

Understanding COVID-19
Among People of Dominican
Descent in the U.S.:

A Comparison of New York, New Jersey, Florida, Massachusetts, Pennsylvania, Rhode Island and Connecticut

Ramona Hernandez, Ph.D. Pedro Ortega, Ph.D Nancy Sohler, Ph.D. Sarah Marrara, M.S.



Understanding COVID-19
Among People of Dominican
Descent in the U.S.:

A Comparison of New York, New Jersey, Florida, Massachusetts, Pennsylvania, Rhode Island and Connecticut

Ramona Hernandez, Ph.D. Pedro Ortega, Ph.D Nancy Sohler, Ph.D. Sarah Marrara, M.S.

Dominican Studies Research Monograph Series

About the Dominican Studies Research Monograph Series

The Dominican Research Monograph Series, a publication of the CUNY Dominican Studies Institute, documents scholarly research on the Dominican experience in the United States, the Dominican Republic, and other parts of the world. For the most part, the texts published in the series are the result of research projects sponsored by the CUNY Dominican Studies Institute.

About CUNY Dominican Studies Institute

Founded in 1992 and housed at The City College of New York, the Dominican Studies Institute of the City University of New York (CUNY DSI) is the nation's first, university-based research institute devoted to the study of people of Dominican descent in the United States and other parts of the world. CUNY DSI's mission is to produce and disseminate research and scholarship about Dominicans, and about the Dominican Republic itself. The Institute houses the Dominican Archives and the Dominican Library, the first and only institutions in the United States collecting primary and secondary source material about Dominicans. CUNY DSI is the locus for a community of scholars, including doctoral fellows, in the field of Dominican Studies, and sponsors multidisciplinary research projects. The Institute organizes lectures, conferences, and exhibitions that are open to the public.

Graphic Designer & Layout Artist Javier Pichardo

Subscriptions/Orders

The Dominican Studies Research Monograph Series is available by subscription, individual copies, and bulk orders. Please visit our website to place your order or subscription request.

CUNY Dominican Studies Institute
The City College of New York
160 Convent Avenue, NA 4/107
New York, NY 10031
T 212.650.7496
F 212.650.7489
E dsi@ccny.cuny.edu
www.ccny.cuny.edu/dsi

Copyright © 2022 CUNY Dominican Studies Institute

Executive Summary

The present study "Understanding COVID-19 Among People of Dominican Descent in the U.S.: A Comparison of New York, New Jersey, Florida, Massachusetts, Pennsylvania, Rhode Island and Connecticut" is the first research study to examine the experience of people of Dominican origins residing in the United States (U.S.) amidst the pandemic caused by the SARS-CoV-2 virus. The current study is based on a probabilistic and representative sample of Dominicans across the seven states in which the majority—85%—of Dominicans living in the U.S. reside.

The Dominican Studies Institute (CUNY-DSI) at City College and the School of Medicine, both of the City University of New York, conducted this study. These institutions brought together a team of researchers who worked on the design of the study and the parameters of the data analysis. The purpose of the study was twofold: First, to create knowledge on COVID-19 based on empirical evidence as it relates to the Dominican people and, second, to encourage the scientific community, particularly in the area of health, to study the effects of the pandemic on the different ethnic groups that make up the U.S.

Methodology

This study is the first to disaggregate people of Dominican origin in the U.S., and analyze how they have been affected by the COVID-19 pandemic. The survey was conducted between October 5 and November 11 of 2021 and is based on a probabilistic sample of 794 people of Dominican origin, residing in seven states: New York, New Jersey, Florida, Massachusetts, Pennsylvania, Rhode Island, and Connecticut. The largest portion of the sample (N=554; weighted N=634.5) was drawn from six northeastern states. The remaining sample (N=240; weighted N=159.5) was drawn from Florida. Using this strategy, we administered surveys online and via telephone. Criteria for inclusion in the study were being at least 18 years of age and having been born in the Dominican Republic or identifying as being of Dominican ancestry. The survey was administered in either English or Spanish depending on the respondent's preference. Participants were given a \$25 gift card at the conclusion of the survey as compensation for their time and participation.

i

Main Findings

Percentage of incidence of COVID-19

- (1) Twenty-four percent of respondents reported having contracted COVID-19 themselves.
- (2) Among those who were infected with COVID-19:
 - 90% reported that they isolated in their home away from other household members;
 - 11% said they had been hospitalized.
- (3) Twenty percent of Dominicans interviewed said that someone else in their household contracted COVID-19; 29% reported that relatives in another household contracted the virus, and 28% said they knew someone else who contracted it.

Vaccination

- 4) An astonishingly high 77% of those interviewed reported that they had been vaccinated at the time of the survey, between October 5 and November 11, 2020.
- 5) The proportion of people of Dominican origin who are vaccinated is likely to rise to 89% if we add the percentage of those who, at the time of the survey, reported that they were planning to be vaccinated in the near future.
- 6) Only 4.2% of respondents reported that they did not plan to vaccinate because they did not believe in vaccines.
- 7) Of vaccinated Dominicans, the majority received the Pfizer vaccine (47%) or Moderna (32.0%), while a small percentage received the Johnson and Johnson vaccine (16%).
- 8) Among vaccinated respondents, an overwhelming majority (93%) reported having had received the vaccine in their state of residence, 5% in another U.S. state, and 2% in the Dominican Republic.

Reasons that motivated Dominicans to get vaccinated

9) Seventy-five percent of Dominicans got the vaccine primarily to protect themselves from COVID-19, while 20% said they were vaccinated primarily because it is a social responsibility. In comparison, a small proportion reported having been vaccinated due to social pressure (2.7%).

Time spent to get to the vaccination place

10) A majority of Dominicans (71%) commuted for less than 30 minutes from their residence or workplace to obtain a vaccination. A substantial proportion said they commuted between 30 minutes to an hour (24%), and a smaller proportion said their commute was longer than an hour (5%).

Use of masks against COVID 19

- 11) Seventy-nine percent of Dominicans reported that they "always or almost always" wore a mask in indoor public settings at the height of the first wave of the COVID-19 pandemic, while 13% reported that they "sometimes" wore a mask, 4% "rarely" wore a mask and only 3% reported "never" wearing a mask.
- 12) The percentage of mask use was high especially in states where COVID-19 was more prevalent, such as New Jersey (86%) and New York (82%). In Florida, three-quarters of Dominicans were masks.
- 13) With regard to the current use of face masks, there is variability by age and place of birth:
 - 90% of those 50 years of age and older reported "always or almost always" wearing a mask compared to young adults between the ages of 18 and 29 (62%);
 - 81% of Spanish dominant respondents reported "always or almost always" wearing a face mask compared to English dominant respondents (75%);
 - 84% of respondents born in the Dominican Republic reported "always or almost always" wearing a face mask compared to 62% of their U.S.-born counterparts.

Stress during the pandemic

- 14) 52% of Dominicans interviewed said they felt nervous, anxious or on edge the week before the interview.
- 15) Between 14.38% and 42.05% of respondents in each state in our study reported being unable to stop worrying almost every day the week before the interview. Rhode Island had the largest proportion of respondents who said that **they were** worrying **almost every day** the week prior to the survey.

Sources of information on COVID-19

- 16) To obtain information on COVID-19, people interviewed were most likely to consult cable, local or network news outlets (38%) or social media networks (30%) such as Facebook, Instagram, LinkedIn, Twitter, WhatsApp, YouTube, and Snapchat.
- 17) **Older** Dominicans were **more** likely to rely on cable, local or network news outlets (60% of respondents 50 years of age and older) compared with younger Dominicans (24% for people between the ages of 18 to 29 years).
- 18) **Conversely, younger** Dominicans were more likely to rely on social media for COVID-19-related news (39% among young adults between the ages of 18 to 29 years) compared with older Dominicans (13% of people 50 years of age and older).

Table of Contents

Executive Summary
Methodology
Main Findings
Introduction
Latino/a/x Research Vacuum
The Study
Attitude Towards Vaccines and Propensity to Vaccination
Reasons for Vaccination
Accessing Vaccination Places
Mitigation Strategies for Combating the Spread of COVID-19
Stress and the Pandemic
Main Sources of Information on COVID-19
Conclusion & Policy Recommendation
Acknowledgments
Works Cited

Understanding COVID-19 Among People of Dominican Descent¹ in the U.S.: A Comparison of New York, New Jersey, Florida, Massachusetts, Pennsylvania, Rhode Island and Connecticut²

Authors:

Ramona Hernandez, Ph.D., Professor of Sociology & Director CUNY DSI, CCNY Pedro Ortega, Ph.D., Post-Doctoral Fellow, CUNY DSI, CCNY Nancy Sohler, Ph.D., Associate Medical Professor, CUNY School of Medicine, CCNY Sarah Marrara, M.S., Senior Researcher, CUNY DSI, CCNY

Introduction

Despite the relative newness of the SARS-CoV-2 virus, the scientific community has already produced a considerable amount of research related to the COVID-19 pandemic. To date, this research has focused on health outcomes associated with infection, its genetics and functioning, finding ways to neutralize the virus and/or take it out of circulation, its impact on healthcare systems, and its economic impact, both gains and losses. Probably the most remarkable COVID-19-related research is the rapid development of several vaccines for adults and children, in a quest to prevent further spread and mutation of the lethal virus in any of its variations (Creech, 2021; Tregoning et al., 2021; Kahn et al., 2020). Equally notable is the impact of research guiding recommendations to prevent the spread of the virus, including its newest variant, Omicron, circulating at the time of this writing (Abassi, 2021) that has made new behaviors, avoiding crowds, covering part of one's face, and keeping six-feet apart in public spaces, socially normative nowadays in the United States and other parts of the world.

On April 11, 2020, near the start of the pandemic, Aleem Maqbool (2020), wrote in *BBC News*, Washington, about the impact of COVID-19 on the African American population: "... the racial disparities shown in the number of people dying of coronavirus-related causes have sadly been unsurprising." Since then, researchers in the fields of medicine and social science have contributed rigorous studies on the subject, highlighting racial and ethnic disparities and injustices related to the pandemic.

Ford, Reber, and Reeves (2020) examined the racial gap in death rates associated with COVID-19 across the U.S. These colleagues found that:

Death rates among Black people between 55-64 years are higher than for white people aged 65-74, and death rates are higher for Blacks aged 65-74 than for whites aged 75-84, and so on. In every age category, Black people are dying from COVID at roughly the same rate as white people more than a decade older. Age-specific death rates for Hispanic/Latino people fall in between.

The same pattern was found in a study of mortality rates in England (Aldridge, 2020), which reported that Black African, Black Caribbean, Pakistani, Bangladeshi and Indian communities are at increased risk for death compared with their White Irish and White British counterparts.

¹ In this study, the term "people of Dominican descent" refers to Dominicans born in the Dominican Republic and people born in the U.S. to Dominican parents. Similarly, for readability purposes, the terms Dominican and people of Dominican descent or ancestry will be used interchangeably throughout the study.

² The order of names of states is based on the demographic size of the population of Dominican descent in the U.S. States are listed on a descendent order, from larger to smaller.

In New York City, Holtgrave et, al. (2020) found that the:

Estimated per-population COVID-19 fatality rates were 0.03%, 0.18%, and 0.12% for white non-Hispanic, Black non-Hispanic, and Hispanic adults, respectively. The 3.48-fold disparity for Hispanic, relative to white, communities was explained by differences in infection experience, whereas the 5.38-fold disparity for non-Hispanic Black, relative to white, communities was primarily driven by differences in both infection experience and in the need for hospitalization, given infection.

Similar racial/ethnic patterns are reported in studies on COVID-19 incidence and hospitalization among people segmented by racial and ethnic groups (e.g., Garg et al.,2020; Thebault, Ba Tran, Williams, 2020), perceptions of risk of contagion, and knowledge about the virus (e.g., Gupta, 2020; Alsan et al., 2020; Chinni, 2020; Feldman & Bassett, 2021; NYU Furman Center, 2020; Singh & Koran, 2020; See also Jones, et al. 2020).

In Fall 2020 the COVID-Collaborative, a compilation of leading experts in health, education and the economy, studied perceptions about the effectiveness of the vaccines against COVID-19 among Blacks and Latinos (COVID Collaborative, 2020; Wan, 2020). This research revealed drastic differences between the groups with regard to their perceptions about the benefit of a vaccine. Among Black respondents, only 14% trusted that the vaccine would be safe and only 18% thought it would be effective in protecting them against COVID-19. However, among Latino respondents, 34% trusted the safety and 40% trusted the effectiveness of the vaccine. While trust in or willingness to receive the vaccine has increased across both groups since Fall 2020, (Hamel et al., 2021) these initial findings are noteworthy.

Latino/a/x Research Vacuum

Despite the substantial data on race/ethnicity pattern, relatively little research attention has focused specifically on how COVID-19 has affected the Latino/a/x population. It is unclear if the current COVID-19 research findings for the Latino/a/x population as a whole applies to the different national/ethnic subgroups. It is therefore worth asking whether the virus has impacted the different Latino/a/x subgroups in the same way and in similar proportions, given the groups national and cultural diversity. In a similar vein, it is important to know the impact of COVID-19 on the immigrant population as compared with immigrants' U.S.-born children. Nativity status differs dramatically among the national/ethnic subgroups, with some group's populations consisting of up to 70% of U.S.-born.

Likewise, there is a generalized view that the Latino/a/x population has hesitated to undergo vaccination against COVID-19, as evinced in the systematic and multimillion-dollar campaign specifically targeting Spanish-speaking people (Leon 2021; Preidt 2021). Yet, it is not known whether all Latino/a/x subgroups had similar baseline attitudes about vaccination and it has not been explored whether they have reacted in a similar fashion to interventions to increase vaccination uptake. Ascertaining variation in Latino/a/x groups' responsiveness to the different interventions not only acknowledges the cultural and historical diversity of the Latino/a/x population, but it may be a more effective and cost-effective strategy as well.

The demographic weight of the Latino/a/x population and its forecasted growth in the coming years is an inescapable reality. In the same way, it is a reality that the Latino/a/x population is not homogeneous and this heterogeneity matters because it informs behavior in society. These realities must be addressed in COVID-19 research and public health campaigns.

For example, the most recent data indicate that the burden of COVID-19 on the Latino/a/x population is larger than previously estimated in terms of excess mortality (Sheils 2021). In New York City, for instance, one of the cities most affected by COVID-19, the cumulative case rate and cumulative hospitalization rate exceed Blacks,

Whites, and Asians. (Despres 2021) Though Dominicans make up the largest Latino/a/x population in New York City, there is not one single study pinpointing at whether the Latino/a/x that had died there were of Dominican descent. Yet, personal Facebook pages and word-of-mouth news systematically disseminated heartbreaking information about the many Dominicans who were being hospitalized or had passed because of COVID-19.

Our study has two purposes. First, to create knowledge to help fill research gaps by examining the impact of COVID-19 on the population of Dominican descendants residing in the U.S. Second, to motivate the scientific community conducting research on health issues to perceive the Latino/a/x population as one that is not homogeneous but one that is characterized by inherent differences produced by historical and cultural experiences and contexts. Such a perspective would not only be in consonance with the group's reality but would also be innovative, reflecting scientific advances.

A final note on the contributions of this study: Dominicans as a group sit firmly at the intersection of Black/Afro and Latino/a/x identity. Understanding how the COVID-19 virus has impacted them and, in turn, how they have dealt with it, may prove useful for understanding similar population segments. Likewise, with this study we provide new cultural perspective on disease management and mitigation efforts, while further dissecting/interrogating the role of race, ethnicity, nativity, and socioeconomic status on COVID-19's disproportionate impact in communities of color. COVID-19 will not be the last pandemic the world faces, lessons learned from this study may prove life-saving both now and in the future.

The Study:

Attitude Towards Vaccines and Propensity to Vaccination

We evaluated the attitude and propensity of Dominicans to be vaccinated at the time of the survey. The results of the survey reveal that the population of Dominican descent responded massively and positively to the COVID-19 vaccination process. Analysis show the following results: over two-thirds of respondents (77. 29%) reported having been vaccinated at the time of the interview and just under a third (11.76%) stated that they planned to get vaccinated as soon as they had an opportunity. A small proportion of respondents (6.74%), reported being unsure whether they would get the vaccine, and an even a smaller proportion of respondents (4.22%) underscored that they were not going to get vaccinated because they did not believe that getting vaccinated was the solution to the pandemic caused by the COVID-19 virus (see figure 1).

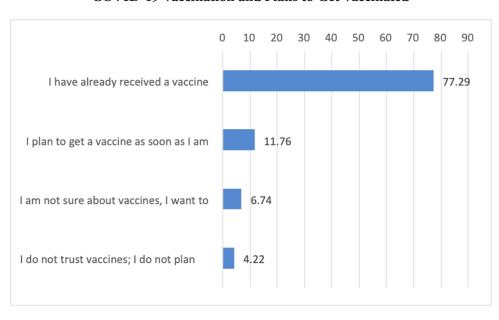


Figure 1
COVID-19 Vaccination and Plans to Get Vaccinated

Source: CUNY DSI & CUNY School of Medicine, COVID-19 Survey 2021.

These results highlight the positive attitude of Dominicans towards the immunization process, getting vaccinated at high rates. Accordingly, respondents' willingness to vaccinate also shows the group's preference for using protocols approved to confront the COVID-19 pandemic. As indicated in figure 1, most Dominicans respected the recommendations issued by the Center for Disease Control and Prevention (CDC). Consistent with the above finding is the low proportion of those who responded that they did not "plan to get vaccinated because they did not believe in vaccines," as reflected in the aforementioned figure 1.

3.76 1.41 94.84 94.84 • Yes • No • Don't know

Figure 2
Receiving all Required Doses of COVID-19 Vaccine

Source: CUNY DSI & CUNY School of Medicine, COVID-19 Survey 2021.

Of respondents who reported having received a vaccine, 94.84% interviewed indicated that they had already received or planned to receive all of the required doses in the vaccine series.

Further analysis shows the same positive trend in each of the seven states selected for this study of Dominicans attitudes towards vaccination as a preventive measure against getting and spreading the COVID-19 virus.

Table 1 presents interviewees' responses regarding their attitude towards immunization against COVID-19 stratified by state. While most respondents reported already receiving a vaccination in each state, Pennsylvania had the lowest proportion of vaccinated respondents (64.56%) and New York reported the highest proportion (83.02%).

Table 1
Percent of Respondents Who Reported Being Vaccinated or Plans to be Vaccinated for COVID-19 by State

	Categories						
States	Received the vaccine	Plans to vaccinate	Plans to vacci- nate uncertain	Does not believe in the vaccine (no plans to vaccinate)			
New York	83.02	9.82	3.92	3.24			
New Jersey	76.30	14.10	5.70	3.90			
Massachusetts	72.84	12.69	10.76	3.71			
Florida	70.30	12.32	11.27	6.11			
Pennsylvania	64.56	17.04	12.20	6.19			
Rhode Island	71.85	13.82	14.33	-			
Connecticut	78.12	9.83	4.31	7.74			

Further examination of the data reveals that, among vaccinated respondents, an overwhelming majority (92.79%) reported having had received the vaccine in their states of residence rather than traveling to another state (4.90%) or to the Dominican Republic (2.31%) to receive the vaccine (see figure 3).

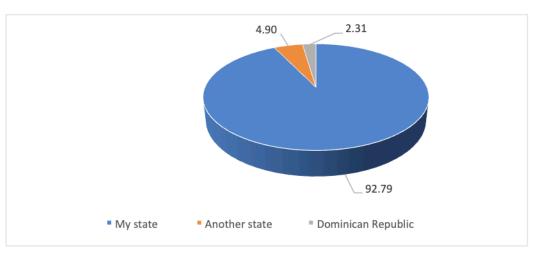


Figure 3
Vaccinated Location

Source: CUNY DSI & CUNY School of Medicine, COVID-19 Survey 2021.

With regards to the vaccine brand received, most respondents reported having received the Pfizer vaccine (47.37%), followed by Moderna (31.92%) and Johnson and Johnson (15.96%). Only 4.28% of vaccinated people interviewed in this study said they did not remember or were unsure of the brand of vaccine they received (see figure 4).

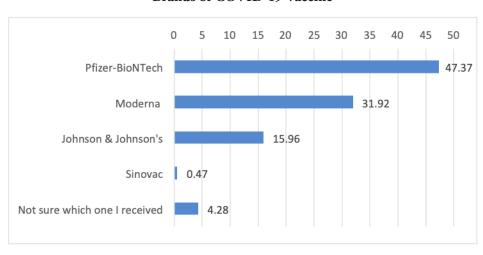


Figure 4
Brands of COVID-19 Vaccine

Respondents were also asked whether they had any preference regarding vaccine brand. We found that less half (45.87%) had a preference (see figure 5).

15.97 45.87 38.16 • Yes • No • Unsure

Figure 5
Preference for a Particular Brand of Vaccine

Source: CUNY DSI & CUNY School of Medicine, COVID-19 Survey 2021.

Disaggregated by gender, we found that men and women reported similar values regarding a preference for a specific brand of vaccine (48% and 44%, respectively). However, we observed notable differences by age group and place of birth. Younger people indicated greater selectivity, with 53% of respondents between the ages of 18 and 29 reporting a preference for one vaccine over another. This percentage dropped to 40% among people 50 years of age and older. Additionally, 50% of Dominicans born in the U.S. reported a preference for one vaccine over another and this dropped to 43% among Dominicans who were born in the Dominican Republic. (See figure 6.)

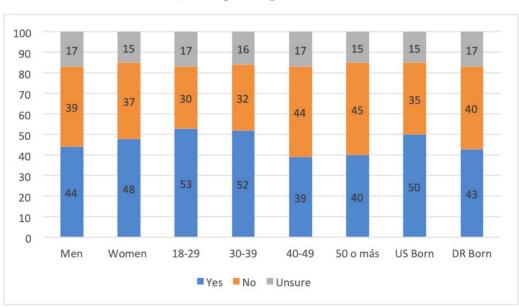
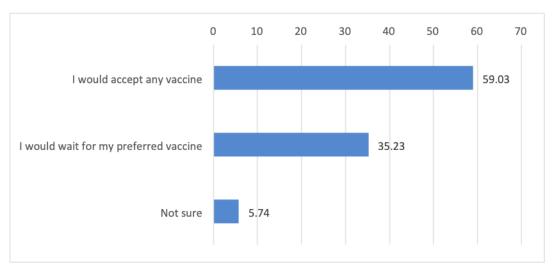


Figure 6
Preference for a Particular Brand of Vaccine
By sex, age, and place of birth

Finally, interviewees who were not yet vaccinated but planned to be, were asked whether they would accept a vaccine other than their preferred option or wait to receive the vaccine of their choice. Responses showed that it was more important for people of Dominican descent to be vaccinated against COVID-19 than wait to receive a vaccine of preference: 59.03% would accept a vaccine if the vaccine of their preference was unavailable, while only 35.23% indicated that they would delay vaccination until their brand of choice became available (see figure 7).

Figure 7
If Preferred COVID-19 Vaccine is Not Available,
Would Accept Another or Would Wait for Preferred Brand



Reasons for Vaccination

Vaccinated respondents and those who planned to get vaccinated were asked about what motivated them to get vaccinated. A desire to protect themselves from the COVID-19 virus was the primary reason behind an overwhelming majority of respondents' decision to be vaccinated. Social responsibility, or a desire to protect others, followed as the second reason encouraging respondents to get vaccinated. Conversely, only 2.7% of vaccinated respondents surveyed reported that they decided to be vaccinated because they felt pressured. (See figure 8).

0 10 20 30 40 50 60 70 80 To protect myself from COVID-19 74.97 It's my social responsibility 20.73 I was pressured None of these 1.61

Figure 8

Most Important Reason for Vaccinating or Planning to Vaccinate Against COVID-19

Source: CUNY DSI & CUNY School of Medicine, COVID-19 Survey 2021.

When stratifying these data by the state, we found that more than 70% of respondents from each of the states except Massachusetts and Rhode Island decided to be vaccinated or planned to be in order to protect oneself from COVID-19. In Massachusetts and Rhode Island, 53.66% and 67.73% respectively reported vaccinating to protect oneself.

Social responsibility was the second most common reason motivating respondents to get vaccinated, with the highest values in Massachusetts (44.41%) and Rhode Island (32.27%) and values between 13.92% and 20.02% in the other states. Interestingly, being forced, operationalized in this study as "social pressure," emerged as the reason least mentioned by respondents, registering values lower than the other two reasons across all states considered for this study, as it is shown in table 2.

Table 2
The most important reason for getting vaccinated, by state

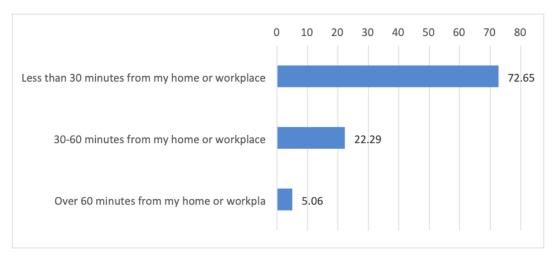
States	To protect myself	Social responsibility	Because of social pressure	None of these reasons	Total
New York	75.91	20.02	2.15	1.93	100.00
New Jersey	75.31	19.40	4.11	1.18	100.00
Massachusetts	53.66	44.41	1.93	-	100.00
Florida	78.69	18.47	1.68	1.16	100.00
Pennsylvania	77.56	13.92	3.53	4.99	100.00
Rhode Island	67.73	32.27	-	-	100.00
Connecticut	71.98	18.17	9.85	-	100.00

Source: CUNY DSI & CUNY School of Medicine, COVID-19 Survey 2021.

Accessing Vaccination Places

Nearly three quarters of vaccinated interviewees (72.65%) reported that it took them 30 minutes or less to reach the vaccination site from their place of residence or from their place of employment. Moreover, 22.29% commuted 30 minutes to an hour to their selected vaccination facility, and only 5.06% reported taking more than an hour, as shown in figure 9.

Figure 9
Amount of Time to Access Vaccination Places



These responses were similar for women and men (71% and 74%, respectively, reporting travelling 30 minutes or less to be vaccinated), but there were differences by age group. Younger people (18-29 years and 30-39 years) reported traveling more than 30 minutes to be vaccinated at a greater frequency than older people (40-49 years and 50 years and older). There were also differences by place of birth. Respondents born in the U.S. were less likely than respondents born in the Dominican Republic to report travelling 30 minutes or less to their vaccination site (68% and 75%, respectively). See figure 10.

Men Women 18-29 30-39 40-49 50 o más US Born DR Born Over 60 minutes from my home or workpla ■ 30-60 minutes from my home or workplace Less than 30 minutes from my home or workplace

Figure 10
Distance to Access the Place of Vaccination by Sex, Age, and Country of Births

Source: CUNY DSI & CUNY School of Medicine, COVID-19 Survey 2021.

Mitigation Strategies for Combating the Spread of COVID-19

The warning voice issued in the city of Geneva by the general director of the World Health Organization (WHO), Dr. Tedros Adhanom Ghebreyesus, on March 11th, 2020, was merely the trigger for the new social norm that would bring a set of rules for people's behaviors inside and outside their homes. The use of facemasks, keeping physical distance, and frequently washing one's hands have been recommended as mitigation strategies to prevent the spread of COVID-19. In many public places, people were required to wear face coverings and keep 6 feet apart. These behaviors have become socially normative, signaling a coded message that, in addition to addressing health concerns, it also reflected care, responsibility, and respect for others. Those who decided not to follow the recommended behavior in public spaces were ostracized, faced a discriminatory and judgmental attitude against them which sometimes resulted in confrontations between those who adhered to the norm and those who violated it (Marks 2021).

Thus, as shown in figure 11, our study collected data from respondents on how often they wore masks during their indoor activities outside their homes, such as visits to grocery stores, hairdressers or beauty salons, on while on public transport, at church, at work or in other shared spaces during the most severe months of the pandemic. Findings from this study show that an overwhelming proportion of Dominicans followed the directives to wear masks in recommended places and few did not obey the recommendation suggested by the CDC. A solid 79.12% of respondents reported that they always or almost always wore masks in selected indoor places, 17.09% said they used it sometimes or rarely, while only a small proportion (2.78%) reported "never" using masks in designated spaces.

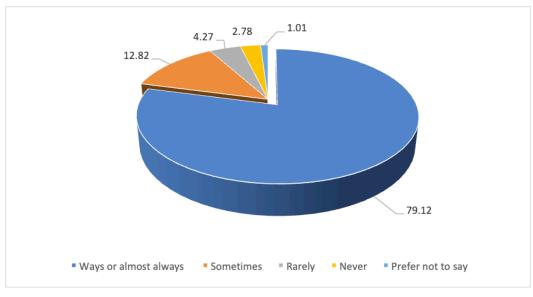


Figure 11 Wearing Masks in Indoor Public Places

Source: CUNY DSI & CUNY School of Medicine, COVID-19 Survey 2021.

Stratifying these data by state reveals that New Jersey, Massachusetts, New York and Florida recorded the highest percentage of respondents who wore masks always or almost always when performing indoor activities (85.67%, 84.96%, 82.01% and 74.92% respectively), while Rhode Island, Connecticut and Pennsylvania reported the lowest percentage of respondents who wear face covering in designated spaces (49.43%, 52.45%, and 64.12%, respectively), as shown in table 3.

Table 3 Wearing Masks Indoor Public Places by State

States	Always or almost always	Sometimes	Rarely	Never	Not responding	Total
New York	82.01	10.11	3.64	2.51	1.73	100.00
New Jersey	85.67	9.88	1.80	1.91	0.74	100.00
Massachusetts	84.96	15.04	1	-	-	100.00
Florida	74.92	17.42	2.75	4.49	0.41	100.00
Pennsylvania	64.12	22.39	8.36	5.13	-	100.00
Rhode Island	49.43	28.15	22.42	-	-	100.00
Connecticut	52.45	12.60	31.88	3.07	-	100.00

It is worth noting that most respondents continued to cover their face even after restrictions were eased. Table 6 shows responses to whether respondents continued to wear masks at the time of the survey. Patterns were similar to those reported during the height of the pandemic, with those in New Jersey (78.86%), New York (78.23%), Massachusetts (74.94%) and Florida (70.23%) reporting the highest proportions and those in Connecticut (66.27%), Pennsylvania (54.94%) and Rhode Island (49.43%) reporting lower proportions (see table 4).

Table 4
Wearing Masks Indoor Spaces at the Time of the Survey by State

States	Always or almost always	Sometimes	Rarely	Never	Not responding	Total
New York	78.23	11.48	5.46	3.46	1.60	100.00
New Jersey	78.86	12.99	6.42	1.773	-	100.00
Massachusetts	74.94	23.21	1.85	-	-	100.00
Florida	70.23	18.46	7.35	3.58	0.38	100.00
Pennsylvania	54.94	23.43	15.21	3.54	2.88	100.00
Rhode Island	49.43	28.15	22.42	-	-	100.00
Connecticut	66.27	9.82	17.40	3.44	3.07	100.00

Source: CUNY DSI & CUNY School of Medicine, COVID-19 Survey 2021.

Stress and the Pandemic

Respondents were asked a series of questions that allowed us to ascertain how often Dominicans reported: a) feeling nervous, anxious, or on edge, b) not being able to stop or control worrying c) having little interest or pleasure in doing things, and d) feeling down, depressed or hopeless. These results are presented in tables 5, 6, 7, and 8.

Overall, about half of the surveyed population in each state endorsed experiencing each of these symptoms at some time during the week before the interview. We highlight below the proportion of the samples that did not experience each symptom, despite the pandemic, and the variation in these symptoms across the seven states.

Looking at the proportion of respondent who reported that they **did not** experience a feeling of nervousness during the week prior to the interview, there was notable variation across the states. In Connecticut, 64.91% reported not feeling nervous while in Rhode Island, only 20.46% of respondents reported this. Conversely, between 3.18% and 22.07% reported feeling nervous **almost every day** during the week prior to been interviewed, as indicated in table 5.

Table 5
Feeling Nervous, Anxious or on Edge
Last Seven Days *Before* the Interview
by State

States	Not at all	Some days	More than half	Almost every day	Total
New York	47.10	25.90	12.13	14.87	100.00
New Jersey	53.96	20.01	11.43	14.60	100.00
Massachusetts	46.67	26.07	24.07	3.18	100.00
Florida	42.87	27.30	16.98	12.86	100.00
Pennsylvania	43.85	30.63	13.62	11.90	100.00
Rhode Island	20.46	27.65	37.56	14.33	100.00
Connecticut	64.91	13.03	-	22.07	100.00

Source: CUNY DSI & CUNY School of Medicine, COVID-19 Survey 2021.

Table 6 shows that, across the seven states, between 34.79% and 65.97% of respondents **did not** experience worry during the seven days prior to the interview. Again, respondents from Connecticut had the largest proportion reporting that they **did not worry at all** the week prior to been interviewed.

Table 6
Unable to Stop or Control Worrying the Last Seven Days *Before* the Interview by State

States	Not at all	Some days	More than half	Almost every day	Total
New York	52.49	17.34	15.78	14.38	100.00
New Jersey	52.17	25.76	7.49	14.59	100.00
Massachusetts	39.96	21.99	19.76	18.29	100.00
Florida	49.59	23.19	12.82	14.40	100.00
Pennsylvania	35.17	13.31	36.61	14.91	100.00
Rhode Island	34.79	8.84	14.33	42.05	100.00
Connecticut	65.97	10.17	-	23.86	100.00

Source: CUNY DSI & CUNY School of Medicine, COVID-19 Survey 2021.

Conversely, between 14.38% and 42.05% reported being unable to stop worrying almost every day the week prior to the interview. Again, Rhode Island had the largest proportion of respondents who said that **they were** worrying **almost every day** the week prior to the survey.

The patterns reported above were also found when examining whether respondents felt interest or pleasure in performing daily life activities. That is, between 29.30% and 71.33% **did not have little** interest or pleasure, with Connecticut being the state with the largest proportion lacking this sign of depression. Between 2.19% and 21.92% reported having little interest or pleasure in carrying out daily life tasks, with Rhode Island having the largest proportion reporting this outcome (27.65%, see table 7).

Table 7
Little Interest or Pleasure in Doing Things
During the Last Seven Days *Before* the Interview
by State

States	Not at all	Some days	More than half	Almost every day	Total
New York	52.45	19.41	11.46	16.68	100.00
New Jersey	51.96	22.60	11.99	13.45	100.00
Massachusetts	38.81	23.66	15.61	21.92	100.00
Florida	51.83	20.15	15.94	12.08	100.00
Pennsylvania	36.64	25.47	21.90	15.99	100.00
Rhode Island	29.30	43.05	-	27.65	100.00
Connecticut	71.33	14.96	11.52	2.19	100.00

Source: CUNY DSI & CUNY School of Medicine, COVID-19 Survey 2021.

Table 8 shows similar findings for feelings of depression or hopelessness. Future studies should investigate further these feelings as they may have existed prior to the pandemic.

Table 8
Feeling Down, Depressed or Hopeless
During the Last Seven Days *Before* the Interview
by State

States	Not at all	Some days	More than half	Almost every day	Total
New York	52.63	21.71	12.62	13.04	100.00
New Jersey	57.75	15.10	14.90	12.25	100.00
Massachusetts	50.63	14.74	20.68	13.95	100.00
Florida	51.59	25.14	13.88	9.38	100.00
Pennsylvania	41.57	27.52	14.39	16.53	100.00
Rhode Island	34.79	20.13	31.26	13.82	100.00
Connecticut	64.33	19.80	11.88	3.98	100.00

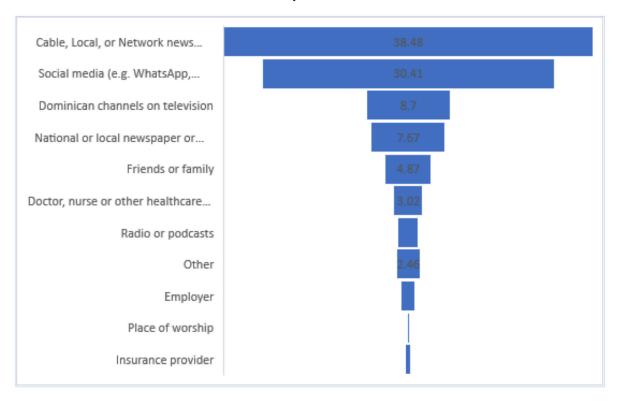
Source: CUNY DSI & CUNY School of Medicine, COVID-19 Survey 2021.

The next section addresses the question of how interviewees obtained information about COVID-19, a topic that generated much discussion given that prominent politicians and spokespeople did not agree on the validity of the information regarding COVID-19.

Main Sources of Information on COVID-19

Respondents were asked to identify the main sources they used to inform themselves about COVID-19 during the two weeks before the interview. The Internet was the most common source (38.48%), followed by virtual social networks, such as Facebook, Instagram, LinkedIn, Twitter, WhatsApp, YouTube, and Snapchat (30.41%). In contrast, less than 8.7% of respondents said that they obtained information about COVID-19 primarily through Dominican television channels, and 3.2% obtained information from doctors and nurses. See figure 12.

Figure 12
Main Source of Information About COVID-19
Last Two Weeks
by State



Source: CUNY DSI & CUNY School of Medicine, COVID-19 Survey 2021.

Stratifying these data by state, revealed similar findings in each state. Between 31.46% and 40.27% of respondents from six states reported receiving information about COVID-19 mainly via the Internet. However, in Rhode Island only 23.12% choose the Internet as main source of information for COVID-19 (see table 9).

Table 9 shows that between 17.47% and 51.56% of respondents in each state obtained information about COVID-19 through virtual social networks, with Rhode Island having the lowest and Connecticut having the highest proportion. In Rhode Island, each of the sources - internet, social media, television, and local newspaperswere equally likely to be selected. In the other states, where the Internet and social media outlets were substantially more likely to have been selected, traditional news communication outlets had an anemic representation.

Table 9
Main Source of information about COVID-19 in Last 2 Weeks
by States

States	Internet, news on the web	Social Media	Dominican TV Channels	local newspapers	Radio
New York	40.00	30.12	8.74	8.79	1.98
New Jersey	36.27	31.92	1.46	1.46	2.09
Massachusetts	36.03	39.78	7.79	7.79	-
Florida	40.27	26.30	9.61	9.61	1.95
Pennsylvania	37.28	25.06	9.53	9.53	4.94
Rhode Island	23.12	17.47	17.43	17.43	13.82
Connecticut	31.46	51.56	8.74	8.74	-

Source: CUNY DSI & CUNY School of Medicine, COVID-19 Survey 2021.

Table 10 shows the fall of traditional news media in contrast to the relevance acquired by the Internet and virtual social networks as sources of information preferred by the people interviewed. Stakeholders who were once decisive in the construction and dissemination of information that was perceived as accurate and effective, are progressively disappearing from the public scene. Among the displaced we found professionals who enjoyed high prestige in society, such as doctors and nurses, and employers in the workplace, among others. This is illustrated in table 10.

Table 10
Main Source of information about COVID-19 in Last 2 Weeks
by States

States	Doctors & nurses	Health Insurance	Employer	Friends	Other
New York	2.20	0.39	0.97	3.31	3.4
New Jersey	4.50	1.13	0.82	7.46	2.74
Massachusetts	-	-	2.98	1.65	-
Florida	4.02	0.45	-	7.01	2.37
Pennsylvania	6.42	2.20	6.56	6.42	1.58
Rhode Island	-	-	13.82	-	-
Connecticut	-	-	3.44	3.07	-

This study shows that though the presence of the Internet and virtual networks are growing aggressively among Dominicans, in general, traditional means of communication still remain competitive among Dominicans in general, but in some regions more than others, and among some segments of the population, at least as far as information related to the pandemic is concerned.

Finally, the radio station that, since its creation, became one of the main sources of information and molder of public opinion, today tend to occupy a negligible place in society as a vehicle for disseminating information. It is worth noticing that it is in the state of Rhode Island that radio has a higher representation (13.82%), relative to the other states, among respondents.

Conclusion & Policy Recommendation

In conclusion, this study illustrates that people of Dominican descent in the U.S. had a high rate of compliance with vaccination and other public health recommendations related to the pandemic. In fact, almost 8 in 10 respondents had been vaccinated by the second week of November 2021, and more than 9 in 10 of those vaccinated had received both doses by this time. Similarly, most respondents were able to vaccinate in their state of residence and very close to their homes or place of work, and vaccinated out of personal and social concern, not because of coercion. Public health campaigns should consider this information when addressing health crises in this population in the future.

It is also clear that not all Dominicans trust the same mediums of communication. While older Dominicans still preferred traditional means of communication to get information about COVID-19, younger Dominicans obtained this news mostly from social media outlets. This is to say, that policy makers should design strategies of communication that are not just language based but also generational.

A substantial number of respondents showed symptoms of stress, anxiety, or depression, with these outcomes varying significantly by state. In the states of Massachusetts and New Jersey, for instance, approximately 15% felt depressed or hopeless a few days of the week prior to the week of the interview, this percentage jumped to 27% in the state of Pennsylvania. A limitation of this data is that we cannot determine if these findings are unique to the Dominican population in these states, or whether Dominicans felt this way before the COVID-19 pandemic. It is also possible that other factors unrelated to the pandemic were causing these feelings. These are questions that the present study did not investigate. Yet, it would be important to better understand the reasons for the high incidence and the variation among the states in order to develop appropriate community-level interventions that target these issues within the Dominican population.

This study also shows that Dominican immigrants are likely to follow the protocols in place to mitigate the propagation of the virus in higher proportion than U.S.-born Dominicans. Future studies should consider nativity status and perhaps length of time in the U.S., important variables that may help shed light not only on the group's behavior but also on structural differentiations within the group.

Acknowledgments

This study has benefitted from the expertise and advisory of Dr. Rafael A. Lantigua, Professor of Medicine at Columbia University Medical Center and Associate Dean for Community Services Programs at the Vagelos College of Physicians and Surgeons at the same institution. His long history of active involvement in research on issues that affect the quality of life in minority populations and especially Dominicans made him an invaluable asset to this project. We also are indebted to Mariela Pichardo, Research Assistant at CUNY DSI, for her editorial assistantship.

Works Cited

- 1. Abbasi, J. (2021). Omicron Has Reached the US—Here's What Infectious Disease Experts Know About the Variant. *JAMA*.. doi:10.1001/jama.2021.22619.
- 2. Aldridge, R. W., Lewer, D., Katikireddi, S. V., Mathur, R., Pathak, N., Burns, R., Fragaszy, E. B., Johnson, A. M., Devakumar, D., Abubakar, I., & Hayward, A. (2020). Black, Asian and Minority Ethnic groups in England are at increased risk of death from COVID-19: indirect standardisation of NHS mortality data. *Wellcome Open Research*, 5, 88. https://doi.org/10.12688/wellcomeopenres.15922.2.
- 3. Alsan, M., Stantcheva, S., Yang, D., Cutler, D. (2020). Disparities in Coronavirus 2019 Reported Incidence, Knowledge, and Behavior Among US Adults. *JAMA Netw Open*, 3(6), e2012403. doi:10.1001/jamanetworkopen.2020.12403.
- 4. Chinni, D. (2020, April 12). *Coronavirus risk for African Americans tied to more than race*. NBC News. https://www.nbcnews.com/politics/meet-the-press/coronavirus-risk-african-americans-tied-more-race-n1182146.
- 5. COVID Collaborative. (2020). *Coronavirus Vaccine Hesitancy in Black and Latinx Communities*. https://www.covidcollaborative.us/content/vaccinetreatments/coronavirus-vaccine-hesitancy-in-black-and-latinx-communities.
- 6. Creech, C.B., Walker, S.C., & Samuels, R.J. (2021). SARS-CoV-2 Vaccines. *JAMA*, 325(13),1318–1320. doi:10.1001/jama.2021.3199.
- 7. Despres, C. (2021) Update: Coronavirus Cases Rates and Death Rates for Latinos in the United States. *Salud America*. https://salud-america.org/coronavirus-case-rates-and-death-rates-for-latinos-in-the-united-states/.
- 8. Feldman, J. M., & Bassett, M. T. (2021). Variation in COVID-19 Mortality in the US by Race and Ethnicity and Educational Attainment. *JAMA Network Open*, 4(11), e2135967. https://doi.org/10.1001/jamanetworkopen.2021.35967.
- 9. Ford, T., Reber, S., & Reeves, R. (2020). Race Gaps in COVID-19 Deaths Are Even Bigger than They Appear. *Brookings*. https://www.brookings.edu/blog/up-front/2020/06/16/race-gaps-in-covid-19-deaths-are-even-bigger-than-they-appear/.
- 10. Garg, S., Kim, L., Whitaker, M., O'Halloran, A., Cummings, C., Holstein, R., Prill, M., Chai, S. J., Kirley, P. D., Alden, N.B., Kawasaki, B., Yousey-Hindes, K., Niccolai, L., Anderson, E. J., Openo, K. P., Weigel, A., Monroe, M. L., Ryan, P., Henderson, J., ... Fry, A. (2020). Hospitalization rates and characteristics of patients hospitalized with laboratory-confirmed coronavirus disease 2019: COVID-NET, 14 States, March 1–30, 2020. *MMWR Morb Mortal Wkly Rep.*, 69(15), 458-464. doi:10.15585/mmwr. mm6915e3PubMedGoogle ScholarCrossref.
- 11. Gupta, S. (2020, April 10). Why African Americans may be especially vulnerable to COVID-19. *ScienceNews*. https://www.sciencenews.org/article/coronavirus-why-african-americans-vulnerable-covid-19-health-race.

- 12. Hamel, Liz, Lopes, L., Sparks, G., Kirzinger, A., Kearney, A., Stokes, M., & Brodie, M. (2021). KFF COVID-19 Vaccine Monitor: September 2021. *KFF*. https://www.kff.org/coronavirus-covid-19/poll-finding/kff-covid-19-vaccine-monitor-september-2021/.
- 13. Holtgrave, D. R., Barranco, M. A., Tesoriero, J. M., Blog, D. S., & Rosenberg, E. S. (2020). Assessing racial and ethnic disparities using a COVID-19 outcomes continuum for New York State. *Annals of Epidemiology*, 48, 9–14. https://doi.org/10.1016/j.annepidem.2020.06.010.
- 14. Jones, J., Sullivan, P. S., Sanchez, T. H., Guest, J. L., Hall, E. W., Luisi, N., Zlotorzynska, M., Wilde, G., Bradley, H., & Siegler, A. J. (2020). Similarities and Differences in COVID-19 Awareness, Concern, and Symptoms by Race and Ethnicity in the United States: Cross-Sectional Survey. *Journal of Medical Internet Research*, 22(7), e20001. https://doi.org/10.2196/20001.
- 15. Leon, B. (2021, October 5). *U.S. News*. Medical Mistrust Fuels Vaccine Hesitancy Among Hispanics. https://www.usnews.com/news/health-news/articles/2021-10-05/medical-mistrust-fuels-vaccine-hesitancy-among-hispanics.
- 16. Maqbool, A. (2020, April 11). Coronavirus: why has the virus hit African Americans so hard? *BBC News*. https://www.bbc.com/news/world-us-canada-52245690.
- 17. Kahn, B., Brown, L., Foege, W., & Gayle, H. (2.). (2020). Framework for Equitable Allocation of COVID-19 Vaccine. National Academies Press.
- 18. NYU Furman Center. (2020). COVID-19 Cases in New York City, a Neighborhood-Level Analysis. *The Stoop*. https://furmancenter.org/thestoop/entry/covid-19-cases-in-new-york-city-aneighborhood-level-analysis.
- 19. Preidt, R. (2021, October 5). *Many Latinos are hesitant to get a COVID-19 vaccine*. NPR. https://www.npr.org/2021/02/01/962905232/many-latinos-are-hesitant-to-get-a-covid-19-vaccine.
- 20. Sheils M, Haque, A. T., Haozous, E. A., Albert, P. S., Almeida, J. S., García-Closas, M., Nápoles, A. M., Pérez-Stable, E. J., Freedman, N. D., & Berrington de González, A. (2021). Racial and Ethnic Disparities in Excess Deaths During the COVID-19 Pandemic, March to December 2020. *Annals of Internal Medicine* 2021. https://doi.org/10.7326/M21-2134.
- 21. Singh, M., & Koran, M. (2020, April 18). *The Virus Doesn't Discriminate but Governments Do': Latinos Disproportionately Hit by Coronavirus*. The Guardian. https://www.theguardian.com/us-news/2020/apr/18/the-virus-doesnt-discriminate-butgovernments-do-latinos-disproportionately-hit-by-coronavirus.
- 22. Thebault, R., Ba Tran, A, & Williams, V. (2020, April 7). The coronavirus is infecting and killing black Americans at an alarmingly high rate. *Washington Post*. https://www.washingtonpost.com/nation/2020/04/07/coronavirus-is-infecting-killing-black-americans-an-alarmingly-high-rate-post-analysis-shows/?arc404=true.
- 23. Tregoning, J.S., Flight, K.E., Higham, S.L., Wang, Z., & Pierce, B. F. (2021). Progress of the COVID-19 vaccine effort: viruses, vaccines and variants versus efficacy, effectiveness and escape. *Nat Rev Immunol* 21, 626–636. https://doi.org/10.1038/s41577-021-00592-.
- 24. Wan, William. (2020, November 23). Coronavirus Vaccines Face Trust Gap in Black and Latino Communities, Study Finds. *Washington Post*. https://www.washingtonpost.com/health/2020/11/23/covid-vaccine-hesitancy/.

