Racism and racial iniquities in poor self-rated health: the role of intergenerational social mobility in the *Brazilian Longitudinal Study of Adult Health* (ELSA-Brasil)

Racismo e iniquidade racial na autoavaliação de saúde ruim: o papel da mobilidade social intergeracional no *Estudo Longitudinal de Saúde do Adulto* (ELSA-Brasil)

Racismo e inequidad racial en la autoevaluación de mala salud: el papel de la movilidad social intergeneracional en el *Estudio Longitudinal de Salud de Adultos* (ELSA-Brasil)

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Abstract

Blacks and Browns have major health disadvantages, are less likely to rise in the social hierarchy throughout the course of life, and pertain to lower socioeconomic levels than Whites as a result of structural racism. However, little is known about the mediating role of intergenerational mobility in the association between race/skin color and health. The aim of the present study was to investigate the association between racism and self-rated health and to verify to what extent intergenerational social mobility mediates this association. This was a cross-sectional study conducted with data from 14,386 participants from the Brazilian Longitudinal Study of Adult Health *(ELSA-Brasil) baseline (2008-2010). Maternal education, education of the participant, socio-occupational class of the head of household, and socio-occupational class of the participant were used in the indicators of intergenerational social mobility (educational and socio-occupational). Logistic regression models were used. The prevalence of poor self-rated health was 15%, 24%, and 28% among Whites, Browns, and Blacks, respectively. After adjustments for age, sex, and research center, greater chances of poor self-rated health were found among Blacks (OR = 2.15; 95%CI: 1.92-2.41) and Browns (OR = 1.82; 95%CI: 1.64-2.01) when compared to Whites. Intergenerational educational and socio-occupational mobility mediated, respectively, 66% and 53% of the association between race/color and poor self-rated health in Blacks, and 61% and 51% in Browns, respectively. Results confirm racial iniquity in self-rated health and point out that unfavorable intergenerational social mobility is an important mechanism to explain this iniquity.*

Racism; Race; Health Status Disparities; Social Mobility; Social Inequality

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Introduction

Racial iniquities in health in Brazil are markedly profound and a number of studies have shown that Blacks and Browns are at a major disadvantage when compared to Whites in different health-related outcomes, such as infant mortality [1], maternal mortality ratio [2], infectious diseases [3], chronic diseases [4,5,6,7], and health risk behaviors [8]. As a result, Blacks and Browns in Brazil have a higher mortality rate from virtually all causes when compared to Whites [9] and, consequently, a lower life expectancy [10] and poor self-rated health [11,12,13,14,15]. These inequalities are absolutely unnecessary, avoidable, and unfair and, as such, must be interpreted as iniquities [16].

Racial iniquities in health can be largely explained by structural racism, which refers to all the ways in which societies promote the maintenance of racial hierarchies and white dominance across generations [17]. These discriminatory practices generate staggering iniquities in opportunities [17], reducing the chances of Blacks and Browns reaching the same levels of education, income, employment, and housing as those observed among Whites. It is worth noting that this is a lifelong process, starting even before birth and shadowing the person until the death [17]. Consequently, the probabilities of Browns and Blacks climbing the social hierarchy are much slimmer than that observed among Whites, as has been repeatedly demonstrated in empirical studies that have investigated social mobility in the Brazilian population based on race/skin color [17,18].

In the Brazilian context, studies have shown that unfavorable social pathways between generations are associated with poor health outcomes, such as arterial hypertension [19], cardiovascular disease [20], diabetes [21], and subclinical atherosclerosis [22]. It is also known that interpersonal discrimination seems to interact with intergenerational social mobility to produce poor health outcomes, given that a previous study found that the relationship between descending social mobility and hypertension is greater among Blacks and Browns who reported discrimination in contrast with those who did not [23]. Additionally, there is evidence from North American studies showing that the association between social mobility and health outcomes is not homogeneous between White and Black individuals [24]. Nonetheless, few studies have been conducted that would explain the contribution of intergenerational social mobility on racial iniquities in health. An investigation of this aspect is important, as unlike the fixed indicators of individuals' socioeconomic position (e.g., income, education, and occupation), intergenerational social mobility captures individuals and racial subgroups that move from one social position of origin (the socioeconomic position of the parents) to another.

In addition to there being fewer opportunities for upward social mobility between Blacks and Browns than those observed among Whites [25,26,27], they also have a harder time in holding onto the social positions they have attained, as they have less chance of remaining at the top the class hierarchy and a greater chance of downward social mobility [18,25]. However, until the end of the 1970s, it was believed that these differences were explained merely by the over-representation of Whites in higher socioeconomic positions of origin and of Blacks and Browns in the lower positions [26]. For this reason, several authors came to believe that racial iniquity in social mobility would disappear as Blacks and Browns secured the same social position as that reached by Whites [27]. However, we now know that even when they have the same socioeconomic position of origin as Whites, Blacks and Browns have more difficulty in moving up the social hierarchy [26,27]. Furthermore, there are important racial iniquities in the conversion of acquired education into positions within the occupational hierarchy, since regardless of the educational level attained by Blacks and Browns, this group tends to be more concentrated at the lower occupational strata than Whites of the same level [18].

It is important to use a comprehensive and robust health-related outcome, such as self-rated health, to investigate whether intergenerational social mobility at least partially explains racial iniquities in health. This indicator is a condensed, multidimensional measurement of health status [28,29,30], capable of predicting serious events, such as mortality, often exceeding the predictive power of objective health status indicators [30]. Additionally, iniquities found in this indicator tend to reflect not only current objective health differentials (e.g., medical diagnoses, clinical/laboratory tests, functionality, signs and symptoms of disease, and risk factors), but also iniquities in past health experiences, in expectations regarding future health and exposure to psychosocial stressors [28,29].

Therefore, this study aimed to investigate the association between racism and self-rated health, using the self-reported race/skin color variable as a social marker of racism, and then verify the

extent to which intergenerational social mobility (educational and socio-occupational) mediates this association. The study hypotheses are: (1) Blacks and Browns have a higher prevalence of poor self-rated health than Whites, (2) Blacks and Browns have a lower prevalence of upward social mobility and immobility at the top of the hierarchy and a higher prevalence of downward social mobility and immobility at the bottom of the hierarchy than Whites, and (3) a portion of racial iniquity in self-rated poor health is mediated by intergenerational social mobility.

Methods

Study design and population

This study used baseline data from *Brazilian Longitudinal Study of Adult Health* (ELSA-Brasil, 2008-2010), a multicenter cohort with 15,105 public servants of both sexes, aged between 35 and 74 years, from teaching and research institutions in six Brazilian cities: Belo Horizonte (Minas Gerais State), Porto Alegre (Rio Grande do Sul State), Rio de Janeiro, Salvador (Bahia State), São Paulo, and Vitória (Espírito Santo State). Efforts were made to recruit ELSA-Brasil cohort participants with similar numbers of men and women, as well as a predefined balance of age groups and occupational categories. More details on study design, selection criteria, recruitment methods and cohort characteristics have been reported in other publications [31,32]. ELSA-Brasil was approved by the Ethics Research Committee of each of the participating research institutions and the Brazilian National Research Ethics Commission (CONEP). All participants signed an Informed Consent Form.

Participants who reported Asian descendent race/color (n = 374) and Brazilian indigenous (n = 157) were excluded because they represent a very small number of individuals and present distinct characteristics that do not allow aggregation to other race/color categories. Participants with missing data on self-reported race/skin color (n = 184) and self-rated health (n = 4) were also excluded. Thus, 14,386 participants were included in this study for descriptive analysis. Participants with missing data on maternal level of education (n = 343) were excluded for analyses involving intergenerational educational mobility. The sample for this analysis included 14,043 participants. Participants with missing data on socio-occupational class (n = 239) and socio-occupational class of the head of household when the participant started working (n = 679) were excluded from the analysis involving intergenerational socio-occupation mobility. The sample for this analysis consisted of 13,468 participants.

Participants with missing educational mobility data were more likely (p ≤ 0.05) to be older, male, Black and Brown race/skin color, and with a poor self-rated health. No difference was found regarding gender and self-rated health among participants with missing data for occupational mobility, although they were more likely to be older and report White race/skin color (p ≤ 0.05).

Study variables

- **Self-related health**

Self-rated health was measured by using the following question: "In general, compared to people your age, how do you rate your health status?". This question had five answer choices: very good, good, fair, poor, and very poor. For analysis purposes, they were grouped into two categories: "good" (very good and good) and "poor" (fair, poor, and very poor). The "good" category was used as a reference. This allows comparison of results between studies as it is the most frequently used categorization in studies with an adult population [15]. Additionally, both the "fair" category and the "poor" and "very poor" categories have been associated with a higher risk of mortality [33].

- **Racism**

The self-reported race/skin color variable was considered a social marker of racism in this study. The following question was used to receive information on race/skin color: "The Brazilian Census

(IBGE) uses the terms 'Black', 'Brown', 'White', 'Asian descendent', and 'Brazilian indigenous' to classify people's skin color or race. If you had to respond to the IBGE census today, how would you classify yourself regarding your skin color or race?". This question had the following answer choices: Black, Brown, White, Asian descendent, and Brazilian indigenous. White race/skin color was used as the reference category.

•   **Intergenerational educational mobility**

Maternal education was measured using the question: "What is your mother's level of educational?" (she never attended school, incomplete primary education, complete primary education, complete secondary education, and complete higher education); and the participant's education by the question: "What is your level of education?" (incomplete primary education, complete primary education, complete secondary education, complete higher education, and graduate studies).

Maternal education was put into two categories (high: ≥ complete primary education; low: < complete primary education), as was the participant's education (high: ≥ complete higher education; low: < complete higher education). As a result, intergenerational educational mobility consisted of four educational pathways: immobility at the top of the hierarchy, upward mobility, downward mobility, and immobility at the bottom of the hierarchy. The categorization of maternal education and participant education needed different cutoff points to consider the continuous improvement in education levels that transpired in Brazilian society over time. That being the case, the distribution of educational level varies according to the birth cohort, with secondary and higher education in the older (maternal) cohorts being infrequent. Moreover, it is known that the value of educational qualifications drops as the number of individuals acquiring them rises [34,35].

•   **Intergenerational socio-occupational mobility**

Intergenerational socio-occupational mobility was obtained from the occupational social class of the head of the household when the participant started working (assessed retrospectively) and the participant's current occupational social class. Occupational social class is a concise measurement based on the person's occupation, expected income based on level of education (average market value), and observed income. More information on the methodology used to create this variable can be found in another publication [21].

The occupational social class of the head of the family and the occupational social class of the participant were dichotomized into high (high, upper-middle, middle-middle) and low (low-middle, low). Accordingly, intergenerational socio-occupational mobility was comprised of immobility at the top of the hierarchy, upward mobility, downward mobility, and immobility at the bottom of the hierarchy.

Covariates

Age (continuous, in years), sex, and research center (São Paulo, Minas Gerais, Rio Grande do Sul, Rio de Janeiro, Bahia, and Espírito Santo) were used as covariates in this study.

Data analysis

The characteristics of the population, the prevalence of poor self-related health, and intergenerational mobility (educational and socio-occupational) were described according to race/skin color.

The association between racism and self-rated health was investigated using logistic regression models, obtaining the odds ratio (OR) and its 95% confidence interval (95%CI). A causal diagram of the proposed associations was constructed to guide our analyses (see Supplementary Material. http://cadernos.ensp.fiocruz.br/static//arquivo/supl-e00341920-ingl_3069.pdf). After obtaining the crude OR, the age, sex, and research center variables were then added, as they are potential confounding factors (Model 1). Subsequently, the intergenerational educational mobility variable was included to investigate to what extent intergenerational educational mobility explains racial iniquities in a self-rated health (Model 2). The OR percentage of the association between racism and self-rated health

mediated by intergenerational educational mobility (mediated percentage) was estimated using the following formula:

$$(OR_{Model\ 1} - OR_{Model\ 2})/(OR_{Model\ 1} - 1) \times 100$$

The same steps were taken separately to investigate the mediating role of intergenerational socio-occupational mobility in racial iniquity in self-rated health.

The level of significance was set at 0.05 and all analyses were performed using Stata 14.0 (https://www.stata.com/).

Results

Of the 14,386 participants included in the descriptive analysis, most were female (55%) and reported White race/skin color (54%). Although most participants had mothers with no education or incomplete elementary education (57%) and low socio-occupational class heads of household at the time they started working (50%), most participants themselves had completed a higher education program (52.4%), with the high socio-occupational class being the most frequent (33.1%), indicating that intergenerational social mobility was commonplace. Low maternal education, as well as low socio-occupational class of the head of the household when the participant started working, was more frequent among Blacks and Browns than among Whites. Similar disadvantages for Browns and Blacks in relation to Whites can also be observed in terms of education and current socio-occupational class (Table 1).

The prevalence of poor self-related health among ELSA-Brasil participants was 19.7%. However, it varied greatly according to race/skin color and, while only 15% of Whites rated their health as poor, it was 24% among Browns and 28% among Blacks (Figure 1).

Significant racial iniquity could be observed in intergenerational social mobility from an educational and socio-occupational perspective. The percentage with immobility at the top of the social hierarchy was greater among Whites than Browns and Blacks, while immobility at the bottom of the hierarchy was more prevalent among Blacks and Browns than Whites (Figure 2). It was also observed that Browns had some disadvantages when compared to Whites and advantages over Blacks (Figure 2). Moreover, upward educational mobility proved to be greater among Whites (24.3%) than Browns (20.2%) and Blacks (16.5%), whereas the opposite was observed with greater downward mobility among Blacks (15.7%) and Browns (14.3%) than among Whites (9.7%) (Figure 2a). Racial differences in downward and upward socio-occupational mobility were small (Figure 2b).

Regardless of potential confounding factors, Black and Brown individuals had greater odds of reporting their health as poor than did Whites: 115% (OR = 2.15; 95%CI: 1.92-2.41) and 82% (OR = 1.82; 95%CI: 1.64-2.01), respectively (Figure 3). Intergenerational educational mobility mediated 66% of the association between Black race/skin color and poor self-rated health (Figure 3a) and 61% of the association between Brown race/skin color and poor self-rated health (Figure 3b). Intergenerational socio-occupational mobility mediated 53% of the association between race/skin color and poor self-rated health among Blacks (Figure 4a) and 51% among Browns (Figure 4b).

Table 1

Distribution of the study population characteristics, according to self-reported race/skin color. *Brazilian Longitudinal Study of Adult Health* (ELSA-Brasil, 2008-2010) (N = 14,386).

| Characteristics | Total | Self-reported race/skin color | | |
| | | White | Brown | Black |
	n (%)	n (%)	n (%)	n (%)
Self-reported race/skin color				
White	7,787 (54.1)	-	-	-
Brown	4,202 (29.2)	-	-	-
Black	2,397 (16.7)	-	-	-
Age (years) [mean (SD)]	52.0 (9.1)	52.5 (9.4)	51.2 (8.6)	51.8 (8.7)
Sex				
Male	6,564 (45.6)	3,595 (46.2)	2,028 (48.3)	941 (39.3)
Female	7,822 (54.4)	4,192 (53.8)	2,174 (51.7)	1,456 (60.7)
Maternal education *				
Complete secondary education	3,374 (24.0)	2,469 (32.1)	685 (16.9)	220 (9.6)
Complete primary education	2,726 (19.4)	1,581 (20.6)	748 (18.4)	397 (17.3)
Incomplete primary education	5,989 (42.7)	3,010 (39.2)	1,852 (45.7)	1,127 (49.0)
Never attended school	1,954 (13.9)	627 (8.2)	772 (19.0)	555 (24.1)
Participant's education				
Complete higher education	7,542 (52.4)	5,201 (66.8)	1,690 (40.2)	651 (27.2)
Complete secondary education	5,035 (35.0)	2,021 (26.0)	1,793 (42.7)	1,221 (50.9)
Complete primary education	976 (6.8)	319 (4.1)	365 (8.7)	292 (12.2)
Incomplete primary education	833 (5.8)	246 (3.2)	354 (8.4)	233 (9.7)
Occupational social calls of the head of the household when the participant started working *				
High	2,964 (21.6)	2,220 (30.1)	600 (14.9)	144 (6.3)
Middle-high	1,351 (9.9)	906 (12.3)	331 (8.2)	114 (5.0)
Middle-middle	1,038 (7.6)	611 (8.3)	293 (7.3)	134 (5.9)
Middle-low	1,527 (11.1)	690 (9.3)	519 (12.9)	318 (14.0)
Low	6,813 (49.8)	2,960 (40.1)	2,286 (56.7)	1,567 (68.8)
Participant's current occupational social class *				
High	4,680 (33.1)	3,487 (45.8)	900 (21.7)	293 (12.3)
Middle-high	682 (4.8)	424 (5.6)	169 (4.1)	89 (3.7)
Middle-middle	2,679 (18.9)	1,336 (17.5)	895 (21.5)	448 (18.8)
Middle-low	2,616 (18.5)	1,048 (13.8)	885 (21.3)	683 (28.7)
Low	3,490 (24.7)	1,321 (17.3)	1,304 (31.4)	865 (36.4)

SD: standard deviation.

* Differences in totals are due to missing data.

Figure 1

Prevalence of poor self-rated health according to the race/skin color. *Brazilian Longitudinal Study of Adult Health* (ELSA-Brasil, 2008-2010) (N = 14,386).
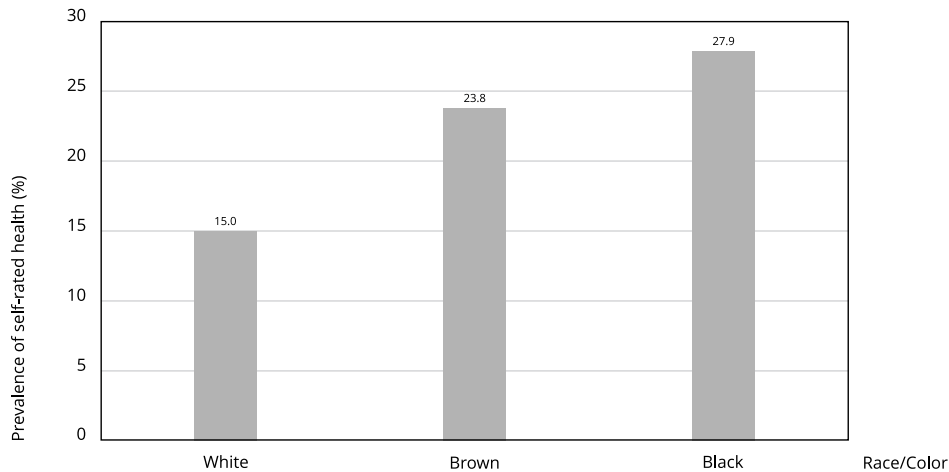
Discussion

Racial iniquity in poor self-rated health and intergenerational social mobility were significant among the participants in the ELSA-Brasil cohort. Black individuals were more than twice as likely to rate their health as poor and more often in lower rungs of social mobility, i.e., immobility at the bottom of the hierarchy and descending educational mobility, than Whites. It was also observed that, although there were non-negligible differences between Blacks and Browns regarding the prevalence of poor self-rated health and the frequency of adverse social pathways, Blacks and Browns were relatively closer to each other, and both presented social and health disadvantages when compared to Whites. This result showed that racial iniquity in poor self-rated health was strongly mediated by intergenerational social mobility, especially considering its educational component, thus corroborating our hypothesis. However, an important part of racial iniquity in poor self-rated health was not mediated by intergenerational social mobility, indicating that other mechanisms also contribute to the enormous racial iniquity in health in our country.

Several Brazilian population studies have investigated the association between race/skin color and self-rated health and consistently found that White individuals have a lower frequency of self-rated poor health than individuals who self-reported being of other races/colors [11,12,13,14,15]. However, these studies were not homogeneous with regard to how to analyze race/skin color, and some studies only analyzed the iniquity between Whites versus non-Whites [14] and Blacks/Browns (negroes) versus Whites [13]. Despite allowing the effects of power relationships between marginalized and privileged groups to be assessed, this approach makes it difficult to understand the breadth and nuances of racial iniquity in health in Brazil. Most studies that separately analyzed the distinctions of each of the races/skin color in self-rated health [11,12,15], as in this study, as well as most of those that dichotomized race/color for analysis [13,14], found that the association between race/color and self-rated health was independent of socioeconomic status indicators, such as education, income, or occupation. However, in one of these studies, this association was fully explained by the level of income and education [12]. It should be pointed out that socioeconomic position indicators do not meet confounding variable criteria for an analysis of the association between race/skin color and health outcomes. In this association the socioeconomic position indicators meet the criteria of mediation. This happens because race/skin color is an intrinsic characteristic of the individual, a fundamental cause that temporally precedes
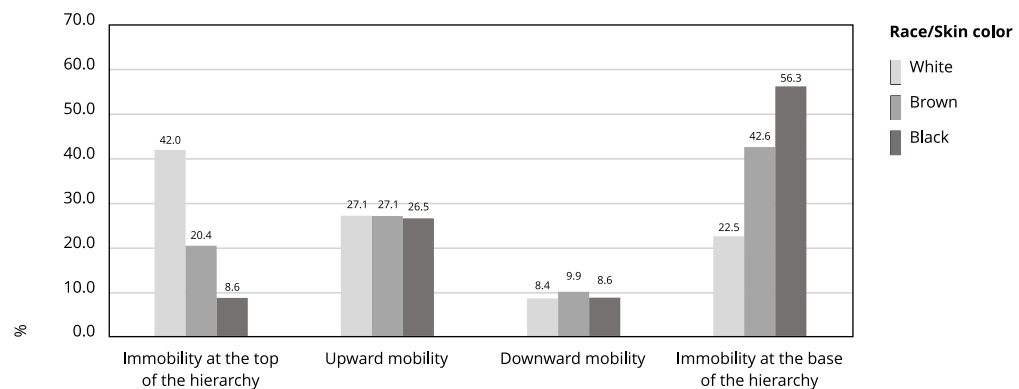
Figure 2

Intergenerational educational and socio-occupational mobility according to race/skin color among participants from *Brazilian Longitudinal Study of Adult Health* (ELSA-Brasil, 2008-2010) (N = 14,386).

2a) Educational mobility
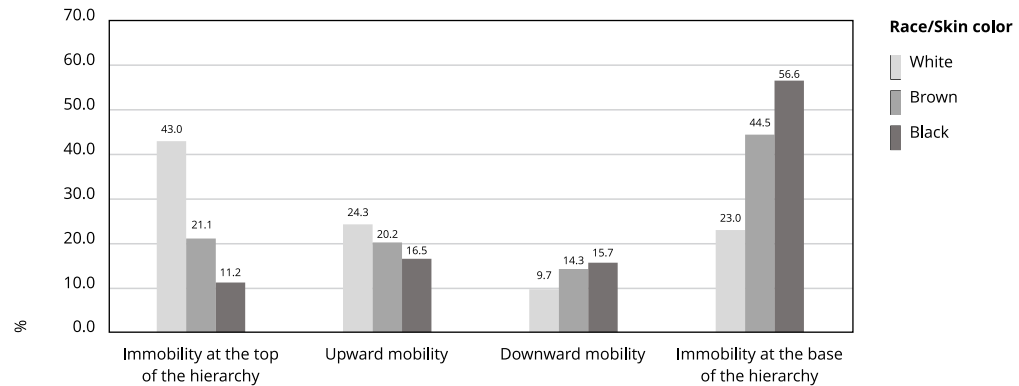
2b) Socio-occupational mobility

the socioeconomic position one reaches in adult life, and generates differences in educational opportunities, income, and occupation [36,37]. Nevertheless, previous studies investigating the association between race/skin color and self-rated health did not identify racism as a fundamental cause of racial differences in socioeconomic status indicators. Consequently, there is room for misinterpretations that the root of racial iniquity is social iniquity and not racism.

This study found that more than 50% of the racial iniquity in poor self-rated health was mediated by social mobility among Black and Brown individuals alike. Thus, our findings suggest that both the current socioeconomic position and the socioeconomic position of origin are important to understanding the country's racial health iniquities. The socioeconomic position of origin among individuals of different races/skin colors is strongly influenced by the accumulation of discriminatory actions throughout history that have the potential to "transmit" racial disadvantages across generations through the propagation of social iniquity [27]. Furthermore, racial iniquity persists even in cases where Blacks, Browns, and Whites have the same social position of origin. A recent study showed that, regardless of the socioeconomic position of origin, Whites have advantages over Browns and Browns over Blacks with respect to the level of education [25]. Additionally, there is evidence that the socioeconomic position of origin may interact with race/color to determine an individual's current
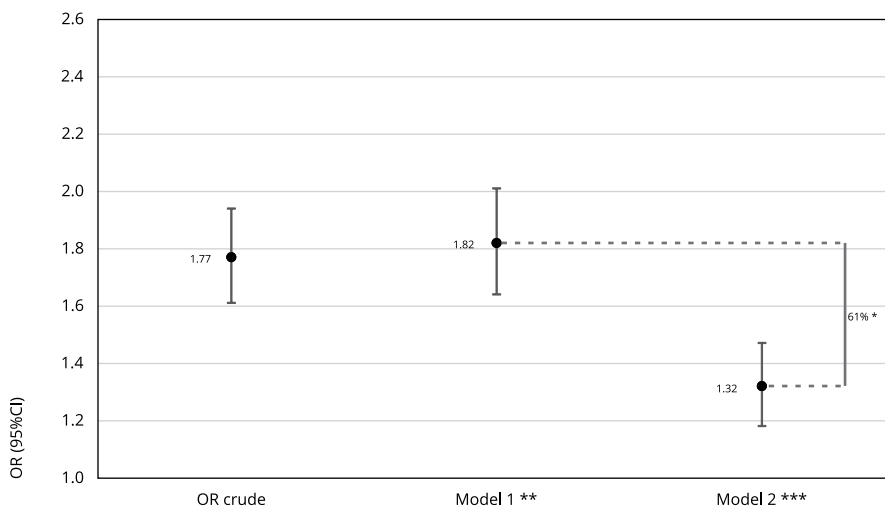
Figure 3

Odds ratios – OR (95% confidence interval – 95%CI), crude and adjusted, of the association between race/skin color and poor self-rated health before and after adjustments by the educational mobility among Black and Brown participants. Brazilian *Longitudinal Study of Adult Health* (ELSA-Brasil, 2008-2010).

3a) Race/Skin color Black
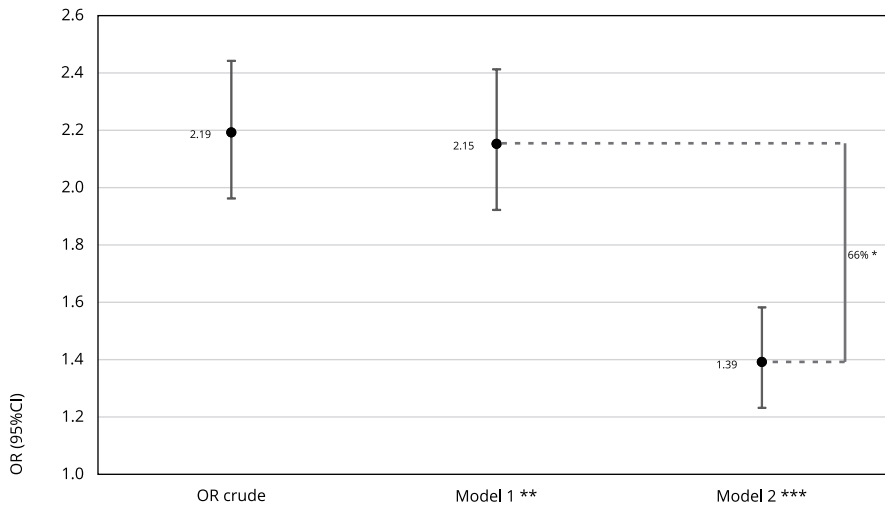
3b) Race/Skin color Brown

* The percentages described between Models 1 and 2 depict the percentage of the association between the race/skin color and poor self-rated health, which was measured by educational mobility, obtained by the following formula: $(OR_{Modelo\ 1} - OR_{Model\ 2})/(OR_{Model\ 1} - 1)$ x100;
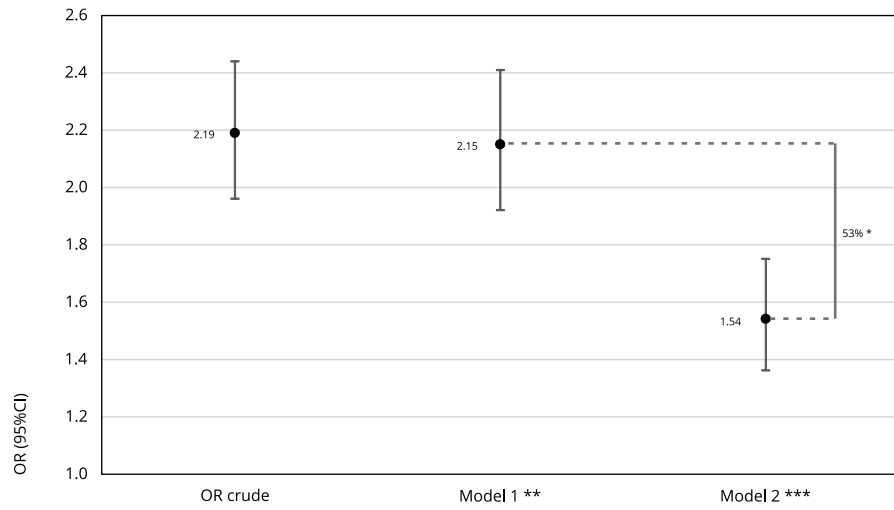** Model 1: adjusted by age, sex, research center;
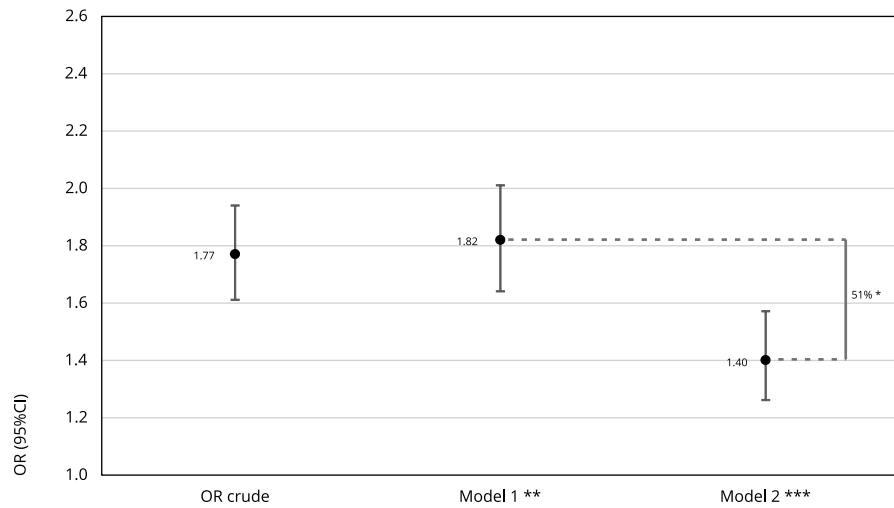*** Model 2: Model 1 + educational mobility.

Figure 4

Odds ratios – OR (95% confidence interval – 95%CI), crude and adjusted, of the association between race/skin color and poor self-rated health before and after adjustments by socio-occupational mobility among Black and Brown participants. *Brazilian Longitudinal Study of Adult Health* (ELSA-Brasil, 2008-2010).

4a) Race/Skin color Black

4b) Race/Skin color Brown

* The percentages described between Models 1 and 2 depict the percentage of the association between the race/skin color and poor self-rated health, which was measured by educational mobility, obtained by the following formula: $(OR_{Modelo\ 1} - OR_{Model\ 2})/(OR_{Model\ 1} - 1) \times 100$;
** Model 1: adjusted by age, sex, research center;
*** Model 2: Model 1 + educational mobility.

social position. For example, using *Brazilian National Household Sample Survey* (PNAD) data, it was shown that there is no racial iniquity in the opportunity for social mobility among individuals born in the lower classes [25]. However, among individuals with origins in the upper classes, Whites are more likely to remain at the top of the class hierarchy, while Blacks and Browns are more likely to have downward social mobility [25]. This finding might be explained by the greater presence of racial discrimination in the higher social positions, a fact well described in the literature [38] and a probable consequence of the greater coexistence that Blacks with a high socioeconomic status have with Whites in their daily lives [24]. The presence of such discrimination at the top of the hierarchy would make it more difficult for Blacks and Browns from a high socioeconomic position to remain there, favoring downward mobility.

The results of this study suggest that promoting upward social mobility among Blacks and Browns could attenuate racial health iniquity among Blacks and Browns. However, a rise in upward mobility may have a less than expected effect without a simultaneous curtailment of the structural racism that is deeply rooted in Brazilian society and permeates its institutions, not to mention being strongly present in our culture. For instance, several studies have indicated that upward social mobility and current high socioeconomic status among Blacks and other racial minorities exert a less protective effect on health than that observed among Whites [24,39,40]. This may be due to the stress generated by racial discrimination [35], since, as mentioned earlier, racial discrimination is more prevalent among Blacks with high socioeconomic status [38]. Additionally, structural racism interferes with the placement of individuals in the labor market, as well as access to housing, quality education, and various goods and services, meaning that, even if Brown and Black individuals attain the same level of education observed in Whites, they still tend to have less prestigious occupations and positions and lower income levels than Whites [17]. Consequently, although education is one of the main drivers of social mobility and significant advances in the access of Blacks and Browns to higher education in Brazil since 2002, as a reflection of affirmative action policies in higher education [41], this is not enough to promote racial equality, as Whites are much more efficient at converting experience and education into monetary returns due to the privileges they have accumulated throughout life [18]. Thus, affirmative action policies need to be accompanied by policies that act continuously on the different mechanisms in which racism operates [42], curtailing the economic and social injustices that lead to marginalizing Blacks and Browns to substandard schools, jobs, and housing; disproportionate exposure to occupational hazards; lower wages; lower rates of promotion; mass incarceration; police violence; and unequal health care [17]. Therefore, confronting racism requires a transformation and dismantling of the policies and various institutions that sustain the racial hierarchy in Brazil. To accomplish this, greater Black representation is imperative in the political arena in order to bring about much-needed change in the historically constructed values that have glorified the belief in White superiority and Black inferiority, compromising the life and health of Blacks and Browns throughout the generations [17,42].

An important part of racial iniquity in poor self-rated health in this study was not mediated by intergenerational social mobility. In addition to having less access to educational, economic, and occupational resources and, consequently, less social mobility, Blacks and Browns also have less access to quality housing, live in more economically segregated neighborhoods, have less social and political capital, have less access to health services, are more often exposed to stressful work, and are subjected to psychosocial stress due to racial discrimination [43]. All these exposures restrict life and work options in healthy environments, are associated with greater adherence to risky behaviors, and increase physiological adaptations in the nervous, endocrine, and immune systems, triggering metabolic changes that increase the risk of illness and death [44,45]. Thus, as defended by Nancy Krieger [43,44] in her ecosocial theory, individuals exposed to structural and interpersonal racism tend to biologically "incorporate" the exposures arising from the ecological and social context in which they live, leading to racial iniquities in health.

This study has limitations that should be considered. The ELSA-Brasil cohort is made up of public servants from Brazilian educational and research institutions who have a higher average income and level of education than that found in the general Brazilian population; therefore, our prevalence measurements are not representative of the population as a whole. The non-inclusion of very poor and unemployed individuals in the cohort could possibly explain the lower prevalence of poor self-related health in the ELSA-Brasil as compared to that observed in the 2013 *Brazilian National Health*

Survey (PNS) (19.7% versus 33.9 %, respectively) [46]. It is also worth noting that the population at the top of the Brazilian social hierarchy is underrepresented in the ELSA-Brasil population. By excluding those individuals who occupy the extreme ends of the social hierarchy, the heterogeneity in social mobility variables may have been reduced. Therefore, the mediating effect of social mobility on the relationship between race/skin color and self-rated poor health in Brazil may be greater than that pointed out in this study. However, racial iniquity in self-rated health in the ELSA-Brasil was greater than that observed in the PNS: while in ELSA-Brasil 15% of the Whites, 24% of the Browns, and 28% of the Blacks rated their health as poor, these percentages in the PNS were 30%, 38%, and 38% for Whites, Browns, and Blacks, respectively [46]. Finally, despite the small percentage of missing data for educational mobility (2.3%), these losses were differential with regard to the explanatory variable and the outcome, suggesting the associations may have been underestimated. Conversely, although the loss of information for occupational mobility was almost three times higher (6.4%), it was not related to self-rated health, suggesting a lesser impact on the associations.

The strengths of this study include the large size of the ELSA-Brasil cohort, the inclusion of participants from three Brazilian regions, racial heterogeneity, and the existence of normally uncommon information in epidemiological studies on intergenerational mobility. These characteristics allowed us to examine and estimate the extent to which intergenerational social mobility (educational and socio-occupational) mediates racial iniquities in poor self-rated health.

In conclusion, our results reiterate the inordinate racial iniquity in self-rated health in the Brazilian context and confirm our hypothesis that intergenerational social mobility contributes significantly to mediating this iniquity. Considering that the propagation of racial iniquity in social mobility from one generation to another not only contributes to maintaining it over time, but also to expanding it, it is imperative to promote public policies with a focus on curtailing structural racism to mitigate the profound racial iniquity in health found in the country.

Contributors

Additional informations

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Resumo

Pretos e pardos apresentam grandes desvantagens de saúde, possuem menores chances de ascensão na hierarquia social no curso de vida e menores níveis socioeconômicos do que brancos como resultado do racismo estrutural. Entretanto, pouco se sabe sobre o papel mediador da mobilidade intergeracional na associação entre racismo e saúde. O objetivo do presente estudo foi investigar a associação entre racismo e a autoavaliação de saúde, e verificar em que medida a mobilidade social intergeracional media essa associação. Estudo transversal realizado com dados de 14.386 participantes da linha de base (2008-2010) do Estudo Longitudinal de Saúde do Adulto *(ELSA-Brasil). Escolaridade materna, escolaridade do participante, classe sócio-ocupacional do chefe de família e classe sócio-ocupacional do participante compuseram os indicadores de mobilidade social intergeracional (educacional e sócio-ocupacional). Modelos de regressão logística foram utilizados. A prevalência de autoavaliação de saúde ruim foi de 15%, 24% e 28% entre brancos, pardos e pretos, respectivamente. Após ajustes por idade, sexo e centro de investigação foram encontradas maiores chances de autoavaliação de saúde ruim entre pretos (OR = 2,15; IC95%: 1,92-2,41) e pardos (OR = 1,82; IC95%: 1,64-2,01) quando comparados aos brancos. A mobilidade educacional e sócio-ocupacional intergeracional mediaram, respectivamente, 66% e 53% da associação entre a raça/cor e autoavaliação de saúde ruim em pretos, e 61% e 51% em pardos, respectivamente. Resultados confirmam a iniquidade racial na autoavaliação de saúde e apontam que a mobilidade social intergeracional desfavorável é um importante mecanismo para explicar essa iniquidade.*

Racismo; Raça; Disparidades nos Níveis de Saúde; Mobilidade Social; Iniquidade Social

Resumen

Negros y mulatos presentan grandes desventajas de salud, poseen menores oportunidades de ascensión en la jerarquía social en el trascurso de su vida, y menores niveles socioeconómicos que los blancos, como resultado del racismo estructural. No obstante, poco se sabe sobre el papel mediador de la movilidad intergeneracional en la asociación entre racismo y salud. El objetivo de este estudio fue investigar la asociación entre racismo y autoevaluación de salud, así como verificar en qué medida la movilidad social intergeneracional interfiere en esa asociación. Se trata de un estudio transversal, realizado con datos de 14.386 participantes de la base de referencia (2008-2010) del Estudio Longitudinal de Salud de Adultos *(ELSA-Brasil). La escolaridad materna, del participante, clase socio-ocupacional del jefe de familia y clase socio-ocupacional del participante compusieron los indicadores de movilidad social intergeneracional (educacional y socio-ocupacional). Se utilizaron modelos de regresión logística. La prevalencia de autoevaluación de mala salud fue de 15%, 24% y 28% entre blancos, mulatos/mestizos y negros, respectivamente. Tras los ajustes por edad, sexo y centro de investigación, se encontraron mayores oportunidades de autoevaluación de mala salud entre negros (OR = 2,15; IC95%: 1,92-2,41) y mulatos/mestizos (OR = 1,82; IC95%: 1,64-2,01), cuando se compara con los blancos. La movilidad educacional y socio-ocupacional intergeneracional mediaron, respectivamente, 66% y 53% de la asociación entre raza/color y autoevaluación de mala salud en negros, y 61% y 51% en mulatos/mestizos, respectivamente. Los resultados confirman la inequidad racial en la autoevaluación de salud y apuntan que la movilidad social intergeneracional desfavorable es un importante mecanismo para explicar esa inequidad.*

Racismo; Raza; Disparidades en el Estado de Salud; Movilidad Social; Iniquidad Social