the paper states that the authors approach (number of black ascendants) "may save time on training and may overcome potential measurement biases of other methods of race definition." I will grant that their method will save the need to train researchers in the identification of skin color. It is not clear to me why it would save time on training personnel when compared with racial self-identification. The authors provide no evidence that this method is less biased than the other methods of racial ascertainment. Further they do not discuss the types of bias that they are attempting to correct. In order to show that their method was less biased the authors might compare the Kappa values for self-report and observer derived race and show that they were worse than the Kappa values for # of black ascendants and observer-derived race; they have not done so. Indeed, if they think that racial self-identification is biased, why would they expect that self-report of ascendant
race to be any less biased? In summary I do not think they have demonstrated that # of black ascendants is a less biased method of race ascertainment.

10. Statistical issues: Table 2 and the abstract report agreement statistics by race for # of black ascendants and observer-derived skin color. The authors report Kappa values for the individual races. This is not a use of the Kappa statistic with which I am familiar. For a diagnostic test the authors should provide us with data on sensitivity, specificity and likelihood ratios as has been done previously in studies of this type.(3). The Kappa statistic is useful in this context for evaluating the global agreement (the authors included this statistic) but it not the most appropriate way to assess a diagnostic test. Additionally, the last paragraph of the abstract reports a Kappa of 0.62 and describes it as "excellent". By the authors own criteria (outlined in the Statistical methods section), only a Kappa of greater than 0.75 was to be considered excellent; this same inconsistency is repeated in the results section.

11. Methodological issues: There were apparently 28 women on whom the investigators trained in the technique of race identification. Were these part of the 50 women in the study or was this a different group? How were women picked to enter the study? Was appropriate blinding maintained?

12. Editing concerns: I would have preferred to see the methods section come before the results section. I would have preferred to see the Title next to each table, not separated.

**Competing interests:**

None declared.