In the CDC We Trust?:

Understanding Vaccine Hesitancy Among African Americans

Victoria King

Vanderbilt University

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Under the supervision of Tara McKay

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Abstract

In the U.S., African Americans are overwhelmed by the dual pandemics of COVID-19 and racial injustice which gravely harms their communities, families, and their personal mental and physical health outcomes. Although vaccines are available to build immunity to the SARS-CoV2 virus and mitigate side effects if contracted, many African Americans remain vaccine hesitant. Vaccine hesitancy is defined as a “delay in acceptance or refusal of safe vaccines despite availability of vaccine services” (Razai et al., 2021). To explore this striking juxtaposition of higher contraction rates and lower vaccination uptake, this study uses qualitative interviews with African Americans in the South to understand how societal factors may contribute to vaccine-related concerns and vaccine hesitancy among this population. From these interviews, themes about vaccine safety, mistrust, community, and blame arose. Despite vaccine hesitancy and what the media may portray, African Americans recognize the virus as a serious devastation and are taking the proper precautions of masking and social distancing even though they are not vaccinated. To conclude, I propose evidence-based recommendations for policy and governmental leaders to implement immediately in order to prevent another generation of health disparities because of a lack of a COVID-19 vaccination.

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Introduction

On January 20, 2020, the World Health Organization (WHO) marked the new coronavirus disease 2019 (COVID-19) as a global health emergency (Centers for Disease Control and Prevention [CDC], 2020). The world instantly changed: hugs and kisses exchanged by loved ones were replaced with six feet social distancing, smiles were covered by masks, and hands were frequently sanitized and/or gloved. As of March 2022, over 900,000 Americans have died from the virus while millions of others have been affected socially, economically, or psychologically (WHO, 2021).

Since the virus outbreak, African Americans have fared worse than the general population in terms of COVID-19 related illnesses and even deaths. In 2020, the first year of the pandemic, the life expectancy among African Americans dropped by *three* years in contrast to only one point two years for white Americans (CDC, 2020; Mendez, 2021). Even more unsettling, by March 2021, African Americans already had higher rates of mortality. Per 100,000 people, there were 179.8 Black deaths in contrast to 150.2 for whites, 147.3 for Hispanics, and 96 for Asians (APM, 2021). To combat this, government and public health officials adopted a one size fits all approach (e.g., physical distancing and masking) which does not always work for African Americans for a myriad of reasons, including many serving as frontline workers which increases the risk of contracting the virus.

With the introduction of the Moderna, Pfizer-BioNTech, and Johnson & Johnson's Janssen (J&J) vaccines, public health officials have high hopes the vaccines will help mitigate these disproportionate COVID-19 related effects. However, it is estimated that about one in five African Americans show reluctance in getting vaccinated (U.S. Census Bureau, 2022). In the

early distribution of the vaccines, some African Americans preferred to, “wait and see how the vaccine performed for others before taking it themselves” (Hamel et al., 2020). This sentiment is reflected in the current lower vaccination rates among African Americans. Looking at the national averages of vaccine uptake around the fall of 2021 in **Figure 1**, 79.7% of African Americans who were 18 years old or older had received at least one dose of the three vaccines, contrasting with 83.11% of white Americans* (U.S. Census Bureau, 2022). In the South, although the gap between Black and white vaccinations is not as distinct, disparities persist. For example, 81.82% of white women in the South received a vaccination in contrast to only 79.59% of African American women in the South (U.S. Census Bureau, 2022).

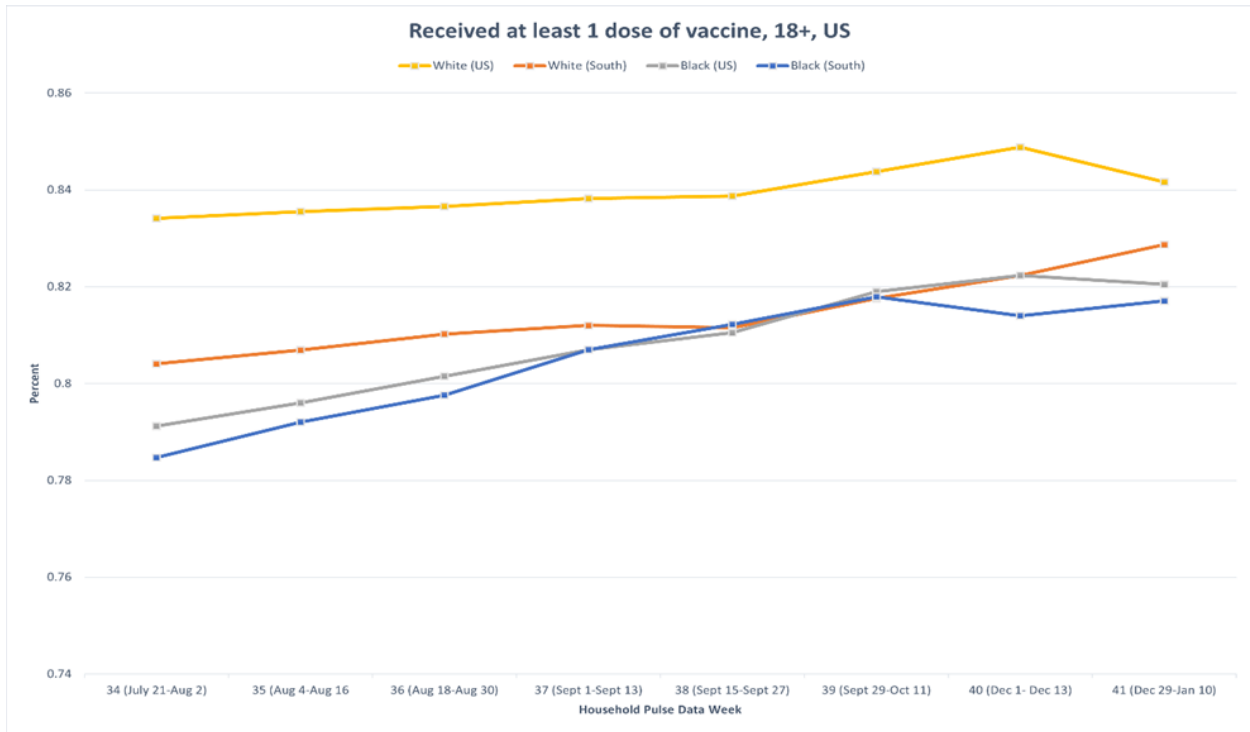
To address these vaccination disparities among African Americans, government and policy leaders have allocated money to make vaccines more accessible to low-income communities and encouraged vaccination. In the continued absence of vaccine uptake, President Biden and others have turned to scapegoating tactics, using accusatory phrases like “…your refusal has cost all of us” in his national address (2021; Biden, 2021). Once again, policymakers are using a blanketed approach for a centralized problem.

It is important that the perspectives of unvaccinated or previously vaccine hesitant Black individuals are heard and taken into account if policy leaders are to create targeted interventions to increase vaccination rates in Black communities. To help close this gap, this study examines how the background of an African American influences his or her perspective of the COVID-19 vaccines and, thus, contributes to vaccine hesitancy. Following a review of literature surrounding greater vaccine hesitancy among African Americans, I will describe how the study is conducted and analyze the results. Then, based on the data gleaned from informants, I will propose

recommendations to increase vaccine uptake in Black communities in order to develop solutions that will eliminate systemic consequences in future pandemics.

Figure 1

Time Series Graph of Black and White Vaccination Rates



Note. National and Southern vaccination rates from late July 2021 to early January 2022.

*Unless otherwise noted, all data in this research refers to non-Hispanic white Americans

Literature Review

The Pervasive Legacy of Medical Racism

Historical Origins

Historically, African Americans have faced inhumane treatment from those who should have protected them: healthcare workers and professionals. To provide a brief, but not comprehensive, look into this chronicled history, I have presented a few examples in the following paragraphs to help inform and make connections to the current pandemic of COVID-19 to potentially explain why some African Americans delay seeking medical treatment and/or delay receiving a vaccine.

Slavery did not begin with the trans-Atlantic slave trade. Rather, for centuries, Africans and Europeans alike have traded both commodities and human beings across the Mediterranean. However, this type of forced labor was not usually centered around race or ethnicity. It was, instead, based on other aspects like unpaid debts, social class, or religion. For example, the Spanish and Portuguese enslaved Indigenous people because they were not Christians (Wood, 2003). But, in 1619, this transformed into hereditary race-based slavery after Europeans needed workers to till the land. During the slave trade, millions of Africans were ripped from their homeland and brought to North America where they endured atrocities such as being sold, beaten, and slaughtered (Afigbo, 2009). From this point on, Black people have had to fight the perception that they were inferior simply because of their race and, in the context of medicine, not deserving of subpar healthcare, inhumane experimentation and violent harm.

Louisiana physician, Dr. Samuel A. Cartwright attempted to use science to show that

Africans were best fit for slavery, claiming they had a better sense of sight and smell, stronger physicality, and thicker and darker skin to protect them from the sun. According to Cartwright, these differences, some which would later be disproven, equated to a "debasement of mind." Taking it a step further, he falsely argued Africans *liked* slavery as it gave them "more tranquility and sensual enjoyment" (Guillory, 1968). With seemingly reputable data from Cartwright, it paved the way for other medical professionals to also mistreat Black people even post abolition. Dr. James Marion Sims discovered the cure for vesicovaginal fistula by experimenting on enslaved Black women like Anarcha and Lucy. In his autobiography, Sims admits that the operations were excruciatingly painful and damaging, "Lucy's agony was extreme. She was much prostrated, and I thought that she was going to die" and "...it took Lucy two or three months to recover entirely from the effects of the operation" (Sims, 1884; Ojanuga, 1993). However, Lucy, like the other test subjects, did not receive anesthesia, even though it was widely available to doctors at the time. In fact, Anarcha underwent the same experiment *thirteen* times—all without anesthesia. Yet, when Sims finally perfected his surgical technique against the will of these women, he performed every procedure *with* anesthesia on white women (Ojanuga, 1993; Sims, 1884).

The most widely known and recognized display of medical racism in the African American canon, by far, is the "The Effects of Untreated Syphilis in the Negro Male," referred to hereafter as the Tuskegee experiment. In 1932, doctors from the U.S. Public Health Service wanted to study the long-term consequences of syphilis after 36% of African Americans in Alabama had contracted the disease (syphilis usually stemmed from poor sanitation) (Fourtner et. al, 1994). Therefore, they lured in about 600 Black men, with and without the disease, to participate in their study with the compensation of free healthcare, meals, and, the most sought

after, help to treat their disease—all of which were invaluable during the Great Depression (Equal Justice Initiative [EJI], 2020). Ernest Hendon, the last survivor who passed away in 2004, confirms this: “They said it was a study that would do you good” (Mclellan, 2004). However, 11 years into the experiment when penicillin became available to treat the men, doctors withheld it in order to continue with their research, causing some of the men to unnecessarily endure symptoms like paralysis and even death. It was not until 1972, 40 years later, that the study was forced to end. Traces of this dark history can be observed even in the 21st century.

Present Day Implications

Race is a social construct with no biological meaning. However, stereotypes, originating from the past, sometimes inform today’s health practices. For example, some medical students, like Cartwright, mistakenly believed that Black patients could endure more pain than white patients even for the same affliction. As a result, African Americans in the U.S. are “undertreated” for pain. In other words, doctors are not providing the correct dose of medication for Black patients (Hoffman et al., 2016). In the context of the pandemic, as aforementioned, Black people suffer disproportionate consequences. There are many factors that explain this inequality, with the overarching explanation being that their existence looked quite different than the average American.

While many Americans had the luxury of teleworking, the majority of African Americans had to report to the frontlines of the pandemic, acting as essential workers and potentially jeopardizing their health in order to make ends meet. In fact, 29.7% of African Americans have occupations that align with essential work. This includes social services, transportation, health care, and convenience store workers (Brown et al., 2020). Employment does not equate to access

to healthcare. In fact, 12.3% of Black workers do not have health insurance compared to 7.5% of white workers (Gould & Wilson, 2020). Even in terms of simply receiving a COVID-19 test when they first became available to the public, African Americans faced unequal access. In New York City, for example, white residents had greater access to testing centers (63 sites) compared to Hispanic residents (16 sites) followed lastly by Black residents (only 9 sites) (Grigsby-Toussaint et al., 2021). These unique set of circumstances went unacknowledged by the government who, instead, pushed for blanketed mitigation tactics.

To add to this already mentally taxing reality, at the peak of the coronavirus outbreak, African Americans experienced yet another pandemic: the rise of Black Lives Matter (BLM). Created in 2013 by three Black women, the movement heightened in the summer of 2020 to seek justice for George Floyd and Breonna Taylor, who lost their lives to police brutality, and to call out other forms of racial biases like workplace microaggressions. These encounters of racism can and do harm Black bodies, not only causing detrimental effects on the mind (i.e., major depression), but also causing chronic conditions like inflammation (Thames et al., 2019).

The long-standing history of medical racism and police brutality with repeated failures to hold individuals accountable has led to widespread mistrust of predominantly white institutions among African Americans. This includes mistrust of police and law enforcement, government officials and institutions, and healthcare, and has found a very particular outlet in medical mistrust and concerns about COVID-19 vaccine safety.

Research Question

In the U.S., Black communities are under-vaccinated. However, there is limited data exploring the ‘why’ that motivates these behaviors. Therefore, this study aims to answer the

research question: Drawing from the social determinants of health theory, how does one's background, among African Americans, influence vaccine hesitancy in the U.S.? The social determinants of health framework is especially resourceful because it helps to capture the experiences of Black communities throughout the pandemic, going beyond broad demographic categories (including gender and age) to posit that there are many interlocking factors that can affect an individual's health outcome, including healthcare, community, mental health and education (2021).

Methods

This study draws on qualitative interviews with ten African Americans living in the Southern region of the U.S. Prior to data collection, I received an Institutional Review Board approval from Vanderbilt University. All participants had to be Black/African Americans who were at least 18 years of age and either unvaccinated or waited several months or more to receive the vaccine because of apprehension in order to participate in the study. Participants were recruited through flyer advertisements and purposeful snowball sampling. In other words, one interviewee was selected and then that individual would refer another person in his or her social sphere. I received a mini grant from the Vanderbilt Community Lab for the Intersectional Study of Black Women and Girls in Society for the funding of this study.

After gaining participants' consent, the conversations were recorded either by Zoom, a video communications app, or phone call. If the conversation took place via phone call, TapeACall was used to record the conversation. Each interview lasted approximately 20 to 30 minutes where prewritten questions were used to begin the conversation. Afterwards, follow-up questions for clarification or elaboration were used, unique to each of the participants to gain a better understanding of their perspective about the vaccines. Following the interview, Otter.ai, a

transcription platform, transcribed the conversation. This was checked a second time, by hand, for validity. Afterwards, I highlighted any mention of vaccine-related concerns and pandemic-related experiences. Then, I moved the highlighted comments into a separate document where they were placed into categories based on topics. For example, any mention of “side effects” was grouped together with similar sentiments. This allowed me to map out and draw connections between some of the participants. For confidentiality, every participant will be given a pseudonym, i.e., “Anthony.” Lastly, I added descriptor variables to each participant.

Social Determinants of Health in Context

Demographic Data

To explore the social determinants of health of the informants, the results section is broken up into two parts: the first section, in **Table 1,** provides basic demographic information about the participants and the second section describes firsthand accounts of their experiences amid COVID-19. This data was collected at the beginning of the interview, asking participants to, “Tell me a little bit about yourself.” Follow-up questions ensued if an individual left out pertinent information. One instance of this was: “You said that you were employed. If you don’t mind sharing, what do you do for a living?”

Table 1. Demographic Profile

Demographics	*Participants, N=10*
Age Range	20-72 (Median=39)
Sex	
Male	40% (n=4)
Female	60% (n=6)

Education	
Associate degree	10% (n=1)
Bachelor's degree (or in pursuit of one)	30% (n=3)
Master's degree	60% (n=6)
Political Affiliation	
Democrat	70% (n=7)
Republican	10% (n=1)
No comment	20% (n=2)
Religion	
Christian	80% (n=8)
Atheist	10% (n=1)
Agnostic	10% (n=1)
Employment	
Yes	70% (n=7)
No	20% (n=2)
Retired	10% (n=1)
Marital Status	
Married	30% (n=3)
Single	70% (n=7)
Health Insurance	
Yes	90% (n=9)
No	10% (n=1)

Other relevant information includes: 50% (n=5) of the interviewees are parents. Among parents, the average number of children is 2.4. Among those who are employed, 40% (n=4) have white collar occupations compared to 30% (n=3) of African Americans who have blue collar occupations. To conclude, 80% (n=8) expressed some form of community involvement through non-profit organizations, voluntary associations at school, church work, and coaching.

Individual Challenges and Strains Amid the Pandemic

After gaining demographic data, informants were invited to share more background

information through questions like, "If at all, how has your life changed pre-pandemic to now as a result of COVID-19?" Questions like these were intentionally left broad to gain a more comprehensive understanding of their lived reality and experience amid COVID-19. For some of the interviewees, the coronavirus brought on added burdens to their careers. Sydney, a former high school history teacher, felt forced to quit her job (she now works as an academic advisor) following frustration with the way her school administration went about handling COVID-19:

> Sydney: Well, teaching in the pandemic has definitely had its challenges… I worked in a low-income area, so a lot of the students didn't have access to technology…and I had some students who did not get a computer from the district until maybe two or three weeks before the end of the school year… my particular grade level had issues with a lot of our students who were getting COVID. They were asymptomatic and our campus was not big enough to where we could really socially distance… So just being that our particular district caters to low socioeconomic groups, you would have thought that they would have been more prepared to accommodate students and they definitely were not…So yeah, just lots of things—parents not caring. You know, you have to be more than just the teacher. You have to be a parent, the counselor, a social worker.

Furthermore, 60% of participants expressed some sentiment of loneliness and/or isolation that, at times, adversely impacted their mental health. Jasmine, a military personnel who works for the Department of Defense, recalled, "I had a hard time not being able to go over to my mom's [house]." While on campus in 2020, Anthony, an undergraduate who plans to enter the technology field, was kept estranged from peers to keep the spread of the virus down. This meant events on campus were suspended and strict social distancing measures were implemented to limit social interaction: "I was just stuck in my room like all year and that was definitely hard."

Similarly, Nia, a real estate property manager, lamented the lack of social interaction both on and off the job:

> "…it was difficult because I enjoy being around others. And with the pandemic, people weren't really going out with each other. So mentally that was a little challenging…it's really difficult due to the fact that I was already actually working from home at time, and the only outlet that I had was going to church and due to the pandemic…we weren't able to have church [in person]. I wasn't able to be around anybody."

Others chose to share how the reignited rise of BLM affected their positionality in society. During the pandemic, Chris served as an essential worker, responsible for the transportation and distribution of packages before deciding to switch to another occupation. As an essential worker, he not only increased his susceptibility of contracting the virus by putting his physical body on the line, but also endured workplace prejudice and harassment. His boss sent out an email in support of Black employees to which his white co-workers joked "Both Lives Matter" before another person laughed and said, "too soon, too soon."

> He recalls: "I should've snapped right there, but I didn't even say anything. But I was in the room…So they were doing this play on words in April or May on Black Lives Matter. Like, this just started and you're doing a play on words now? …But that just kind of let me know how minuscule these situations were to white people. It didn't affect them. It never has. They've always reaped the benefits of our Black life, but they've never cared about that life… [speaking in general about race relations during the pandemic] So, I was really like, mentally—I was pretty strong mentally. But I was kind of like, I was flabbergasted. I couldn't believe that even still, white people just don't understand."

Unfortunately, this sentiment of hurt intermingled with frustration was shared by Michael, an undergraduate pursuing a major in public health. Attending a predominantly white college, he spoke about changing his normal behavior to appear less threatening to police officers:

> "...I used to go out freely without being scared at night, but now—I'm not like terrified. I don't want to call it that. But it's in my subconscious to be conscious of whoever I'm walking with and the people around me just to be sure I'm doing everything right. I make sure that I don't look suspicious in any way…It just kind of guides everything I do these days, especially in public spaces."

Because of COVID-19, school administrators had to scramble to find an alternative method of continuing to educate students while simultaneously not exposing them to the virus while in school. Websites like Zoom and Teams have quickly become popular virtual learning platforms for students across all age cohorts. However, this fast transition has left some students and parents struggling to adapt. For example, Anthony described virtual learning as "hard" and a "huge challenge": "...I just find that I needed to, I guess, keep a strict schedule of all of my assignments so I can be able to…just get good grades." Caleb, an accountant, elaborated on his exhaustion of juggling a full-time job, part time volunteer work as a football referee while being married with children:

> "...at first it was taking a toll on my mental health because the kids were at home and if anybody doesn't know about virtual learning, it is totally different. I mean, sometimes they can cut off the internet; sometimes the teacher needs to talk to you and have a meeting here and there. It's taken a little bit of a toll on me…I know other people it made crazy, but I wouldn't go that far. I'm just stressed out."

On top of the normal day-to-day challenges, like paying bills, COVID-19 has inadvertently added to the strain African Americans face on a day-to-day basis through career stressors, mental burdens, and the recognition of continued racial tension.

Reflecting on Vaccines and Vaccine Hesitancy

From these interviews, four integral themes, safety, mistrust, community, and blame, about vaccine hesitancy arose. Based solely on these conversations, the themes are defined as follows: (1) Vaccine safety: the level at which participants feel as though the immunizations will not cause undue bodily harm and, thus, perceive them as an adequate way to combat COVID-19; (2) Vaccine mistrust: the level at which informants feel they can depend on authoritative figures, like the government, public health officials and other policy leaders, to adequately provide informative, accurate data about the vaccines; (3) Community: the environment individuals reside in (such as their neighborhood and work) coupled with family, friends and peers that act as a pillar of support in some way; (4) Blame: the level at which unvaccinated individuals are criticized or condemned by society. These core themes, which are further divided into subcategories, will be examined and analyzed in the following sections.

Safety

Timeline

Dubbed “Operation Warp Speed” by the Department of Health and Human Services and the Department of Defense, the three vaccines, Moderna, Pfizer-BioNTech, and Johnson & Johnson’s Janssen (J&J), were created in early 2021 and deployed to the public in less than a year (GAO, 2021). However, it, historically, has taken ten to fifteen years to develop an effective

vaccine as scientists need to comprehensively test for safety in three or more clinical trials before receiving the licensure to distribute it. In fact, prior to the COVID-19 vaccines, the mumps immunization was the fastest vaccine to be produced, taking about four years in 1967 (Brothers, 2020; GAO, 2021). Naturally, many of the interviewees expressed skepticism and doubted the legitimacy about the sudden speed at which these vaccines were produced:

> Sydney: “And with the FDA so quickly approving these vaccines, I was just like, that’s a little sketch. How do you know for sure these [vaccines] have been working…and this virus just came out? And now all of a sudden you have a vaccine? …Has this virus really just been out for these last few months? Or has it been around, and you guys haven’t told us?”

> Jada: “You can’t give a conclusive report when you only did it for 30 days…None of this stuff has been tested for two or three years.”

> Michael: “Like everyone, I was kind of not sure whether it was safe, because it was, like, produced within a relatively short time compared to other vaccines.”

Scientists have insisted this accelerated timeline is nothing to worry about and that the COVID-19 vaccines are just as safe as others made before it with a longer timeframe, largely attributing this to mRNA technology. It is evident, however, that African Americans are not quite convinced.

Side Effects

Whereas informants like Sydney, Jada, and Michael approached the accelerated rollout of the vaccines with *apprehension*, it seems the topic of side effects, for others, is rooted more so in *fear* of overall safety:

> Nia: “Would there be any side effects for getting the vaccine? And then how long would it take for those side effects to go away? But the answer would be—they don’t know.”

> Caleb: “I just didn’t know what was in it and how my body would react to it.”

This reasoning is justified for two reasons: (1) Black people are underrepresented in the clinical trials of COVID-19. Although they make up 12.3% of the U.S. population, in the Moderna trial, for instance, only 9.7% of African Americans were represented—compared to an overrepresentation of white Americans who make up 73.6% of the U.S. population and 79.4% of the Moderna trials (Artiga et al., 2021). (2) Beyond the normal side effects (muscle pain, chills, tiredness, etc.) of the body building immunity to COVID-19 once an individual receives the vaccine, there have been some, albeit rare and sometimes temporary, instances of abnormal reactions. The J&J vaccine caused fainting and blood clots in some women under 50, leading the government to put a temporary pause on their distribution to the public. The Moderna and Pfizer-BioNTech vaccines may cause heart inflammation i.e., myocarditis and pericarditis for adolescents and young adults. Furthermore, all three vaccines can cause changes in the female menstrual cycle (Maragakis & Kelen, 2021; Male, 2021). Both Ashley and Jasmine are both aware of these reports, but for Ashley, it left her with added stress of which vaccine to choose from.

> Ashley, confirming Maragakis & Kelen (2021), recounted: “...at one point, they were saying, “‘oh, you know, don’t do Johnson because it’s bad.’” Then it said, “‘only do Pfizer.’” Then it’s saying, “‘Oh, do Moderna,’” but Moderna hurts males in the area of heart disease or something like that.”

Jasmine, a single woman with no kids, instead, was anxious that the vaccine would interfere with

her reproduction and cause infertility:

> Jasmine: "…we do not understand what the side effects could be long-term, as well as short term because some people have reactions right away, but long term, we don't understand what it may be and how it might affect women, especially women who haven't had children yet."

Scientists have denied Jasmine's claim (ASRM, 2021) and insist the benefits of the vaccines outweigh the risks, but the future implications of the virus on the physical body remains unknown, notably for the Black population whose underrepresentation in clinical trials may translate to a lack of in-depth testing and research.

Pre-Existing Conditions

Millions of African Americans have pre-existing health conditions and comorbidities like asthma and hypertension (Gould & Wilson, 2020). Black women, for example, have higher rates of asthma at 11.4% in contrast to 10.3% for white women, 7.8% for Hispanic women and 5% for Asian women (CDC, 2020). Of individuals who suffer from epilepsy, a brain disorder characterized by two or more seizures, African Americans make up 33% (*Epilepsy*, 2016). Reasons for these disproportionate, pre-existing conditions include lack of access to quality healthcare, health illiteracy, and/or pain not taken seriously by healthcare providers. Furthermore, "1 out of 365" African Americans have sickle cell disease (SCD) and "1 out of 13" African Americans have the trait (CDC, 2020). Similar to SCD, COVID-19 is a vascular disease, affecting clotting and capillaries, so receiving a shot that injects a small strain of COVID-19 into a SCD system may potentially cause severe complications. Scientists have stated that the vaccine will not negatively impact individuals that have SCD or its trait, but, as of the fall of 2021, they

have not released studies and trials that show actual *documented* evidence to support these claims (2022). Although this was not expressed as a concern by participants in this study, it could be a limiting factor to other African Americans who suffer from this condition.

Specific to this study, African Americans who have pre-existing conditions are aware this may increase the likelihood of hospitalization or, at the very least, worsen their symptoms if they contract the virus. Yet, they are continuing to proceed with caution out of concern that the vaccine may disrupt their already compromised system. After taking the flu shot, Nia (who also has asthma) developed painful, swollen lymph nodes for a week. Not wanting this same experience to repeat itself, she held off on taking the COVID-19 immunization for a while:

> Nia: "Well, my main concern in regards to the vaccine was what it had it in it or what it would actually do to me…because the last time I got a flu shot, I didn't know what it was in it and my lymph nodes swelled up… [Referring to the COVID-19 vaccines] Okay, well, what's the point? I don't know what's in this thing. And I don't know what it's going to do. So, I was like no."

Similarly, Ashley, who previously suffered from epilepsy, worried the COVID-19 vaccine may interfere with her medication:

> Ashley: "Also, I have—which will be helpful as far as health wise—seizures, and they started back in around 2014. And once I finally got on the proper medication, I have not had one since 2018. So, I am on a prescription dose for it: Dilantin. That was something that I was very particular about when it came to receiving the vaccine…So making sure that was not going to compromise the things that I was already on. I was on another medicine for high cholesterol as well. Also of course, calcium with vitamin D. There

> were things that took place as far as my health and I wanted to make sure if I chose to do this [getting the vaccine], that the reward was going to be great."

More seriously, Jada has several comorbidities like diabetes, high blood pressure, and epilepsy (her seizures began after a car accident with a drunk driver several years ago). Consequently, she must always be vigilant about what is put in her body; the vaccine is no exception. She expresses her exhaustion:

> Jada: "I take 16 pills a day throughout a 24-hour period. I take 16 pills. Then I take a pill to counteract a pill. I have serious medical issues. If I don't take them, then I have seizures. Then I have a pill for that...There is no substantial evidence that says my seizure medication is proactive to the shots or that the ingredients or chemicals in the shot is going to counteract my medication. There is no proof. No studies. The government has not sat down and said, "'these people taking this medication, should we give them this shot?'" Instead, they're saying if you're diabetic, you should take diabetic medication. If you have heart conditions, you should take heart medications. No and no. That's not true. They have not proactively studied how these medications will react. No one knows what chemicals are making up the injections."

Although the CDC does provide a list of both active and inactive ingredients contained in the vaccines, the scientific jargon is not easily understandable (e.g., "2[(polyethylene glycol (PEG))-2000]-N, N-ditetradecylacetamide") to those not in the science community (2021). Therefore, Jada is correct: it should not be the burden of the general public to figure out how different medications will react with the vaccine. It should be the responsibility of scientists and doctors. Publishing this data in a way that is more accessible could potentially make

immunocompromised individuals feel more at ease with taking the vaccine.

Mistrust

Unclear Guidelines

After the introduction of the COVID-19 vaccines, the guidelines, at times, became confusing and unclear, causing Black Americans to lose what little confidence they have in authoritative figures. In the beginning of vaccine rollout, it was recommended that people who chose to get vaccinated receive either two doses of the Moderna or the Pfizer-BioNTech vaccine or one dose of the J&J. This came with the underlying assumption that once vaccinated, the shots would end (Jasmine: "I still don't even know if the vaccine is going to be yearly. Or will it be annually like the flu shot?"). Not long after, however, scientists discovered that the antibodies from the vaccines diminish over time, so booster shots were introduced as an additional layer of protection against the virus. Public health officials now strongly advise receiving the Moderna or the Pfizer-BioNTech booster shot every six months, and the J&J booster shot every two months (the J&J has a lower efficacy rate out of the three vaccines) (CDC, 2022). Drawing from the lack of representation in the clinical trials (from Artiga et al. (2021)) and frustration with the number of booster shots, Kayla, a retired dental technician, and Jada, a foster care worker, voiced their unease:

> Kayla: "My point of view is there are a lot of shots out there. Why can't you make a shot and be done with it? Every six months you have to be vaccinated for it. The shots are not working if you have to keep coming back. I don't push myself towards that. I keep going."

> Jada: “They want shot after shot; they are not sure what they’re doing. They have to have people to take those boosters until they find something that is right… This is why they’re telling people you have to take it every six months or so. They have to compare it to different ages and races, and they haven’t done that yet.”

Originally, the CDC prohibited the intermixing of COVID-19 boosters. In other words, if an individual received the Moderna vaccine, then the booster shot also had to be from Moderna. But this mandate was retracted and, instead, allowed individuals to mix and match booster vaccines. Now, the public can receive the J&J vaccine, and a Pfizer-BioNTech booster shot, for example (CDC, 2022). Referencing this, Sydney, who eventually got vaccinated, describes her frustration:

> Sydney: “…one day the sky is purple, the next day it’s green, the next day it’s blue so I’m just gonna…I already didn’t really want to get it anyways, so I’m just going to stick to what I have [the Moderna] and, you know, hope everything works out. That’s really all you can do because I honestly feel like they don’t know…”

Consequently, African Americans are struggling to keep up with new information released by the government and public health officials. While this is likely true for many Americans, for Black people especially, contradictory COVID-19 guidelines from the government are occurring alongside a historical legacy of abuse, neglect and dismissal of their concerns. As recently as December 2021, the FDA approved the use of an antiviral pill for COVID-19 and the CDC decreased the isolation period of quarantine after exposure to COVID-19 from fourteen to five days (FDA, 2021). Therefore, conflicting, and ever-changing guidelines signals to African Americans that authoritative figures are not in control of COVID-19 related information, which causes a lack of confidence (Sydney: “…I honestly feel like they don’t know” and Jada: “…they

are not sure what they're doing"). Leaders must commit to providing consistent data.

Medical Racism

These confusing guidelines only worsen the mistrust African Americans feel towards governmental and public health officials, originating with the longstanding history of medical discrimination as referenced in the background literature. So, it is unsurprising yet justifiable that many (60%) of the interviewees made some reference to these gruesome events and connected it to the COVID-19 vaccines. Michael briefly touches on this violence, "I think Black people, in general, have not had the best experiences with medicine." Anthony and Sydney elaborate on this a bit more, paying particular attention to the Tuskegee experiment described in EJI (2020):

> Anthony: "So, I think definitely, it's like as Black Americans, we have a unique relationship with medicine... When you take into consideration the experimentations that have been conducted on Black people, in particular the Tuskegee study, Black men were treated on to understand syphilis. I think that comes into play on how Black people respond to the vaccine in general and how they perceive vaccines."
>
> Sydney: "Honestly, initially, I was extremely hesitant to get it just because America's history with the Black American in the medical field and medical testing is, um, terrible. Let's just be honest. I did not want to become another (pauses) Tuskegee experiment or anything like that. So, I was very hesitant."
>
> "I do have some friends…who have chosen not to get it…and it's solely based on America not doing right [in the past]."

In addition to the Tuskegee experiment, Chris spoke out against Agent Orange, a toxic herbicide

used during the Vietnam War that caused skin diseases and various types of cancer among Vietnamese people and some U.S. veterans (Schmidt, 2016):

> Chris: “And it’s hard to trust the government, who has done really shady things in the past. And I don’t think today’s any different. Talk about Agent Orange…there was an orange something that was present and then the Tuskegee experiment. Because all these things have happened before, so, what is to say that this won’t happen again? Like, what stops the government from saying, “‘let’s try it again?’”

The knowledge of past medical racism compounded with current, contradictory guidelines only serves to complicate the way African Americans perceive the vaccines and, further, adds to the conglomeration of stress and anxiety in their decision-making.

Community

Religion

Rather than turning outward to have confidence within institutions that have failed them in the past, African Americans, instead, turn inward to focus on developing relationships within their communities. One of the biggest examples that demonstrates this aspect of community building is the role of the church. According to the Pew Research Center, 79% of Black people identify as Christians (2018). Compared to other groups of people, they are more likely to attend church regularly and emphasize the importance of God in their lives (Taylor et al., 1996). Even within this study, 80% of informants cited Christianity as their main form of religion.

Because of the virus outbreak, churches were forced to close and hold services virtually. Studies found this may have negatively impacted the mental health of Black churchgoers

(DeSouza et al., 2020; Nia "...we weren't able to have church. I wasn't able to be around anybody"). Despite this, for older African Americans in this study specifically, simply having this religious background is an advantageous coping mechanism. In other words, religion serves as a protective factor. Amid COVID-19 and the vaccines, Jada, who is 66 years old, seems to be at peace and attributes this calm state to her relationship with God:

> Jada: "I believe in my faith and my beliefs. I know that God—He brought me through a lot of the stuff that man has put out and He says to be anxious for nothing… (referencing the scripture, Philippians 4:6-8). I follow God's Word. I trust in Him… I'm not worried about this stuff because man cannot do more than what God allows him to do."

Kayla, a 72-year-old, has a similar mantra to Jada and chooses to rely on God rather than the vaccines to get through the virus outbreak:

> Kayla: "The only thing I do is say my prayers and ask God to help us through this. Give scientists the knowledge they need to get us through this. When I'm talking, people say "'why aren't you afraid?'" Why should I be afraid…? I say my prayers. I pray for everyone else…They don't want to hear it. [Mimicking others] "'There you go. Back to religion again.'" I'm just saying we should only put God on a pedestal…I would say the curtain is tore down. We got some that rely on faith, and some that rely on man. I'm sticking with my faith. It's the faith that's keeping me going."

African Americans in the older generation are relying on God instead of the vaccine, but those who are a bit younger are at a standstill. Nia, a 45-year-old, recalls previously struggling with whether to receive the vaccine. She speaks candidly about the pressure she faces while attending church services:

Nia: "There was division in regards to that [the vaccine], especially in the body of Christ. If you got vaccinated, it made it seem like you weren't trusting in the Lord. Like you were doubting and that you didn't trust that the Lord would heal you or be with you if you happen to get it [COVID-19] or didn't get it."

For most Black people, Christianity acts as a source of refuge and comfort, notably during tumultuous times. Older people, especially, lean into this more than those in the younger generation, positively affecting their mental health, but—at the same time—this may put them at a greater risk of contracting COVID-19.

Not Contracting the Virus and Horror Stories

Several of the informants discussed their unwillingness to get one of the vaccines because they have not contracted the virus themselves. Chris spoke in the third person, generically describing this point of view (though I believe he was referring to himself):

Chris: "So, some people haven't gotten sick, some people have…It just depends on…how you feel about your health status. If you remained healthy throughout this whole pandemic—and most people probably would feel like it's much calmer now than it was last year at this time—so, you feel like I fought it all this time and now mask mandates have been lifted, so I'm good. I'm happy. I'm out of the woods, as they say so."

For other informants, just hearing about or witnessing primary accounts from others who had adverse experiences after taking the immunization was enough for them to reconsider:

Kayla: "We haven't been sick. Everyone who has taken the shot has been sick. Six of my friends who have taken the shot went to the hospital. The rest are doing well and the two

> are on oxygen. They might have to have the oxygen for another six months then another year. When they come home, they have to carry the tank with them. I don't knock that but like I said, I haven't had it. I've been to my doctor, and they said you have no parts of it."

Black people are not denying the magnitude or existence of COVID-19, but they are questioning how necessary the vaccine is, weighing the fact that they have not contracted the virus themselves and, yet those in their social sphere who have received the vaccine have faced extreme side effects.

Conspiracy Theories

Also prominent in Black communities is the spread of conspiracy theories. Every participant admitted to hearing about conspiracy theories, ranging from those they found outlandish (Nia, a 45-year-old, dismisses this one: "I definitely have heard that they have a tracking device in it where they can track you") to some they accepted as true. However, the younger generation, with the exception of Chris, has a higher likelihood of rejecting conspiracy theories in favor of using reputable sources like the CDC or the WHO. This is examined through Michael a 20-year-old who, much to the chagrin of his parents, is recently vaccinated and, as a result, deals with his parents trying to dissuade him from getting a booster shot because of conspiracy related fears:

> Michael: "So, my mom and my aunt…I don't think they've gotten the vaccine yet because of like concerns on social media. Like those posters. She recently sent me one video about the booster shot that if you take it, you die in three years, and she's like, "'Please don't take the booster'" and all of this kind of stuff. Like I feel like that's still on

my mind, but I'm old enough to make decisions for myself…So, my family, I really don't think they want to take the vaccine as of now, especially with those videos she sends me. I'm sure she's not gonna take it."

In the beginning of the pandemic, an African student contracted COVID-19 and was cured by Chinese doctors (Vincent, 2020). After this, rumors quickly began to circulate online that Black people may be immune to the virus, i.e., the "Black Immunity Myth." Sydney, a 33-year-old, admits hearing about this conspiracy, but was more so confused by it rather than genuinely believing its existence:

"So, in, at first, they were saying, you know, oh, well, Black Americans aren't getting it or Blacks around the world are not getting it, then all of a sudden, we're the highest contracting the disease, especially Black men…It's all really confusing."

In contrast, older participants were susceptible to seriously buying into conspiracy theories, gaining their information through word of mouth (Ashley: "Everyone's only taking other answers from other people. Information is being passed on through gossip") or social media sites such as Facebook or WhatsApp group chats. It should be noted that Facebook, now known as Meta, was subpoenaed by the District Attorney General in June 2021 for allowing misinformation about the virus to be circulated throughout the site (Crist, 2021). Kayla had several conspiracies to unpack, but the main ones centered around the origins of the virus (which similar to what Crist ((2021)) found, stemmed from false posts on Facebook). She believes the virus was created intentionally by the former president to enact biological warfare since he could not limit the influx of immigrants by building a wall:

Kayla: "They said the scientists made it…My point of view, is what were you trying to

> do? Were you trying to kill us all and come back as zombies? If so, only one person can do this. Too much science fiction right there…The person who set this up, did it on purpose. The president wanted a wall. He wanted to go and fight; he wanted that. Instead of giving them a war, the guy did it. He gave them this virus. Should we all suffer from him trying to please the president? No. That's something he should have left alone. Have peace going with people."

In addition to speculating the outbreak of COVID-19 may be a punishment from God, "As long as people are not putting Him first, He's going to allow this to happen," Jada also talked about the virus being a form of population control to decrease the number of older people in the U.S.:

> Jada: "There's a crisis with social security. There's a crisis with Medicare and my take on it is that they cannot take the elderly people and put us all out on the firing line and kill us (laughs), so this is another way you can control the population."

She is correct in that there has documented evidence from both economists and the Treasury Department that the funds for Social Security and Medicare may be drained by 2033 due to both an increase in the aging population and the outbreak of the coronavirus (Franck, 2021). However, conspiracy theorists have deceptively manipulated this truth to use the Social Security and Medicare crisis to draw false connections to a hidden agenda about population control. As an older person who depends on these resources, it would make sense for Jada to buy into this falsehood and, consequently, feel distressed towards it.

For the younger generation, it is easy to discern accurate information from misinformation, but, as seen through the strong beliefs held by the older informants, they are more susceptible to falling prey to conspiracy theories, which can impede on vaccine uptake. The

government and public health officials have done an impressive job in attempting to limit the spread of false information by holding CEOs and other leaders accountable for their actions. It is imperative that these efforts are continued in order to protect the vulnerable.

Blame

Scapegoating

For some of the informants, their decision to remain unvaccinated or wait to see if they will get vaccinated has been met with a great deal of blame and ostracization from society. Kayla calls attention to this: "They try to–if you don't want to take it, they try to shove it down your throat. Now they're saying because we don't take it, we are causing the disease to spread." This is also reflected by Chris who shares his encounters with scapegoating through the media and healthcare providers:

> Chris: "They're making it seem like if you're not vaccinating, you are the problem…Healthcare workers are the ones that I know are looking at it from the deathbed side as well, like, "'I've seen people, you know, come in completely healthy, and then they're dead, like, the next day. You know, you haven't seen it, you don't know what's out there in this stuff is killing people.'" So once again, they're in line with the media, you're part of the problem if you're not vaccinated. You're quote unquote, "'one of them.'" So, they're pressuring you to be vaccinated."

Peer Pressure

Others have encountered peer pressure from their workplaces. As a military personnel, Jasmine describes this negatively impacting the livelihood of herself and others in a similar

situation. In summation, those in the military are forced to choose between receiving the vaccination or leaving their occupation:

> Jasmine: "At work, it's a big pressure because, basically, they're telling you if you don't have the shot, you can basically lose your means of supporting your family and yourself…I work for the -redacted- at my base, so in my case, I'm experiencing a lot of people being forced to get out of the military, whether they're already past the limit, so they can't retire or whether they're under the limit and they want to stay in, but they're getting out because they don't want to take the shot. And the military is basically saying, "'Okay, we'll see you later'" ...And my thing about it is I understand that, but you don't have enough data behind it. And so, the biggest peer pressure comes from work, even on the civilian side of -redacted-, because, you know, federal agencies, they're giving us a timeframe that we had to be vaccinated by as well."

The experiences of ostracization and peer pressure towards the unvaccinated are not unique to these participants, but, rather, represent a larger problem at hand. The media arbitrarily labels anyone who is unvaccinated as an "anti-vaxxer," "anti-masker," and/or a "super spreader." The current President reinforces this accusatory language. In his fall 2021 speech about the virus, he made statements like, "The unvaccinated overcrowd our hospitals, are overrunning the emergency rooms and intensive care units…" (Biden, 2021). The problem with this depiction of unvaccinated people is that it is incomplete. The anti-vaxxers of today mainly identify as white, right-wing Americans and protest almost all vaccines like the measles, mumps, and rubella and the flu shot (many correlating vaccines to autism), so the three vaccines to fight against COVID-19 are no exception. In terms of the virus outbreak, these same individuals are not taking the proper precautions and others are going as far as refusing to wear a mask in public spaces that

require them (Offit, 2015; McKelvey, 2020). However, the overwhelming majority of African Americans identify as Democrats and *have* been vaccinated against almost all required vaccines—they are only hesitant about the three COVID-19 vaccines. More importantly, they have been doing their part to take the proper precautions against COVID-19 and, in fact, not one interviewee has said otherwise when asked:

> Caleb, a Democrat: "I'm taking all the precautions of not getting COVID...nobody in my house ever caught COVID… [while in school] they [his children] use their masks every day and we tell them to keep it on unless they're eating lunch…"

> Jada, a Democrat: "If man says you can't come in here without a mask, I say ok. I'll put a mask on. Because I don't have any cows growing in my backyard with weeds for them to graze on to make my milk (laughs). So, I have to do what they say do."

> Jasmine, a Democrat: "...I've been following the guidelines and protocols. And I have not, thank God, contracted COVID."

> Kayla, a Democrat: "I put my mask on and I walk. If I'm by myself, I don't worry about my mask. If I go to the store and around others, I wear my mask. We need to stop it."

This aligns with past research which found that compared to their white counterparts, Black people were more likely to follow government sanctioned protocols to stop the spread of COVID-19 (Alobuia et al., 2020). The scapegoating and peer pressure surrounding these vaccines not only acts as a negative reinforcement, further pushing individuals away from the vaccine, but also forces African American communities to endure the false depiction of spreading the disease which is far from the truth. In reality, they are following protocols of

masking, social distancing, and, if necessary, quarantining.

These in-depth conversations with vaccine hesitant or previously vaccine hesitant African Americans reveal the multidimensional and nuanced nature of their concerns towards the three COVID-19 vaccines. Based on the four themes, African Americans feel low levels of safety towards the vaccine, high levels of mistrust towards the government and public health officials, high levels of community involvement and confidence, and experience moderate to high levels of blame and scapegoating because of their vaccine status. I believe the government and public health officials have done their best to rectify the misalignment between African Americans and vaccinations. But unfortunately, their best is not quite working as evidenced by the low vaccination rates among Black communities. Moving forward, it is important that these concerns are adequately addressed. In addition, *targeted* (not blanketed) measures have to be implemented in order to boost vaccination rates. Therefore, I have suggested several recommendations which will be further explored in the following section.

Recommendations

One of the final questions posed to informants was, "If you could speak directly to a government or public health official, what would you say?" Weighing these responses, I have proposed several recommendations in hopes they can be implemented at the micro- or macro-level to decrease vaccine fears in Black communities. An overview of the interventions is presented in **Table 2** and explored more in-depth afterwards.

Table 2. Interventions

1. *Government and Policy Leaders Must Address Medical Racism* Anthony: "I think at a general, structural level, just recognizing that the racist history of medicine, healthcare and science in general, Black people have, unfortunately, been the victims of when it comes to science." **2. *Increase Black Representation Promoting the Vaccine on National Platforms*** Sydney: "For me, fortunately enough, one of my cousins, she is in healthcare, and she had recently just convinced me to change all of my primary doctors to Black women. So, when I voiced my concerns with them, they made me feel at ease, knowing that they also had the same concerns, even though they were in the medical profession."	**3. *Create Direct Dialogue between African Americans and Government and Policy Leaders*** Caleb: "Go into our communities and reach out…Just come into our neighborhood and teach us these things. We want to know. Come to our town meetings and let us ask questions and we can go from there…Yeah, both sides have to communicate. And if there's something that we're missing, I want to know…" **4. *Immediately End Scapegoating towards Black Communities*** Chris: "They're making it seem like if you're not vaccinating, you are the problem."

First, the government and public health officials must recognize the grotesque history of medical racism (and its ongoing implications of racial health disparities). Many of the participants, like Anthony in **Table 2**, drew connections to the COVID-19 vaccines and past instances of medical racism. These responses demonstrate that the skepticism and distrust

towards medical institutions is very much real and, furthermore, serves as a barrier to vaccination. By choosing not to address this history, it can make African Americans feel as though these instances of racial maltreatment are being silenced or, worse, perceived as insignificant to these authoritative figures. Therefore, this dark history and its present-day implications need to be publicly acknowledged, publicly accounted for, and publicly apologized for. Although this will not be a quintessential solution, it is, as Anthony points out, "the first step in regaining [lost] trust in the Black community" which may, in turn, make them feel more comfortable with the COVID-19 vaccines and, further, mitigate one of the concerns they have about it.

Second, there has to be more Black representation among individuals promoting the vaccine on national platforms, i.e., White House correspondences, social media websites and on local television stations. This will help make African Americans feel at ease with the vaccines and healthcare in general, especially because as corroborated by statements from the informants, Black people have more confidence within each other rather than in institutions. For instance, after being a staunch dissenter of the vaccines, in **Table 2**, Sydney spoke about her decision to get vaccinated which was influenced by her interaction with her asymptomatic students and her positive encounters with speaking to a doctor who looked like her. These candid conversations with African American healthcare providers are what gave Sydney the motivation and confidence to finally receive a COVID-19 vaccine.

This mirrors the community mobilization that should be studied and replicated from Black locals in Mississippi. Because of vaccination pop up centers around schools, places of work and churches, for example, community leaders were able to increase the vaccination rate among Black Mississippians. As of October 2021, 43% of African Americans, at least 18 years

old or older, have received both doses of one of the vaccines. In fact, as of March 2022, African Americans are the second highest fully vaccinated group at 50% in Mississippi (Brown, 2021; 2022). The secret to their success? As quoted from Dr. Crystal Cook, one of the vaccine campaign leaders in Jefferson County, Mississippi, “hard earned trust” (Judin, 2021). Community leaders like Cook always ensured Black neighborhoods had low-cost and accessible healthcare services. So, with that deep trust cultivated over time combined with readily available vaccines from people who looked like them, unvaccinated African Americans willingly received an immunization—a vastly different reaction than the national trend of vaccine hesitancy. For other individuals, specifically older African Americans, who are more religiously inclined, authoritative figures can use prominent Christian leaders in the Black community such as pastors to promote the vaccine. Based on Sydney’s decision to get vaccinated in part because of her conversation with her Black doctor and Mississippi’s strong community efforts from Black leadership, it matters who the message of vaccination comes from.

Third, there has to be direct, firsthand dialogue between African Americans and policy leaders. Several participants felt that the government, while a step in a positive direction from the previous administration, was not addressing the concerns they held about the vaccine.

> Chris affirms this sharing, “…The government hasn’t addressed those from my point of view. It seems like it’s just more of a mortality issue. So, it’s like, “‘people are dying, people are dying, or so you need to get vaccinated.’” I haven’t ever heard them say, “‘Oh, well, I guess I will address the issues that people who aren’t vaccinated have.”

Therefore, these leaders should go directly into predominately Black spaces (e.g., neighborhoods, grocery stores) and hold some sort of meeting. This does not mean that these

leaders should become (1) paternalistic with one-sided demands of forcing vaccination and turning to scapegoating if that fails or (2) try to use health education tactics. After all, based off the data from this study and research from the literature review, Black people who are or were vaccine hesitant are, for the most part, very informed about the virus. Instead, it should be held in a conversational format where Black people can candidly express their anxieties about the vaccine without cajolement to receive the clarification they need to make a decision. Interviewees like Caleb, in **Table 2**, and Chris express their eagerness and willingness to hold such a conversation:

> Chris: "The country spends too much money on whatever, to just like, say "'you need to do something, because we said, so.'" You guys have the resources to explain more. …Talk to us. I think we deserve that now. We're not the same people who we were 30 years ago when we didn't have the resources to get more information. But now we do."

Obviously, this cannot be done within every African American neighborhood in the U.S., but it would be worthwhile if it were done in pockets of the U.S. with extremely low vaccination rates, starting with cities in the South. This experience will make them feel as though the government and public health officials care about their well-being and are taking their concerns seriously. Taking time out of their day to have these direct conversations with these communities, without the middleman of television stations or the CDC website, will ultimately propel African Americans to close that gap to take the final step from being vaccine hesitant to fully vaccinated.

Finally, it is imperative that the blame and scapegoating towards unvaccinated African Americans ceases as the reprimand is being turned to the wrong group of people. Based on the

interviews and past data (Alobuia et al., 2020), it has been confirmed that Black people are following COVID-19 protocols by socially distancing, masking, washing hands in addition to taking the other necessary precautions. In fact, some of them are actively going as far as to ask for alternative ways to maintain their health amid the virus outbreak outside of the vaccines, demonstrating an intentional desire to maintain their health:

> Jasmine: "…what other things can we do to combat, to battle to make sure that we're healthy other than a vaccine? You know, just like with the flu…what things can we do to build up our immune system? Of course, you know, exercise, be healthy, but what medicine should we use? Should we take some zinc? …what else can we do other than just pushing the vaccine?"

> Nia: "So maybe if they educated people about the importance of keeping their immune system built up, then it would help…and instead of basically just putting it out there and making people do it, just help them understand."

Contrary to what the media portrays, African Americans do recognize the virus as a serious devastation and are taking the necessary precautions even if they are not vaccinated. It is the people who are against vaccines in general who are making this pandemic more complicated by not following COVID-19 protocols. So, the false accusations must end as they add another burden of unnecessary and, more importantly, unfounded stigmatization.

I maintain that, if applied properly, these recommendations will be useful in increasing the vaccination rates among African Americans.

Limitations and Future Research

There are several limitations. To begin with, some of the participants attempted to pull me into the conversation, trying to gauge my own knowledge about the vaccines or trying to gauge my reactions to some of their responses. For example, at one point, I grew quiet to jot down notes while Kayla was talking about conspiracy theories, causing her to comment, “People think I am crazy” because my silence was interpreted as shock. Therefore, while I feel the informants were honest and disclosed more than I previously expected, it is still possible that some may have engaged in social desirability bias. Also, only ten participants were interviewed which means that the findings from this study may not be generalizable.

In general, the majority of African Americans identify as Christians (Masci et al., 2018) and some participants described trusting in God to help them through the pandemic as opposed to receiving the vaccine (Kayla, Jada). Consequently, future research should study how sermons from pastors and other church leaders impact the way African Americans perceive the COVID-19 vaccines. Are these messages serving to encourage or delay vaccine uptake? How so? This is especially important because Nia cites one of her hesitations about receiving a vaccine to be avoiding disappointment from fellow church members (“If you got vaccinated, it made it seem like you weren’t trusting in the Lord”). Perhaps, this mentality is being propagated by some church leaders which delays receiving a COVID-19 vaccination.

I also suggest that future research is more intentional in recruiting and interviewing African Americans from a lower socioeconomic status to gauge their perspectives on the vaccines and how these perspectives inhibit vaccinations. Even though I do not have data on their income to confirm this, I speculate that most African Americans from this study comprise

of the middle class. This is because 90% (n=9) have access to private or public health insurance, all participants (n=10) have a degree higher than a high school diploma or GED, and, of the 70% (n=7) who are employed, 40% (n=4) have white collar occupations. By intentionally studying only low-income African Americans, it may reveal different vaccine related concerns I may have missed in the original data set.

Regardless of what the research question entails, it is important that an individual's background, specifically their social determinants of health are considered. Even though Black people share the same origin, it does not mean that they all have the same concerns. Similar to what is expressed in the study, some concerns overlap while others are more unique to that individual or specific age cohort. Understanding someone's social determinants of health can help policy leaders take the correct approach.

Conclusion

The purpose of this study is to understand how an individual's social determinants of health influences his or her perspective towards the vaccines. In the literature review, the origins of medical maltreatment and its racialized undertones is presented. In summation, medical racism took its roots in the forced slave trade before being reinforced through pseudoscientists like Cartwright. Henceforth, African Americans continue to be regarded by many healthcare providers today with prejudice (e.g., the false notion that Black people can endure more pain than others), contempt (e.g., the trivialization of Black pain), or outright violence. Up until 2013, about 1,400 involuntary sterilizations occurred in California's prisons, targeting marginalized women. One such example is Kelli Dillon, a Black woman who was sterilized against her will at only 24 years old (Jindia, 2020). This legacy of medical racism provides insight into

understanding why some African Americans are hesitant to engage with healthcare, and, more specifically, are hesitant to receive a COVID-19 vaccine.

The results section is framed by the social determinants of health and is split into two parts. Part one provides basic demographic data about the informants, leading into part two which acts as a more detailed examination of pandemic-related challenges and added burdens for African Americans. For example, Caleb describes dealing with financial problems and navigating virtual learning which contributed to poor coping habits, "…it took a toll on my weight and eating because all I want to do at home is snack." Applying the social determinants of health is used to understand how their background reflects their stance towards the vaccines.

During the discussion, additional literature is coupled with firsthand accounts from African Americans for in-depth analysis. Overall, this qualitative study demonstrates that the social determinants of health can and does influence unvaccinated Black perspectives towards the immunizations and, in turn, vaccine hesitancy. Based off of the four themes, African Americans feel as though the vaccines are unsafe and are not an effective way to combat COVID-19, especially for those who have comorbidities. Furthermore, the language used by interviewees shows that they, justifiably, mistrust medical institutions because of contradictory protocols and past instances of medical racism. Although these communities display high levels of community engagement which acts as a pillar of social support, false information like conspiracy theories or gossip from peers may impede vaccine uptake. Finally, unfounded blame serves no purpose other than to stigmatize and heighten the degree of hostility these communities already must endure because of their race and push them further away from the vaccine.

Despite the additional hardships African Americans have endured because of the pandemic, their experiences were not completely negative. In fact, participants explained some positive occurrences inadvertently caused from the virus outbreak. For example, it has revealed the continued need for reform and increased racial solidarity:

> Ashley explains: "I believe that, in many ways, it built us up. In many ways, it made us stronger. It actually exposed us to more, if you notice, seeing more of the beauty of us now, whether it's TV…you're seeing more respect. You're seeing us as people taking pride in ourselves. So, in many ways, it was like, oh, thank you. I'm glad this took place. I'm glad that this is teaching us to stand together better and know that we have a voice."

In addition, it has created constructive conversations about mental health in Black communities. For the older generation especially, they turn to religion to cope with their problems. Therefore, when their children need guidance on dealing with mental disorders like anxiety or depression, parents are quick to dismiss them, usually from a lack of understanding on how to deal with it. With stay-at-home orders, parents, for the first time, were forced to recognize that their child may need help. Calling attention to this phenomenon, Sydney elaborates:

> "Being a millennial myself, I think we have just been groomed for years to push through to pray about it. So, you know, what happens in the house, stays in the house…And now we're in the house, so we can't escape these situations. You don't want me to talk to you, I can't go to church and talk to my pastor, so I'm gonna schedule an appointment with this therapist, and we'll figure it out. I think a lot more millennials during the pandemic suffered out there because of the just, you know, the isolation, but then it turned into,

> 'hey, you have experienced trauma in your life, and we need to unpack that.' So, it was a good thing…"

To address vaccine-related concerns, I propose several strategies to increase vaccine uptake and erode on the rise of health disparities brought on by COVID-19: (1) acknowledge and apologize for medical racism, (2) utilize African American representation in the promotion of vaccines, (3) have public health officials go into Black neighborhoods to dialogue about the vaccines, and (4) end the unwarranted scapegoating towards unvaccinated Black people. These recommendations are especially relevant now that the Pfizer-BioNTech vaccine has been authorized for children between the ages of 5 and 17 years old. As Ashley, a married mother with three children points out, parents act as a representation of their family. In other words, if parents choose to remain unvaccinated, their children will have no choice but to follow suit. This is confirmed by parents in the study:

> Caleb, a married father of two, said he is "60%" on board with potentially vaccinating his children but also expressed hesitation, "But I was thinking about, you know, do I give them the vaccine and the flu shot? That is a lot…that's a double dose. That can put a child down. My kids are 7. They're twins. So, it's, it's still on the ropes."

> Chris, a single father of one: "I have one child, four years old. Honestly, I would say no. I wouldn't recommend them to get it…like something is altering how your body responds to something…Is it going to alter these kids when they grow? When their hormones change? Like, I don't know how that affects a child…So, it's kind of really a hit or miss for me. It's a miss for me."

Jada, a divorced mother of two young adults, also reinforces this: “...They are not doing it either. They feel the same way I feel about it. They’re not doing it. No. They aren’t.”

With the recent introduction of coronavirus variants like the Delta and Omicron, promising to be more infectious than the former in addition to the new availability of vaccines for children, it is important now, more than ever, that government and policy leaders create targeted interventions for unvaccinated Black communities to mitigate not only present-day health disparities, but also those for the next generation.

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Appendix

Interview Questions

- Tell me a little bit about yourself.
- If at all, how has your life changed pre-pandemic to now as a result of COVID-19?
    - Has your mental health been impacted?
- Do you see COVID-19 as serious?
- What are your main concerns about the vaccine? List all—there is no judgement.
- Where do your concerns come from?
- Do you think the government has addressed these issues? Why or why not?
- Do you think healthcare workers have taken into account your background when speaking with you or recommending the vaccine?
- If you could speak directly to a government or public health official, what would you say?
- If you are a parent, do you recommend it to your children?
- Is there anything else you would like to add that has not been asked?