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Carol Graham
Barton H. Hamilton
Yung Chun
Stephen Roll
Will Ross
Karen E. Joynt-Maddox
Michal Grinstein-Weiss

Working Paper

2020-067

09/2020

HUMAN CAPITAL AND
ECONOMIC OPPORTUNITY
GLOBAL WORKING GROUP

The University of Chicago
1126 E. 59th Street Box 107
Chicago IL 60637

www.hceconomics.org

Coping with Covid-19:

Implications of Differences in Resilience across Racial Groups for Mental Health and Well-being

Carol Graham[1], Barton H. Hamilton[2], Yung Chun[3], Stephen Roll[3,4], Will Ross[5], Karen E. Joynt Maddox[4,5], and Michal Grinstein-Weiss[3,4]

Abstract

Question: In what ways has the COVID-19 pandemic revealed differences across racial groups in coping, resilience, and optimism, all of which have implications for health and mental well-being?

Findings: Data obtained from 5,000 US survey respondents using a national sample indicate that, despite extreme income and health disparities before and during the COVID-19 outbreak, Blacks and Hispanics remain more resilient and optimistic than their White counterparts. Moreover, the greatest difference in resilience, optimism and better mental health—is found between poor Blacks and poor Whites, with some linkages to behaviors in compliance with lockdown guidelines.

Meaning: These deep differences in resilience have implications for the long-term mental health of different population groups in the face of an unprecedented pandemic. Better understanding these dynamics may provide lessons on how to preserve mental health in the face of public health and other large-scale crises.

[1] Global Economy and Development, The Brookings Institution, Washington, DC and University of Maryland, College Park, MD
[2] Olin Business School, Washington University in St. Louis, St. Louis MO
[3] Social Policy Institute, Washington Univeristy in St. Louis, St. Louis MO
[4] Brown School of Social Work, Washington University in St. Louis, St. Louis MO
[5] Washington University School of Medicine in St. Louis, St. Louis MO

1 INTRODUCTION

The outbreak of the Coronavirus disease 2019 (COVID-19) in the U.S. exposed the deep vulnerabilities of our fragmented health care system and the consequences of extreme income inequality (Haynes 2020). African American and Hispanic populations, who had the greatest income and wealth inequality compared with White populations before COVID-19 also suffered disproportionately high incidence and mortality rates from COVID (Adhikari 2019, Gross 2020, Wadhera 2020). Inequities in COVID-19 incidence and case mortality rates are well documented: while Black individuals make up just 12.5% of the U.S. population, they have accounted for 23% of COVID-19 deaths nationwide (A.P.M. Research 2020; C.D.C. 2020). Similarly, case rates and mortality rates have been higher for Hispanic and Latinx individuals across the country, particularly as the pandemic has moved into the American South (Hixenbaugh 2020, Romero 2020).

One area about which less is known, however, is the degree to which the realities of COVID have impacted people's concerns and fears, behavior in response to COVID, and self-reported health and mental well-being. There is reason to be concerned that COVID's collateral effects on these outcomes could disproportionately impact racial and ethnic minorities. The disparity in the impact of COVID-19 across racial/ethnic groups occurred for several reasons, principally the longstanding untoward effects of institutional and structural racism. One notable manifestation of systemic racism is the overrepresentation of Black and Hispanic individuals in jobs deemed "essential" (e.g., in health, transportation, and service sectors), where working from home or maintaining social distancing is impossible (Moore 2020).

Black and Hispanic people in the U.S. also have a higher probability of being low income and have worse access to good health care (Smedley 2003). Long before the COVID-19 outbreak, these problems were exacerbated by systemic inequities in housing, health, employment, and opportunity (Webb 2020, Williams 2005). Racial and ethnic minority groups are also more likely to have comorbid conditions such as asthma, heart disease, and diabetes, all of which are risk factors for COVID-19 (Smedley 2003, Marshall 2005, Kissela 2004, Laster 2018, Barnes 2007, Wrigley-Field, 2020).

Given such disparities, there is a significant risk that minority and low-income populations would display greater fear of COVID – potentially reflected in their social distancing and other behaviors, and the greatest losses on measures of health and mental well-being (Boulware 2003). In this paper, we examine the intersection of social and economic factors that influence people's COVID-19 health behaviors. Specifically, we investigate the ways in which the fear of COVID-19 influences health behaviors in non-Hispanic White, non-Hispanic Black, and Hispanic/Latinx individuals (hereafter White, Black, and Hispanic), as well as the relationship between how these individuals are coping with the pandemic and their mental well-being. Our findings, based on a survey we conducted to examine these issues in a diverse, national sample of U.S. adults, reveal some surprises, including better reported mental health and well-being among racial/ethnic minorities, and complex patterns in the relationship between race/ethnicity and behavioral responses to the pandemic.

2 METHODS

2.1 Data and Sample

Data for this study come from the Socio-Economic Impacts of Covid-19 Survey, which was fielded by Washington University in St. Louis researchers from April 27, 2020, to May 12, 2020, using Qualtrics online panels. The panel used in this study was developed using quota sampling techniques to ensure that the sample approximated United States demographic characteristics in terms of age, gender, race/ethnicity, and income.[1] Although the Washington University in St. Louis institutional review board established that this study was not human subjects research, researchers still obtained informed consent from participants prior to administering the survey.

The survey response rate was 10.8%, with 16,200 adults entering the survey. Of these respondents, 8,564 were excluded because they failed to meet quota requirements to ensure national representativeness on the established sampling criteria, 1,541 were excluded because they failed quality checks embedded in the survey, and 51 were excluded due to not meeting the minimum age criteria of 18 years. After these exclusions, 6,044 respondents remained in the sample. Additional checks on the characteristics of this sample revealed that it also approximated the U.S. population in terms of education and state of residence, in addition to the quotas specified above. Finally, we excluded respondents who did not provide a response to the items used in this analysis or who did not identify as White, Black, or Hispanic—the racial/ethnic populations of interest in this study—resulting in a final analytical sample of 4,383.[2]

2.2 Measures

We used four questions to measure COVID-19-related fears and perceived risks among survey respondents. The first question was: "how afraid are you of the COVID-19 pandemic?", where respondents could indicate their level of fear on a scale of 0 (not afraid) to 100 (very afraid). We then asked respondents to report their expectations of the probability that "you will be infected with COVID-19 in the next month"; that "you will need to go to the hospital to treat COVID-19 if you are infected"; and that "you will die from COVID-19 if you are infected" Respondents could indicate their perceived probability of these experiences on a scale of 0% (no chance) to 100% (absolutely certain).

To explore social distancing behaviors during the pandemic we asked respondents to report the degree to which six statements about social distancing practices described their own behaviors. These statements concerned staying home, increased hand washing frequency, wearing a mask, staying six feet apart from others, avoiding social gatherings, and notifying the people around them if they

[1] Research has demonstrated that online, non-probability samples using Qualtrics panels generate samples that closely approximate those of the General Social Survey, which is considered the gold standard in survey administration (Zack, Kennedy, & Long, 2019).

[2] Given the close approximation of our sample to the U.S. population, we do not employ demographic weights in this study. As a robustness check, we re-estimated the results presented in this paper using weights generated from the 2019 American Community Survey from the U.S. Census Bureau and found that the estimates were highly similar to the unweighted results presented in this paper. Results available upon request.

exhibited COVID-19 symptoms. Each response ranged from 0 ("does not describe me") to 100 ("describes me very well").

To measure life-satisfaction, optimism, and mental health, we utilized two sets of questions. The first was a standard life satisfaction question (the Cantril ladder), which asks: "Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you, and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand *at this time*?" (Cantril, 1965). A following question asks the respondent where they think they will be on the same ladder in *five years*. The latter question is designed to capture optimism/hope for the future (for detail, see Graham et al., 2018). The second measure of well-being asks respondents two questions assessing their mental health on a five-point response scale ranging from poor to excellent. The first question asks respondents to assess their mental health *three months ago*. The second question asks them to rank their mental health *currently* (i.e. as of the survey period).

We examined each of the above outcomes by respondents' race/ethnicity and income level. For the purposes of this study, we only present estimates for White, Black, and Hispanic respondents, as it is between these groups that the largest reported well-being disparities have been observed in other research (Graham, 2017; Graham and Pinto, 2019). We constructed the income groups in this study as a function of self-reported annual household income in 2019, household size, and the U.S. Department of Housing and Urban Development' measure of area median income (AMI) at the county level. Based on HUD's methodology for determining the eligibility of applicants for assisted housing programs (2020), we defined lower-income households as those with household incomes ≤ 120 percent AMI after adjusting for family size, as is common in the housing finance field (Grinstein-Weiss et al., 2011a, b). We defined higher-income as those with household incomes > 120 percent AMI, after adjusting for family size.

In addition to the two key explanatory variables of race/ethnicity and income, we controlled for a set of covariates including demographic characteristics, health insurance status, the self-reported experience of COVID-19 symptoms, the prevalence of COVID-19 cases in the county in which the respondent lived as of the date of survey response, the population density of the respondent's county of residence, and the respondent's Census division. Demographic characteristics included gender, age, marital status, the number of children in the household, and educational attainment.

2.3 Statistical Analysis

We estimated the relationships between race/ethnicity, income, and the array of outcome measures specified above using Ordinary Least Squares (OLS.) regression models, with heteroskedasticity-robust standard errors. In addition to controlling for all the variables outlined above, we also included interaction terms for race/ethnicity and income, which allowed us to estimate the joint relationships between these variables and the outcomes of interest. The data analysis in this study was conducted using Stata (version 15; StataCorp), and we used a threshold of $p < .05$ to assess statistical significance.

3 RESULTS

3.1 Sample Description

Table 1 reports the demographic characteristics of our analytic sample. Overall, the sample well represents the U.S. population with respect to gender, age and marital status, and race/ethnic composition[3]. However, compared to the U.S. population, our sample is more highly educated; 57.1% of our respondents held Bachelor's degree or higher, which is much higher than the U.S. population (31.5%). The proportion of respondents without dependents under 18-year-old is 74%, which is slightly higher than the U.S. population (69%). About three in five of our respondents were considered to be low-and moderate-income, whose annual income was less than 120% AMI. in 2019 at the country level.

[Table 1 about here]

3.2 COVID-19 Related Fears/Concerns

Overall, White respondents exhibited lower levels of COVID-19 fear than Black and Hispanic respondents and reported lower expected probabilities of COVID-19 infection, hospitalization, and death than Hispanic respondents. ***Figure 1*** plots predicted COVID-19 fear scores and the self-assessed probability of COVID-19-related infection, hospitalization, and death by respondents' race/ethnicity and income. With respect to the variations over income groups, higher levels of income were significantly associated with lower levels of COVID-19-related fears and the expected probabilities of death in the event of COVID-19 infection. However, higher-income Black respondents reported significantly higher levels of COVID-19 fear than those with lower incomes, and higher-income Hispanic respondents reported a lower expected probability of COVID-19 infection than low income Hispanics.

[Figure 1 about here]

3.3 Social Distancing Behaviors

We present the results of three of the social distancing behaviors: wearing a mask, avoiding social gatherings, and informing one's neighbors/colleagues if one exhibited any COVID-19 symptoms. White respondents were less likely to wear masks than Hispanic respondents regardless of income level, though White and Black households were similarly likely to wear masks. Self-reported mask-wearing scores stay flat as income increases for White and Hispanic respondents. While the score for Black respondents increases as their income level rises, this difference is not statistically significant [***Figure 2***].

Overall, Black respondents reported a significantly lower propensity to avoid social gatherings than White and Hispanic respondents. This difference appears to be driven by income, however, since higher-

[3] According to the American Community Survey 5-year estimates in 2018 (U.S. Census Bureau, 2018), 50.8% of the population was female and 48.1% of the population was currently married. The survey also estimates that the proportion of households aged 18-24, 25-34, 35-44, 45-54, and 55+ was 12.4%, 17.9%, 16.3%, 17.1% and 36.3%, respectively. Concerning race/ethnicity, 67.0%, 13.5% and 19.5% of ACS respondents were non-Hispanic White, non-Hispanic Black, and Hispanic, respectively.

income Black households were as likely as those in the other two groups to report avoiding social gatherings. The lower reported rates of avoiding social gatherings for the low- and moderate-income (LMI) Black population might be associated with their employment status; 76% of Black LMI respondents reported that they were required to be physically present at their primary place of employment, which was significantly higher than the proportion of White (70%) and Hispanic (68%) LMI respondents.

Higher-income respondents were more likely than lower-income respondents to report that they would inform others of any COVID-19 symptoms they exhibited, and Black households were less likely to report that they would inform others of their symptoms than those in other groups. We do not observe statistically significant interactions between income and identification as White, Black, or Hispanic.

3.4 Mental Health, Life Satisfaction and Optimism

Here we explore our respondents' life satisfaction, mental health, and optimism during the pandemic. ***Figure 3*** plots respondents' current life satisfaction and their expected life satisfaction 5 years in the future—a proxy of optimism—by race/ethnicity and income. ***Figure 4*** plots respondents' mental health both three months prior to the survey period (before the pandemic) and currently by race/ethnicity and income.

[Figure 3 and 4 about here]

Higher incomes were associated with higher levels of life satisfaction, optimism, and mental health during the pandemic. In addition, we observe large increases in these metrics among Black respondents, and smaller but still significant increases in life satisfaction and optimism among Hispanic respondents. The differences in reported life satisfaction and optimism for the future between Black and White respondents were roughly as large as the differences between higher and lower income groups, and the gaps in optimism between the two groups were largest at low-income levels. Black respondents also reported better mental health than Whites. We did not observe any significant interactions between income level and race/ethnicity.

4 DISCUSSION

The COVID-19 pandemic has exposed deep vulnerabilities across our fragmented health care system and across the income distribution. At the same time, it presents an urgent opportunity to better understand – and ultimately address – the factors driving health behaviors and persistent health inequities.

While tempting to blame differences in COVID-19 infection rates on individuals' health behaviors, the answer to resolving COVID-19 disparities is more nuanced. Although personal compliance with guidelines such as handwashing, wearing a mask, and social distancing, is critically important to reducing the spread of COVID-19, the pandemic has highlighted structural factors — who gets designated an essential worker, the types of work they do, and whether workers get sick days — and their profound influence on the health of individuals and the health of subgroups within the U.S. population. As such, the intersection of structural racism, social and economic factors influence people's COVID-19 health

behaviors. We explored this intersection by looking specifically at the ways in which the fear of COVID-19 influenced health behaviors as well as the impact of coping with the pandemic on mental well-being.

4.1 Role of Fear in Shaping Health Behaviors

Since the outbreak of the COVID-19 pandemic, the public has been bombarded by nearly continuous media updates of the threat of coronavirus, increasing infection rates, and new milestones in death counts. Living with this constant threat can increase anxiety and have immediate negative effects on mental health. Although the fear of infection could be expected to manifest itself in cautious, careful behavior aimed to prevent acquiring the illness, such fear can be overridden by other factors such as the messaging people receive about the disease, perception of personal infection risk, and economic factors such as income and whether a worker has paid sick days.

With other widespread infections or epidemics such as the 2013–2016 West Africa Ebola virus outbreak, the public's fear of infection led to behaviors that followed expected patterns of being conformist and less accepting of individualistic behavior (Shultz et al., 2016). In addition, the fear of infection often leads to xenophobia and stigmatization of those who have or who have survived the disease. COVID-19 has certainly elicited such behaviors in the U.S. population. However, in contrast to fear-driven behavior observed in other epidemics, coping with COVID-19 has brought about unexpected behavioral patterns ranging from harsh social attitudes, more conservative attitudes toward immigration, and even swaying political opinion and affiliations.

4.2 Role of Fear in COVID-19-Related Health Behaviors

Given standard patterns of health behaviors and the social determinants of health in which higher levels of income are associated with better access to care and better health outcomes, we were not surprised to find similar results in our sample. Across the intersection of three racial groups and income levels, White respondents with high levels of income reported the lowest levels of fear of COVID-19. However, we did not expect to find that Black respondents with high income levels would be more likely than low- and middle-income Black respondents to report experiencing high levels of fear related to COVID-19.

What factors cause affluent White respondents to be insulated from COVID-19 fear whereas their affluent Black counterparts appear to experience high levels of COVID-19 fear? While COVID 19 does not protect anyone based on color, the responses of the affluent White respondents may reflect a greater level of confidence in their ability to access medical care when needed as well as a higher level of trust in the health care system (Boulware et al.,2003). A possible explanation for this unexpected finding is the responses of the more affluent Black respondents reflect the disproportionate rates of COVID-19 deaths among the Black population overall. Further, for affluent Black respondents, the COVID-19 disparity likely underscored historic health disparities and the ways in which Black patients are often marginalized within the health care system, no matter their wealth levels. Wealthy Blacks may be more aware of these glass ceiling effects than poorer ones. Assari (2020), for example, finds that while increasing levels of education have a protective effect on mental health on average, that effect is lower for Blacks than for other races. This may be a factor underlying the higher levels of fear and personal risk of COVID among affluent Black individuals.

Additionally, COVID-19 fear among low-income Blacks may be masked by an avoidance strategy that accepts realities that would normally induce toxic, traumatic stress. Acceptance of one's fate, and in this case, denial of fear, has been documented to offer a long-term survival advantage (Au 2019). However, in the context of COVID-19 related illness, acceptance does not connote an acceptance of the racist construct that consigned Blacks and other people of color to suffer higher morbidity and mortality from COVID-19. While adaptive in the short term, acceptance and avoidance is inherently counter-productive. Wilson and Murrell (Wilson 2004) describe the ways that both avoidance of our emotions and avoidance of meaningful contexts contribute to the maintenance of stress and anxiety.

Fear of infection is likely hardwired in the human race to drive behaviors that benefit the species. If so, the fear driver should result in behaviors that are cautious and aim to limit personal and group risk of infection. However, we did not find fear of COVID-19 was consistently associated with better compliance with health guidelines such as wearing a mask in public or limiting social contacts. Indeed, our findings seem puzzling at first because Black respondents, some of whom reported the highest levels of COVID-19 fear, reported a low propensity to avoid social gatherings.

Yet a closer look at the intersection of race and income reveals that higher-income Black respondents were equally likely as their White counterparts to avoid social gatherings, whereas lower income Blacks were significantly less likely to. These differences are likely based in the economics of racial inequity, with Black individuals overrepresented in low-wage jobs that require them to be physically present in their workplace (Mongey et al, 2020). Although deemed essential workers, these workers are often paid minimum wage and do not receive benefits such as paid sick leave. Frequently, the combination of low pay and no benefits means they do not have the choice to practice social distancing, and few can afford to forgo a paycheck and stay at home. The paradigm of preferring social gatherings among lower income Blacks also represents a African cultural phenomenon, which emphasizes humanity as collective and communal rather than individualistic (Houston 1990, Schiele 1990).

Further, whereas affluent respondents indicated a greater likelihood to self-report if they have symptoms consistent with COVID-19, lower income Black respondents were less likely to self-report their COVID-19 symptoms. Again, this difference in health behavior is likely explained by the opportunities and choice afforded to affluent respondents. Those with higher incomes are more likely to work in jobs allow some or all of their work to be done remotely (Brynjolfsson et al., 2020). In addition, a larger paycheck can enable these workers to build emergency savings to see them through an economic shock such a pandemic. Thus, those who are more affluent are more likely to self-report COVID-19 symptoms because they have a financial cushion and/or can work from home. In contrast, those at the other end of the economic ladder are often living paycheck-to-paycheck and often report feeling they do not have a choice in continuing to work when feeling ill because their household is dependent on their paycheck. Another disincentive is that low-income Blacks may also be less trusting than other cohorts of accessing good quality health care if they need it (Halbert et al, 2006).

4.3 Effects of Coping with COVID-19 on Mental Well-Being

Given the disproportionate effects of COVID-19 on the Black population, it would be logical to expect Blacks to exhibit the greatest losses in mental health and other dimensions of well-being. Yet, that is not what we found; Black respondents maintained higher levels of resilience – more optimism and better

mental health – than White respondents. This result is in line with other studies (Graham and Pinto, 2019).

We would normally anticipate a negative association between COVID-related concerns and well-being during the pandemic – that is, the higher COVID-related concerns, the lower life satisfaction/optimism, and the lower mental health. Yet they are remarkably consistent with patterns that we have previously found in the well-being of different race and income cohorts in the face of deaths of despair. Using over 1 million responses over five years in Gallup data for the U.S., we find large gaps in optimism and reported stress across poor Black and White individuals, with the former almost three times as likely to be a point higher on the 11-point optimism scale and 50 percent less likely to report experiencing stress the previous day than poor Whites (poor Hispanics again fall in between the two groups on the same markers). This finding has stood the test of time, meanwhile, and did not change during and after Trump's election, for example (Graham and Pinto, 2019).

Additionally, consistent with the Black emphasis on community note above, Blacks are also more likely to report that religion is important in their lives compared to other groups. While we included individual level religiosity responses as controls in our baseline work on racial differences in optimism, there are likely features of communality and religiosity among Blacks – and particularly low-income Blacks - that we are unable to observe (or control for) (Graham and Pinto, 2019).

While Black respondents are more optimistic than Whites in general in both sets of data, the largest differences are between poor Blacks and poor Whites. Matching these metrics with C.D.C. data on deaths of despair (suicide, drug overdose, and alcohol poisoning), we find they closely track the patterns in these deaths at the level of individuals, races, and places. Black and Hispanics are, for the most part, much less likely to be represented in these deaths than are Whites.

The reasons for this resilience are complex. They include a historical trajectory of overcoming adversity, strong community ties, and continued belief in the promise of education at a time that it has faded among low-income Whites. As a result, Blacks and Hispanics are gradually narrowing gaps in education and in life expectancy with whites. Poor Whites, meanwhile, have fallen behind in absolute terms compared to wealthy Whites and in relative terms compared to minorities; losses that are reflected in their high levels of despair. Historically, meanwhile, optimism among Blacks began to increase in the 1970s, when civil rights improved, and began to fall among less than college-educated White men around the same time (coinciding with the first declines in manufacturing (O'Connor and Graham, 2019).

Deaths of despair are, at least at some level, preventable because they are desperation-related behaviors. In contrast, COVID-19 is an exogenous shock – largely unrelated to individual behavior – that has disproportionately affected the Black population. Despite such disparities, in both of our studies the Black respondents have displayed high levels of hope and resilience. It appears that the same traits that drive minority resilience might also be protective of well-being and mental health in the context of the pandemic.

These deep differences in resilience have implications for the long-term mental health effects of different population groups in the face of the unprecedented challenge that COVID presents to the health and well-being of our society. Better understanding these differences – and the lessons that stem

from those population cohorts with the most resilience – can, in the end, lead to lessons that may help bolster the mental health and coping skills and behavioral responses of vulnerable groups during uncertain times.

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Table 1. Sample Characteristics

	Percent
Gender:	
Non-Female	49.8%
Female	50.2%
Age:	
18-24	12.7%
25-34	18.5%
35-44	16.3%
45-54	17.9%
55+	34.7%
Marital Status:	
Single	49.0%
Married	51.0%
Number of Dependents:	
No child	73.5%
1 Child	12.9%
2 Children	9.9%
3 Children or More	3.8%
Education	
High School or Lower	12.3%
Some College/Associate's Degree	30.6%
Bachelors or Higher	57.1%
Race/Ethnicity	
White, non-Hispanic	67.7%
Black, non-Hispanic	13.3%
Hispanic	19.0%
Income	
Low and Moderate Income (< 120% AMI)	60.3%
Middle and High Income (≥120% AMI)	39.7%
Total	4,383

Notes: Reference categories are underlined
Low-income = less than 120% AMI; High-income = 120% AMI or above
Single includes never married, separated, divorced, and widowed

Figure 1. COVID-related concerns (0: Not afraid at all/No chance – 100: Very afraid/Absolutely certain)

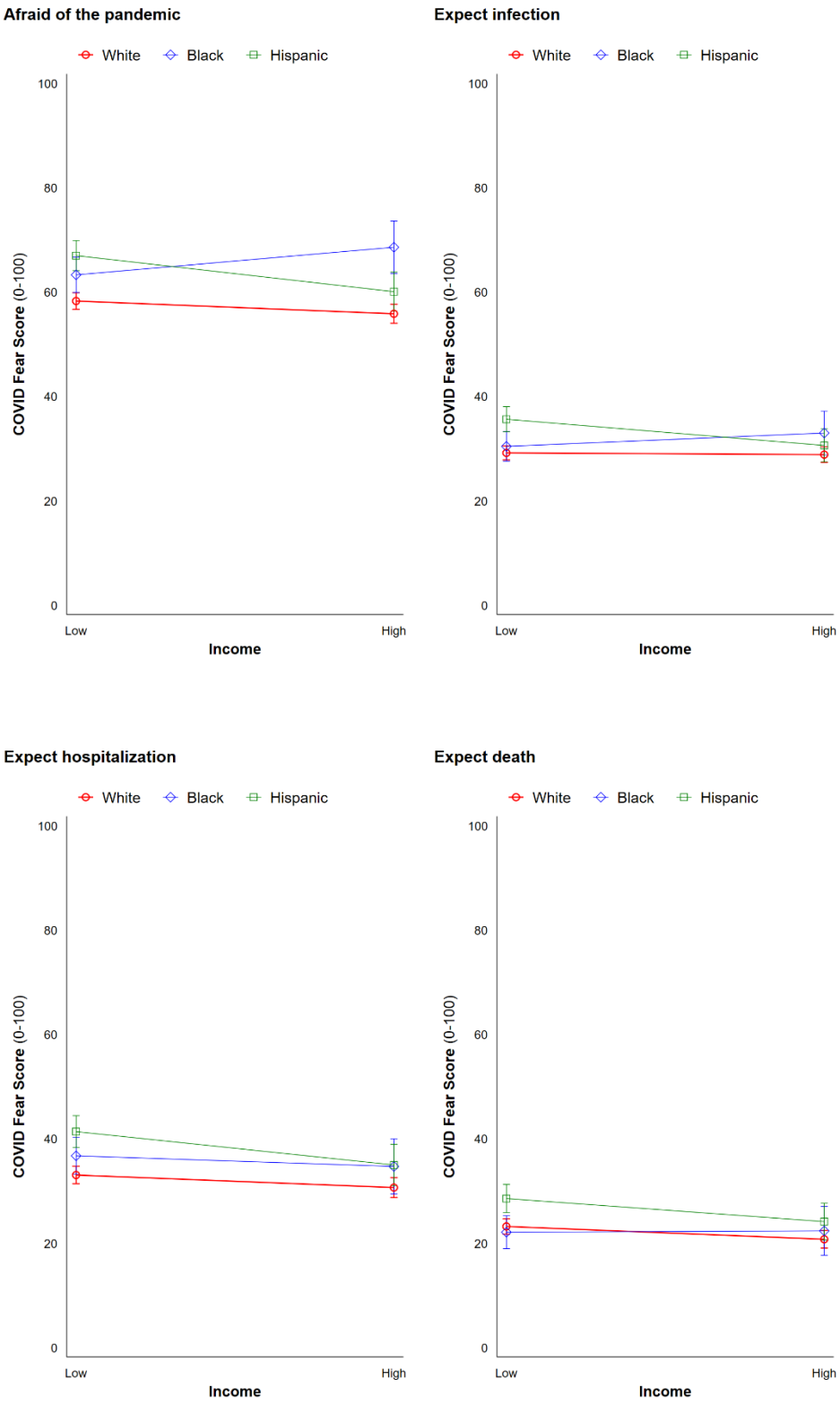

Figure 2. Social Distancing Behaviors (0: Does not describe me – 100: Describes me very well).

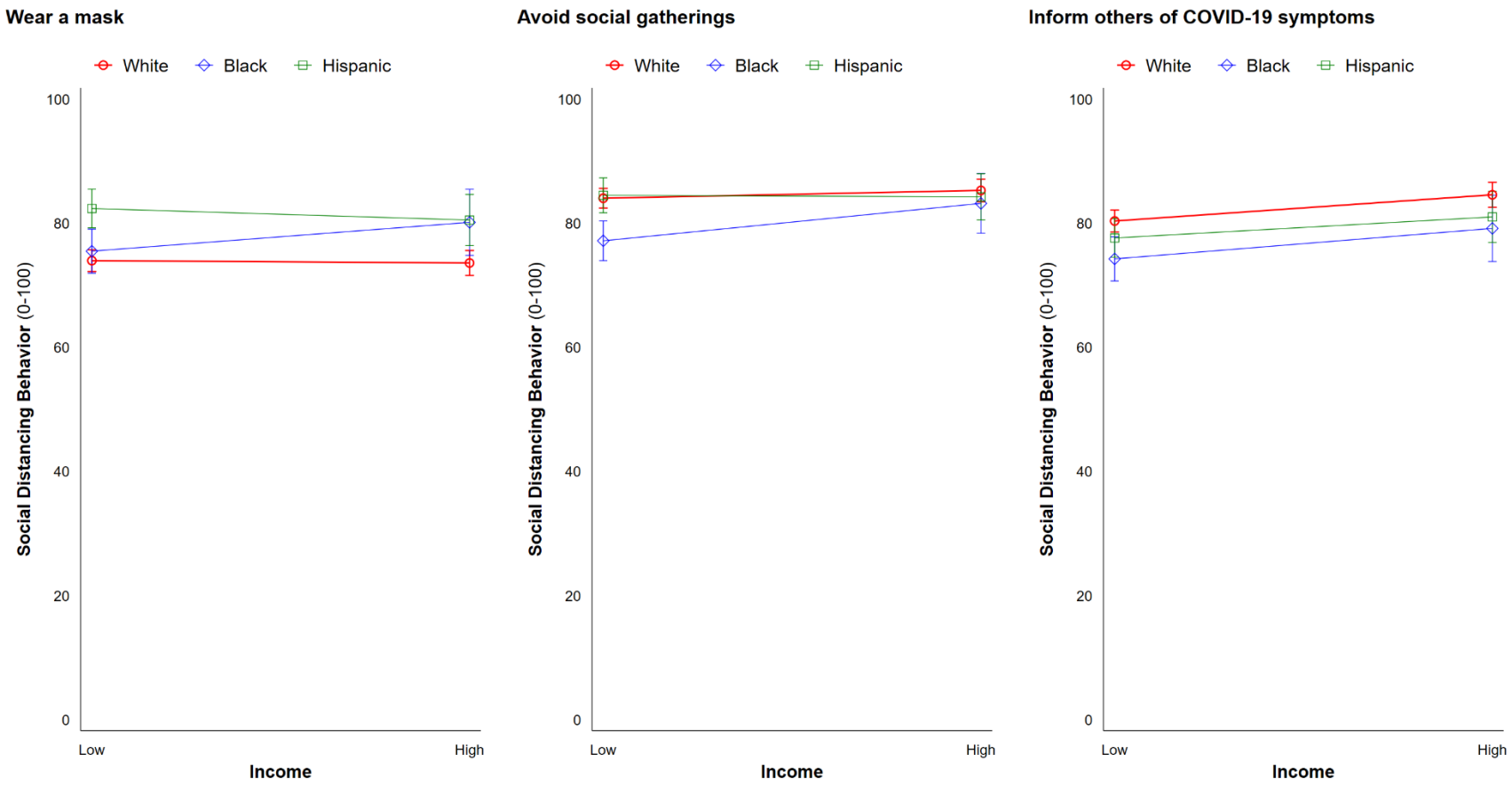

Figure 3. Life Satisfaction and Optimism (Cantril ladder measures; now and 5 years in the future)

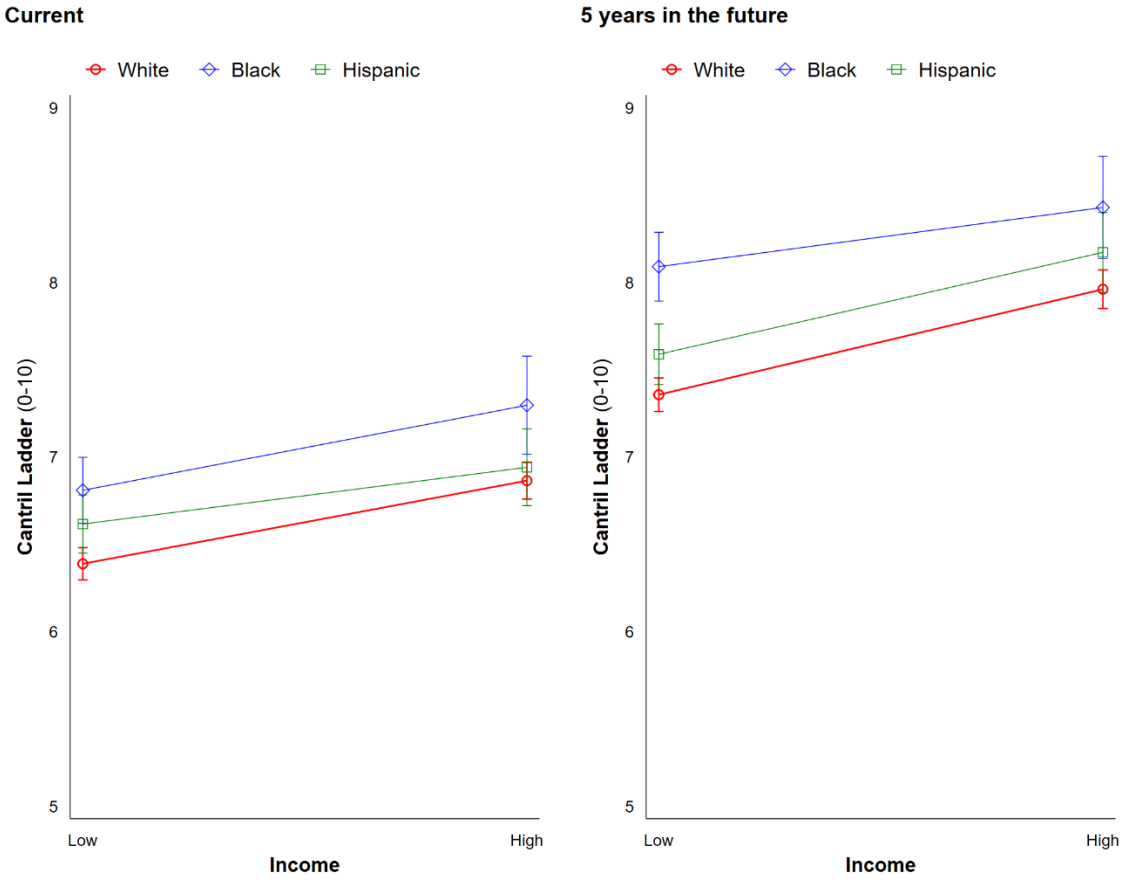

Figure 4. Mental Health (1: Poor – 5: Excellent; pre- and during the pandemic)