Health expectancies among non-white and white populations living in Havana, 2000–2004

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Abstract

This study explored the role of skin color in health expectancies by computing average lifetime in self-rated good health and lifetime without functional limitations in activities of daily living (ADL) among non-white and white 60+ adults living in Havana (Cuba) in 2000–2004. The Sullivan method was used to estimate health expectancies. The contributions from the mortality and health effect to the differences in health expectancies were assessed by decomposition. White males aged 60 were expected to live longer in self-rated good health than non-white males, white and non-white females. Most of the differences among males are attributed to the health effect. No differences were found between white and non-white females in expected lifetime in moderate to full ADL functioning while a difference in ADL functioning of 0.8 years favored white over non-white males. The mortality effect accounted for most difference across the two male groups. From age 80, both non-white groups could expect to live longer than their white counterparts. The results showed that skin color is a risk marker of mortality and morbidity among older adults living in Havana. Although health behaviors vary, the differences were not anticipated due to high social equity and equal health care provision in Cuba. This finding calls for further research on health expectancies by skin color that is representative of the Cuban population and includes information on different diseases and conditions.

Keywords Health expectancies · Self-rated health · Disability · Skin color

Introduction

By 2025, Cuban elders are expected to account for 25% of the nation's population and will constitute one of the “oldest” populations in the world (Torres Vidal and Gran Álvarez 2005). In 2002, the Population and Housing Census showed that out of 11,177,743 Cubans, 65% were white and 35% were non-white (Alfonso León 2009). Despite universal access to health care and social and public health achievements, non-white males and females can expect to

live 1.9 years less than their white counterparts (Albizu-Campos and Cabrera 2014). This disparity raises a question for demographers, public health specialists and policy makers: What are the differences in length and healthfulness of life across these two sub-populations?

Health Expectancy (HE) indicators enable the simultaneous analysis of mortality and morbidity measures. This study explores the role of skin color in HE by computing and analyzing the differences in summary measures of expected lifetime in good health and expected lifetime in moderate to full activities of daily living (ADL) of non-white and white elders living in the capital of Cuba during the 2000–2004 period.

Social and health profile

From the early 1960s, Cuba started moving toward a decentralized health care system (Cooper et al. 2006). Health care investment led to reductions in infant mortality and increased control of infectious and chronic diseases (Cooper et al. 2006). Cuba's population also benefitted

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from important educational and social programs which led to a decrease in social disparity and contributed to increasing life expectancy (LE). Cuban women and men are expected to live for 81.4 and 76.9 years, respectively (WHO 2016). Cuba has the third highest LE in the region after Chile and Costa Rica (Albizu-Campos and Cabrera 2014). Despite these developments, research indicates that non-white groups are currently exposed to higher morbidity and mortality in comparison with white populations (Albizu-Campos 2008; Albizu-Campos and Cabrera 2014).

Albizu-Campos and Cabrera (2014) found that the skin color variable coupled with social determinants of health make these groups more vulnerable to disease and death. Non-white excess mortality has been reported in the most prevalent causes of death, except for the case of late maternal mortality (Albizu-Campos 2008). A higher proportion of non-whites reported drinking alcohol every day, more non-whites persons are smokers and fewer non-white than white individuals are previous smokers (Albizu-Campos and Cabrera 2014). Evidence also suggests lower health care utilization by non-white populations in comparison with white groups (Espina 2008).

Cuba's population has also reached important milestones in education such as universal school enrollment and attendance, consistent pedagogical quality and nearing universal adult literacy (Gasperini 2000). As presented in Table 1, there are not large differences in the levels of education for non-white and white Cubans which suggests that the study of health inequality across different skin color groups will only be modestly confounded by social position. None of the differences between non-white and white elders presented in Table 1 were statistically significant.

Table 1 Number and percentage of study sample by level of education, skin color, sex, and age intervals 60–69 and 70+ (Project SABE Havana)

Skin color and sex	Age	High	Medium	Low
White males	60–69	17 (7%)	59 (23%)	183 (71%)
	70+	16 (8%)	21 (10%)	175 (83%)
Non-white males	60–69	12 (9%)	23 (18%)	92 (72%)
	70+	4 (4%)	11 (10%)	95 (86%)
White females	60–69	23 (8%)	44 (15%)	217 (76%)
	70+	28 (6%)	36 (8%)	377 (85%)
Non-white females	60–69	12 (6%)	30 (14%)	171 (80%)
	70	13 (5%)	19 (8%)	220 (87%)

Levels of education were grouped according to the International Standard Classification of Education: *Low*—Primary and lower secondary education (ISCED 1–2); *Medium*—Upper secondary education (ISCED 3–4); *High*—Tertiary education (ISCED 5–6)

Skin color as a risk marker

Evidence on the association of skin color and health expectancies is limited, and most studies on this topic have been conducted in the USA (Pongiglione et al. 2015). The variable ethnicity or skin color has been overlooked by health research due to its associations with socioeconomic status (Chor and de Araújo 2005; de Araújo et al. 2010). Some authors have argued that the study of health inequality across different skin color groups is less informative than the study of health inequality across socioeconomic status or educational level (Guralnik et al. 1993; McGee et al. 1999). Nevertheless, as Kelley-Moore and Ferraro (2004) suggest, findings are not consistent and research has demonstrated that, socioeconomic position and educational level aside, factors such as lifestyle choices influence differences in skin color in health expectancies. Mutchler and Burr (1991) found that although part of the differential in health and health care utilization was associated with socioeconomic position and education patterns, the effect of ethnicity in self-rated health endured. Finally, Pongiglione et al. (2015)'s systematic review of the literature on health expectancies showed a general agreement on the association between health inequalities and race or skin color. The question then is whether this also applies to a population that is characterized by a high degree of social equity and equal health care provision, such as elders living in Havana.

Methods

The Sullivan method is the standard tool used to compute health expectancy (Jagger et al. 2007; Sullivan 1971). The method combines life tables and health survey data on prevalence of health status of a population or sub-population. Expected number of years lived in the age intervals 60–64, 65–69, ..., 85+ were multiplied by age-specific proportions of people in a specific state of health taken from the SABE survey. Expected lifetime in that state for 60-year-olds was calculated by adding up these years and dividing the sum by the number of survivors at age 60. By relating years in good health to life expectancy, a measure of the proportion of lifetime in good health was established. Health expectancy at age 70 was estimated in the same way. The major source of random variation arises from the health surveys and has been considered in the analysis.

The contributions from the mortality effect and the morbidity effect to the differences in health expectancy were assessed by decomposition (Nusselder and Looman

2004). A difference in age-specific mortality implies different life expectancy because a greater or lesser number of years lived affects not only the specific age group but also the years lived in future older ages. This difference (the mortality effect) leads to different expected lifetimes in good/poor health. A difference in the proportion of people in good/poor health represents the decomposition's other component (the morbidity effect).

For this study, morbidity data was compiled from the cross-sectional survey on health, well-being, and aging in Latin America and the Caribbean (Project SABE Havana) which was accessed through the Inter-university Consortium for Political and Social Research. Mortality data and population estimates were obtained under the auspices of the Center for Demographic Studies (CEDEM) of the University of Havana.

Data

Project SABE inquired about the health conditions and limitations affecting 60+ citizens living in seven capital cities of Latin America. The highly similar face-to-face interviews were conducted simultaneously in the 1999–2000 time period (Alfonso et al. 2005). In addition to investigating the health state of elders, the surveys collected information on characteristics such as sex, age, occupation, family arrangements, sources of income, and others (Alfonso et al. 2005; Rose et al. 2008).

The National Statistics Office in Cuba was in charge of determining the sampling frame, which was based on the politico-administrative division of the city of Havana (15 municipalities) (Albala et al. 2005). Each Primary Sampling Unit (PSU) or Basic Geostatistical Area (AGEB) consisted of an average of 180 households. The selection of households was proportional to the size measure, the last one being the total number of households in the city with permanent residents. The Secondary Sampling Unit (SSU) consisted of five sections comprised of five households each were selected (with equal probability) per AGEB. This selection was carried out in order to avoid underrepresentation of particular groups of age or sex in the survey. Out of the 5000 households selected, 4816 of them were visited. The Third Sampling Unit (TSU) consisted of one person 60+ living in each household. Out of each selected household, one individual 80+ in household was always selected; if no person 80+ was available, a person 60+ was selected with equal probability. A total of 1998 households hosted at least one 60+ adult, and one per household was randomly selected for an interview. However, 51 of the individuals refused to participate and 92 of them were considered losses due to other reasons such as “empty house” or “death.” Thus, the final number of persons interviewed was 1905. This represented

0.5% of the total population of the city aged 60 and older (Albala et al. 2005).

A total of 21% of the households selected hosted an 80+ adult (Albala et al. 2005). Out of the 1905 interviews, 68 required the support of another member of the family in order to answer some questions and 176 of the interviewees needed a substitute (Albala et al. 2005).

Project SABE Havana data was grouped in five-year age intervals, which is the standard interval recommended by the European Health Expectancy Monitoring Unit (Jagger et al. 2007). Studies on health states tend to be small and are not adequate for the analysis of narrower age intervals (Jagger et al. 2007). That is the case of Project SABE Havana; hence, abridged life tables were used in this investigation. To attain accurate results, age-specific mortality data from the most proximate period to that of Project SABE Havana was used.

The mortality data required for this study, skin color and age-specific number of deaths as well as mid-year population, was obtained for five-year age intervals. Life tables were computed by using a linkage of death certificates and population estimates provided by the CEDEM. According to Alfonso (2011), data collected from surveys and census with different objectives but showing consistent proportions of skin color groups and collected in similar time periods can be combined. The age-specific mid-year population and the number of deaths were obtained for June 30, 2004 and December 30, 2004, respectively.

Description of variables

Cuban physicians use the dichotomous skin color variable (white and non-white) in death certificates. As reported by Albizu-Campos and Cabrera (2014), proportions reported in 2003 are similar to those reported in succeeding years. Project SABE Havana asked participants to select one option that best described them out of the answers: “white,” “mestizo,” “mulatto,” “black,” “indigenous,” “Asian,” and “other” (Albala et al. 2005). To ensure consistency between the mortality data and the morbidity data from Havana SABE survey, all respondents who did not select the option of “white” were classified as “non-white.” The mid-year population was also distributed into whites and non-whites, but it was previously dichotomized by the CEDEM. The Center obtained the information from the national census, which in relation to this question, shares its methodology with Project SABE. The proportions of the mid-year population by skin color obtained from CEDEM (66% white; 33% non-white) are similar to the population proportions reported by Project SABE Havana (63% white; 37% non-white).

Health expectancies in the present study were expressed in terms of information on self-rated and functional health from Project SABE Havana. Expected lifetime in self-rated

good health was based on responses to the question about self-rated health (SRH): “Would you say that your health is excellent, very good, good, fair or bad?” This variable was not recorded when a family member had to answer on behalf of the participant. Those without need of assistance chose between the following responses: “Excellent,” “Very good,” “Good,” “Fair,” “Bad,” “Does not know,” and “Does not answer” (Alfonso et al. 2005). For the purpose of this study, the answers were dichotomized into “Excellent,” “Very good,” or “Good” while the rest were categorized as “Less than good.” As in the case of the “proxy,” the subjects who chose not to answer or indicated not knowing the answer were excluded from the study. A total of 1728 responses were included in the analysis of SRH.

The functional health outcome—expressed in terms of expected lifetime in moderate to full ADL functioning—was based on the ADL index (Shelkey and Wallace 2001). As in the case of SRH, participants who chose not to answer or indicated not knowing the answer to at least one of the ADL questions were not included in the study. Proxy responses were included in the ADL measure and a total on 1902 responses were included in the analysis. Table 2 presents characteristics of the study sample based on the Havana SABE survey data.

ADL functioning was comprised of responses to the following questions:

Do you experience any difficulty when walking across a room?

Do you experience any difficulty when getting dressed (including putting on shoes, socks, or tights)?

Do you experience any difficulty when bathing (including getting in and out of the bathtub)?

Do you experience any difficulty when eating (including cutting the food, pouring liquids, and others)?

Do you experience any difficulties when getting in and out of bed?

Do you experience any difficulties when using the toilet (including seating down and getting up from the toilet seat)?

Participants score one point every time the answer to a question was “No,” up to a maximum of six points (Shelkey and Wallace 2001). A total of six positive responses indicate full ADL functioning while four points denote moderate difficulty (Shelkey and Wallace 2001). Respondents who scored four or more were categorized as having moderate to full ADL functioning and those who scored less than four as experiencing low ADL functioning.

Results

Life expectancies

The results indicate that white females had the longest estimated LE: 23.3 years at age 60. Non-white females aged 60 were estimated to live for another 22.9 years, 0.4 years less than their white counterparts (Table 3). White males, on the other hand, were projected to live for 0.8 years more than non-white males, 19.4 and 18.6 years, respectively. Despite the continuous LE advantage found in younger cohorts of the white population, highly similar estimates are found across white and non-white populations aged 75. Once this threshold is passed, non-white females and males are expected to live for more years than their white counterparts.

Table 2 Characteristics of the SABE Havana survey

Skin color and sex	Population	Average age	Prevalence of	
			Self-rated good health	Moderate to full ADL
	<i>N</i> (%)	Years	<i>N</i> (%)	<i>N</i> (%)
White males	471 (25%)	70.5	47.1	93.0
Non-white males	237 (12%)	70.5	35.4	92.3
White females	727 (38%)	73.2	34.3	88.5
Non-white females	427 (25%)	72.3	31.7	90.4

Table 3 Life expectancies by age, sex, and skin color

Age	White males	Non-white males	White females	Non-white females
60	19.4 (19.2–19.6)	18.6 (18.3–19.0)	23.3 (23.1–23.5)	22.9 (22.6–23.2)
65	15.9 (15.6–16.1)	15.3 (15–15.7)	19.3 (19.0–19.5)	19.0 (18.7–19.3)
70	12.6 (12.4–12.8)	12.4 (12.1–12.7)	15.6 (15.4–15.8)	15.3 (15.1–15.6)
75	9.8 (9.6–10.0)	9.8 (9.5–10.1)	12.4 (12.2–12.5)	12.3 (12.0–12.6)
80	7.6 (7.4–7.8)	7.6 (7.3–7.9)	9.3 (9.2–9.4)	9.7 (9.5–9.9)
85+	6.0 (5.9–6.1)	6.3 (6.2–6.4)	7.0 (6.9–7.1)	7.6 (6.5–8.8)

Table 4 Life expectancy, expected lifetime in good SRH, and proportion of good SRH among whites and non-whites at ages 60 and 70

Skin color and sex	Age	Life expectancy	Expected lifetime in good SRH	Proportion of expected lifetime in good SRH
		Years	Years (95% CI)	% (95% CI)
White males	60	19.4	9.3 (8.5–10.3)	48.4 (43.8–53.0)
	70	12.6	6.0 (5.20–6.9)	48.1 (41.4–54.8)
Non-white males	60	18.6	7.0 (5.9–8.2)	37.8 (31.5–44.1)
	70	12.4	4.3 (3.1–5.4)	34.6 (25.4–43.9)
White females	60	23.3	7.9 (7.1–8.7)	34.1 (30.7–37.6)
	70	15.6	5.2 (4.5–5.8)	33.7 (29.3–38.1)
Non-white females	60	22.9	7.0 (6.0–7.9)	30.8 (26.6–35.0)
	70	15.3	5.2 (4.3–6.0)	34.2 (28.5–40.0)

Fig. 1 Differences between whites and non-whites in health expectancies at age 60 decomposed into the mortality and health effects

Expected lifetime in good self-rated health

As displayed in Table 4, white males aged 60 are expected to live longer in good SRH than non-white males and both female groups. Among those aged 60, the skin color gap favors white males (2.3 years) over non-whites males and

white females (0.9 years) over their non-white counterparts, although the latter difference is not statistically significant. Sixty and 70-year-old non-white males spend fewer years in good health than white males. No difference in expected lifetime in good SRH between white and non-white females was observed at age 70. The proportion of expected lifetime in good SRH at age 70 was higher among non-white than white females, although not statistically significant.

The contribution of the mortality effect to the difference between white and non-white 60-year-old males in expected lifetime in good SRH was 0.3 years while the contribution of the health effect was 2.0 years. In females, the mortality effect on the difference in expected lifetime in good SRH was approximately 0.1 years while the health effect represented 0.8 years of the female differential as displayed in Fig. 1.

Expected lifetime in moderate to full ADL functioning

No differences between white and non-white females in expected lifetime in moderate to full ADL functioning were

Table 5 Life expectancy, expected lifetime in moderate to full ADL functioning, and proportion of expected lifetime in moderate to full ADL functioning among whites and non-whites at ages 60 and 70

Skin color and sex	Age	Life expectancy	Expected lifetime in moderate to full ADL functioning	Proportion of expected lifetime in moderate to full ADL functioning
		years	years (95% CI)	% (95% CI)
White males	60	19.4	18.3 (17.9–18.7)	94.6 (92.6–96.7)
	70	12.6	11.5 (11.1–12.0)	92.3 (88.8–95.8)
Non-white males	60	18.6	17.5 (16.9–18.1)	94.3 (91.0–97.5)
	70	12.4	11.3 (10.7–12.0)	91.9 (86.4–97.4)
White females	60	23.3	20.8 (20.3–21.3)	90.1 (88.0–92.1)
	70	15.6	13.2 (12.7–13.6)	85.7 (82.5–88.8)
Non-white females	60	22.9	20.9 (20.3–21.4)	92.1 (89.6–94.5)
	70	15.3	13.3 (12.7–13.9)	88.0 (84.1–91.9)

found (Table 5). A difference of 0.8 years favored white males aged 60 over non-white males and no difference was seen at age 70 (Table 5).

The mortality effect contributed by 0.7 years to the difference of 0.8 years in expected lifetime in moderate to full ADL functioning between white and non-white males aged 60, while the contribution of the disability effect was 0.1 years (Fig. 1). As for females, the mortality effect to the difference was 0.4 years of the total difference while the contribution of the disability effect was – 0.5 years, reflecting that white females can expect to live 0.5 more years with ADL limitations than non-white females as presented in Fig. 1.

Discussion

This study aimed to calculate the average lifetime in self-rated good health and without functional limitations in ADL among non-white and white 60+ adults living in Havana in 2000–2004. White males are expected to live significantly longer than non-white males in self-rated good health (ages 60 and 70) and in moderate to full ADL functioning (age 70). The health effect contributed to most of the difference in self-rated good health among men while the mortality effect contributed to most of the difference in the ADL-related expectancies. This contrast could be attributed to the nature of SRH as a multidimensional and global measure of health assessment (Tareque et al. 2015). SRH comprises wider contextual and socioeconomic aspects of health (e.g., psychosocial well-being and health service utilization) and has been described as a strong predictor of future mortality, morbidity, functional decline, and disability (Tareque et al. 2015). It is also possible that the difference in skin color groups is a result of an association with determinants which cannot be quantified such as self-perception and discrimination (Albizu-Campos 2008; Albizu-Campos and Cabrera 2014) and that the measure of SRH encompasses forms of morbidity that are not captured by disability measures such as health disparities at earlier stages of the disablement process.

Non-white males can expect to live the fewest years in moderate to full ADL functioning and they attain lower results than their female counterparts. Males could be more easily transferred into the sick role since they may count on the support of their spouses (Verbrugge 1990). Another reason for this gender gap may result from Project SABE Havana's preference of 80+ respondents over younger ones. Females represent most older participants and they might be more used to the limitations and may not consider themselves as having difficulties in some activities that younger respondents could consider limiting (Minicuci et al. 2011). Overall, the results from this study do not confirm the

female–male paradox in SRH or ADL functioning reported by other authors (Oksuzyan et al. 2010).

No significant differences were found across white and non-white females. Non-white females are expected to have a small ADL advantage over their white counterparts. Research on gender roles by skin color groups in Cuba found that a higher proportion of non-white females than white females are heads of households (Catasus Cervera 1999). This was also the case among married women (Catasus Cervera 1999). As a result, considering that the disabling process is influenced by social components, non-white women who are heads of households could be less prone to demand help and show an ADL advantage (Barberger-Gateau et al. 2000; Zunzunegui et al. 2009).

Finally, although white groups have a modest LE advantage at age 60 over non-whites populations, from age 80 non-white groups are expected to live longer than their white counterparts. This finding is consistent with the work of Guralnik et al. (1993) and the findings of Clark et al. (1993) in the early 1990s in the USA. These researchers suggested that the outcome was explained by the hypothesis of selective survival (Manton and Stallard 1981). The hypothesis proposes that groups with higher morbidity do not reach the oldest groups (Guralnik et al. 1993). This phenomenon is expected as populations age. However, in the context of the USA as well as in Havana, the event of selective survival may be more common among non-white than among white populations. Thus, non-white populations that pass a certain age threshold have a health advantage over their white counterparts. Nevertheless, as explained by Kannisto (1991), genetic and acquired factors may explain the difference across groups. Accordingly, there is not enough evidence in this study to conclude whether the crossover should be ascribed to selective survival.

An additional explanation for the observed age crossover relates to the quality of data of birth reported by the older cohorts (Kannisto 1991). There is currently no analysis assessing the quality of this variable in Cuba. However, two studies conducted in Cuba argue that there is no evidence of data over-reporting among non-white populations (Albizu-Campos 2008; Albizu-Campos and Cabrera 2014).

In comparison with the findings of Guralnik et al. (1993) and Geruso (2012) who identified large gaps in life expectancy across both sexes and skin color groups, the differences presented in this study are not as wide. This is consistent with the improvements via health care and educational reforms that increased non-white's employment opportunities and access to health care (de la Fuente 2001). The relatively small difference across sexes in both skin color groups was also observed by Albizu-Campos and Cabrera (2014) who explain it is a result of the stagnation in life expectancy of women.

Study limitations

Among older adults, poor self-perceptions of health are associated with higher mortality and physical limitations (Idler and Kasl 1995). Despite its construction from a single survey question, SRH is considered a highly comprehensive measure of population health. This characteristic, nevertheless, hinders researchers' capacity to define whether the subject's response is based on biological or psychological aspects (Jylhä et al. 1998).

The Instrumental activities of daily living scale constitute a practical method for assessing individuals' ability to perform important living skills independently (Graf 2008). Expected lifetime in moderate to full Instrumental activities of daily living functioning was also computed as part of this study; however, results are not shown due to the high number of missing responses to IADL questions.

Since proxy respondents commit time and effort to the care of the individual, they may under or overestimate the capability of the subject. Nevertheless, research indicates that spouses—a most common proxy respondent in surveys on the health of older adults—may be accurate proxies in health evaluations of elders (Elliot et al. 2008).

The total of 1905 participants in the SABE Havana survey included in this study and the division of the data into gender, age groups, and skin color reduced the power of the study. The morbidity/health data, and consequently, both mortality and population figures, employed in this investigation were collected during the 1999–2000 and 2004 periods, respectively. Since the data is not recent, extrapolating results and conclusions to the present is not as rigorous a practice as presenting more recent material. At present, the SABE survey continues to be the most comprehensive study of the health conditions and functional limitations of the older population of Havana.

Although more recent survey data is not available, it could be inferred that replications of this research in later years would yield similar results. Firstly, the proportions of white and non-whites populations in Cuba in 2002 (65% white and 35% non-white) and in 2012 (64.1% white and 35.9% non-white) were similar (Alfonso León 2009; CEDEM 2016). Secondly, the proportions of death in 2003 (68.6% whites, 30.5% non-whites, and 0.9% unknown) and in 2012 (68.3% whites and 31.7% non-whites) were also alike (CEDEM 2016). Finally, the case is the same for life expectancy for white and non-white in 2003 (78.1 years for white groups and 76.17 for non-white groups) and in 2011–2013 (79.2 years corresponding to white populations and 77.5 year to non-white populations) (Albizu-Campos and Cabrera 2014; CEDEM 2016). These three measures are central to the analysis health expectancies. Their consistency across time suggests that the findings presented in this study could be relevant in the present. Nevertheless, further

information on health and disability trends would be needed to ascertain this.

Practical implications

Although, in comparison with other contexts, the differences found across skin color groups are small, any negative exposure that is distributed differentially between groups deserves attention. By calculating health expectancies by skin color group, this study builds on previous finding on the role of skin color as a risk marker for white and non-white Cubans' health (Albizu-Campos 2008; Albizu-Campos and Cabrera 2014). Further research could investigate the risk factors that determine the health of white and non-white Cubans, specifically men.

The broader socioeconomic environment as well as determinants such as family arrangements, health attitudes, and behavior may determine the relation between skin color and health. The multidimensionality of the variable skin color, as previously discussed, reflects on the health of the white and non-white population of Havana and validates its value in health policy. As this study has shown, the health effect contributed highly to the SRH differential among men. Accordingly, as an example of a course of action, interventions seeking to enable individuals to increase control over their health (i.e., through physical activity practices, healthy living interventions, and increasing access to health services) could lay emphasis on the neighborhoods where non-white populations are overrepresented.

By measuring health expectancies by skin color in Havana, this investigation aimed to contribute to bridging a research gap in health expectancies. Health expectancy research in Cuba is under development, and data recording is not abreast of current socio-demographic changes. Thus, to devise effective policy interventions on health and well-being, more recent and larger surveys on health expectancy and skin color need to be conducted. This data should be representative of Cuban population and include information of diseases and health conditions.

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