


Exploring COVID-19 Vaccine Hesitancy Amongst Black Americans: Contributing Factors and Motivators

American Journal of Health Promotion
2022, Vol. 36(8) 1304–1315
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DOI: 10.1177/08901171221099270
journals.sagepub.com/home/ahp


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Abstract

Purpose: To determine reasons for hesitancy towards COVID-19 vaccination and motivators to increase COVID-19 vaccine uptake among Black Americans.

Design: Mixed-methods.

Setting: Individual interviews in March-April 2021

Participants: Black adults (20-79 years) who attended a church in Boston, MA and identified as “vaccine hesitant” (n = 18).

Methods: Individual in-depth Zoom interviews to elicit participant views on vaccines in general, specific reasons for COVID-19 vaccine hesitancy, and trusted sources of information. Participants were also asked about possible motivators that could increase COVID-19 vaccine uptake. Transcripts were de-identified and analyzed for major themes using an inductive approach.

Results: Analysis included 18 complete interviews. Lack of trust in the government, healthcare, or pharmaceutical companies (n = 18), rushed development (n = 14), fear of side effects (n = 12), history of medical mistreatment (n = 12), and a perception of low risk of disease (n = 9) were the top-cited reasons for COVID-19 vaccine hesitancy. Motivators likely to increase COVID-19 vaccine uptake included more data (n = 17), friends and family getting vaccinated (not celebrities) (n = 11), and increased opportunities that come along with being vaccinated (n = 8).

Conclusion: There were many reasons for COVID-19 vaccine hesitancy, as reported by participants who were all Black Americans in the Boston area. The public health challenge of increasing vaccine uptake in the Black community is nuanced and intervention efforts may be more successful if delivered by trusted members of the community and tailored to the needs of individuals.

Keywords

COVID-19, vaccine hesitancy, black Americans, United States

Purpose/Introduction

Status of COVID-19 and Vaccination

After a year of unthinkable death, illness, and economic, and social upheaval from a once in a century pandemic, the scientific community produced several safe and effective vaccinations at a historically rapid pace. This brought hope to many and has helped to contain the spread of COVID-19 in the US. As of March 24, 2022, there have been over 79 million cases of COVID-19 nationwide and over 973,000 deaths, with Black Americans accounting for a disproportionate burden.¹ COVID-19 will remain a serious public health threat until herd immunity is reached, meaning that enough people are

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protected against disease to prevent sustained transmission among the susceptible population. Originally, the herd immunity threshold for COVID-19 was estimated to be around 67% with the assumption that each person infected will infect an average of 3 other individuals throughout the course of disease.² With the increasing transmission rates of arising variants of concerns (VOCs), the herd immunity threshold is difficult to estimate and likely much higher than originally thought. For instance, the recent rise of the highly contagious Omicron variant and other potential VOCs have created new challenges in containing the spread of COVID-19. Research and interventions related to COVID-19 must continue to adapt to reflect the dynamic nature of the pandemic.³

The decline in public trust around vaccination in recent years is a global issue leading to decreasing vaccination rates related to a number of vaccines. Further complicating the issue of vaccine hesitancy are the well-documented racial disparities in general vaccine acceptance, which results in marginalized groups facing higher risk of morbidity and mortality from various infections.⁴⁻⁶ The term “vaccine hesitancy” to describe this phenomenon has been heavily used in the media, news, as well as scientific literature. This encompasses reasons for hesitancy ranging from conspiracy theories to concerns about safety and side effects. Those labeled as “vaccine hesitant” have been demonized by a large share of society, with limited understanding of why individuals are resistant to vaccination.^{7,8} For this study, participants were selected who self-identify as “vaccine hesitant.” The World Health Organization’s (WHO) defines “vaccine hesitancy,” as the “delay in acceptance or refusal of vaccines despite availability of vaccination services.”⁹ For this study, participants were selected who self-identify as “vaccine hesitant,” thus those included are only a subset of the population who are resistant to vaccination and should be considered a starting point in understanding the complex and heterogeneous issue of vaccine hesitancy.

The COVID-19 vaccine is a critical tool in the fight against this pandemic and vaccine hesitancy is a major threat to global health. It is listed as a top 10 priority by the WHO.⁸ Vaccines significantly reduce morbidity and mortality of disease and are much more cost-effective and available than treatment, making them an extremely valuable tool to combat the spread of infectious disease. Strategizing how to increase COVID-19 vaccine acceptance must therefore be a national priority.^{10,11} In order for health experts and public figures to develop effective communication and interventions surrounding the COVID-19 vaccine, they must first understand the target audience and what motivates them. Communication strategies and vaccine campaigns must be tailored to attend to the many different characteristics of those hesitant to vaccinate.^{6,8,12} The issue of vaccine resistance is not unique to COVID-19 and past literature shows that vaccine confidence depends on trust in vaccines themselves and the systems that produced them, including pharmaceutical companies, government agencies, and the healthcare system among others. Vaccine mistrust is

quite complicated to address due to its heterogeneous and constantly evolving nature.^{4,12,13}

Racial Disparities

Past literature shows that Black Americans report disproportionate rates of general vaccine hesitancy, leaving this community more susceptible to various diseases.^{4,5,14,15} Trust in institutions that contribute to influenza immunization, for example, is markedly different by race, with Black people reporting lower trust in the flu vaccine compared with White people across various measures.^{4,15} Compared with White people, Black people report lower trust in the government, lower trust in the healthcare system, and medical mistrust resulting from years of systemic racism contributing to a lack of vaccine confidence, in addition to reporting more cost concerns and barriers to access.¹⁴⁻¹⁷ Historical events that contribute to medical mistrust are often cited as a reason for Black resistance to vaccination and clinical trial participation. While entirely valid, acknowledging only historic reasons for distrust may oversimplify hesitancy and neglect a host of other reasons why this population does not accept COVID-19 vaccination.^{18,19} Special attention to groups with increased rates of vaccine hesitancy is necessary to inform strategies and policies that are intended to increase immunization.²⁰

There exists a large racial divide in COVID-19 vaccine hesitancy. From a health justice standpoint, Black communities must be a focus for public health communication and intervention. Despite the wealth of literature surrounding vaccine hesitancy, there is limited data available to offer guidance on how to address COVID-19 vaccine hesitancy among marginalized groups, who have faced a higher burden of morbidity and mortality due to COVID-19.^{6,16,17,21-23} The extent of racial disparities related to COVID-19 varies by state, thus different regions may require different intervention strategies.²² Given the complexity and range of issues contributing to vaccine hesitancy as well as the differences in health inequity between regions within this country, it makes sense to explore beliefs and attitudes in specific locations and communities. Our study thus focuses on a particular population of Black individuals in Boston to gain a deeper understanding of factors that may motivate vaccine hesitancy and acceptance within this community. The results of this study may inform future public health action and allow for tailored approaches to serve the target community.

Approach

We conducted semi-structured in-depth interviews to explore vaccine hesitancy amongst Black Americans. We provided participants with a consent form prior to their interview. Interviewers were of similar ethnic grouping as interviewees and confirmed receipt and understanding of the consent form with participants before proceeding with the interviews.

We created an interview guide consisting of open-ended questions to provide a framework for in-depth interviews ([Supplementary Materials](#)). An initial draft of interview questions was created based on a survey of Massachusetts residents on COVID-19 vaccine issues done by the MassINC Polling Group in November 2020 in partnership with the Museum of Science and Massachusetts League of Community Health Centers.²⁴ We piloted the interview guide with five Black American volunteers who had expressed hesitancy in receiving the COVID-19 vaccine and made edits to the guide based on feedback from these interviews. These pilot interviews were not included in analysis.

Participants

Participants consisted of Black American volunteers aged 18 years or older who had expressed hesitancy around receiving the COVID-19 vaccine. We recruited participants from the Bethel AME Church in Boston, MA via an email sent by a local religious leader. The recruitment email asked for volunteers who were hesitant to receive the COVID-19 vaccine to identify themselves to the research group if they would like to participate in the study.

Twenty volunteers initially responded to the recruitment email. Of the original 20 volunteers, two were untrackable and could not be interviewed. Therefore, we report findings for the remaining 18 participants. We provided participants with \$30 gift cards after completion of interviews.

Methods

Data Collection

We conducted individual in-depth interviews lasting approximately 30 minutes over Zoom between March 2021 and April 2021. Interviews were conducted by Black undergraduate, pre-medical, and medical students trained in interviewing by an expert in qualitative research.

We used an interview guide to elicit participant views on vaccines in general, specific reasons for COVID-19 vaccine hesitancy, trusted media sources, and possible interventions that could increase COVID-19 vaccine uptake.

Transcriptions were auto-created by Zoom and reviewed for accuracy by the respective interviewer. Interview transcriptions were subsequently de-identified and analyzed for major themes.

Data Analysis

We conducted a thematic analysis of interviews using an inductive approach.²⁵ We began by reviewing four interviews to create a preliminary guide of themes under three major categories: “Reasons for COVID-19 vaccine hesitancy,” “Media sources,” and “Motivators to increase COVID-19 vaccine uptake.” With this preliminary list of codes, all

in-depth interviews were then coded by a primary coder and subsequently reviewed by a second coder using ATLAS.ti Web (v2.4.0-2021-07-08, Chicago, IL: cleverbridge, Inc). The coding team met regularly to reconcile differences in code application and to identify new themes as they emerged from the interviews. After coding of all interviews was complete, we met to review the quantitative data of code applications and select representative quotes to best illustrate coded themes.

Results

[Table 1](#) provides demographic information on the 18 individuals interviewed. 72% of participants identified as female and 28% identified as male.

From interviews with these participants, we identified sub-themes within each of the three aforementioned emergent categories: “Reasons for COVID-19 vaccine hesitancy,” “Sources of information,” and “Motivators to increase COVID-19 vaccine uptake” to analyze responses (for definitions of sub-themes, see [Table 2](#)).

Reasons for COVID-19 Vaccine Hesitancy

Participants described many different reasons for their COVID-19 vaccine hesitancy. Motivations for justified skepticism spanned topics such as personal experience with medical care, information distribution, and confidence in various institutions (See [Figure 1](#)). The most common concern (cited by all eighteen participants) was lack of trust in government, specifically, distrust regarding information dissemination and doubt in our government’s approach to healthcare.

The second most common concern, cited by fourteen participants, was the perception that the development of the Covid-19 vaccines was rushed. While many expressed inherent trust in the effectiveness of vaccines in general, the speed at which the vaccine was created suggested that there could be safety implications. As mentioned by one participant: “It’s not that I don’t believe in vaccines, it’s just that they put this together in a year.”

Table 1. Participant Demographics.

	n (%)
Gender	
Male	5 (28)
Female	13 (72)
Age group	
20-29	1 (6)
30-39	3 (17)
40-49	6 (33)
50-59	2 (11)
60-69	5 (28)
70-79	1 (6)

Note: percentages above may not add to 100 due to rounding.

Table 2. Description of sub-themes.

Theme	Subtheme	Definition
Reasons for COVID-19 vaccine hesitancy	Fear of needles	Participant reports a fear of needles
	Fear of side effects	Participant reports a fear of side effects of the COVID-19 vaccine (eg, fever, rash, long-term effects)
	Feels not at risk	Participants reports not feeling at risk for COVID-19
	General vaccine hesitancy	Participant reports hesitancy of all vaccines, not limited to COVID-19 vaccine
	Guinea pigs	Participant reports fear of being treated as a “Guinea pig” or being the first ones to test the COVID-19 vaccine
	History of medical mistreatment	Participant reports a history of medical mistreatment against black individuals in America
	Lack of accessible information	Participant reports lack of access to available information about the COVID-19 vaccine
	Lack of POC involved	Participants reports lack of people of color involved in the vaccine production and testing process
	Lack of transparency	Participant reports lack of transparency in the vaccine production process
	Lack of trust in government	Participant reports lack of trust in the US government
	Lack of trust in healthcare	Participant reports lack of trust in the US healthcare system, at large
	Lack of trust in pharmaceutical companies	Participant reports lack of trust in pharmaceutical companies involved in the production of the COVID-19 vaccine
	Personal experience of medical mistreatment	Participant reports a personal experience of medical mistreatment as cause for hesitancy
	Personal/past medical history	Participant reports past experience with vaccines or a medical condition that makes the participant more wary of vaccination
	Rushed development	Participant reports concerns related to the accelerated development and short timeline of the COVID-19 vaccine
Information sources	Unsettling feeling	Participant reports an unsettling feeling or bad energy regarding the COVID-19 vaccine
	Other	Participant reports other reasons not listed
	Church	Participant reports church leadership as source of COVID-19 information
	Family/friends	Participant reports family and friends as source of COVID-19 information
	News	Participant reports news channels as source of COVID-19 information
	Physician	Participant reports personal physician as source of COVID-19 information
	Public figures	Participant reports public figure (eg, Dr Anthony Fauci) as source of COVID-19 information
	Research	Participant reports personal research (eg, Google searches) as source of COVID-19 information
	Social media	Participant reports social media (eg, Facebook) as source of COVID-19 information
	State website/government	Participant reports state website or other governmental sources (eg, CDC) as source of COVID-19 information
Motivators to increase COVID-19 vaccine uptake	Other	Participant reports other source of COVID-19 information
	Access to information	Participant reports that increased access to information (eg, populations tested, side effects) regarding the COVID-19 vaccine would decrease hesitancy
	Due diligence	Participant reports that doing their own research regarding the COVID-19 vaccine would decrease hesitancy
	Family and friends	Participant reports seeing more family/friends receive the COVID-19 vaccine would decrease hesitancy
	Medical advice	Participant reports that medical advice from their physicians regarding COVID-19 vaccine would decrease hesitancy
	Opportunities	Participant reports that COVID-19 vaccine requirements to pursue opportunities (eg, travel, employment) would decrease hesitancy

(continued)

Table 2. (continued)

Theme	Subtheme	Definition
	Protect family, friends, and community	Participant reports receiving COVID-19 vaccine to protect their family, friends, or community would decrease hesitancy
	Time and more data	Participant reports that more time and data regarding the COVID-19 vaccine would decrease hesitancy
	Other	Participant reports other intervention to decrease hesitancy

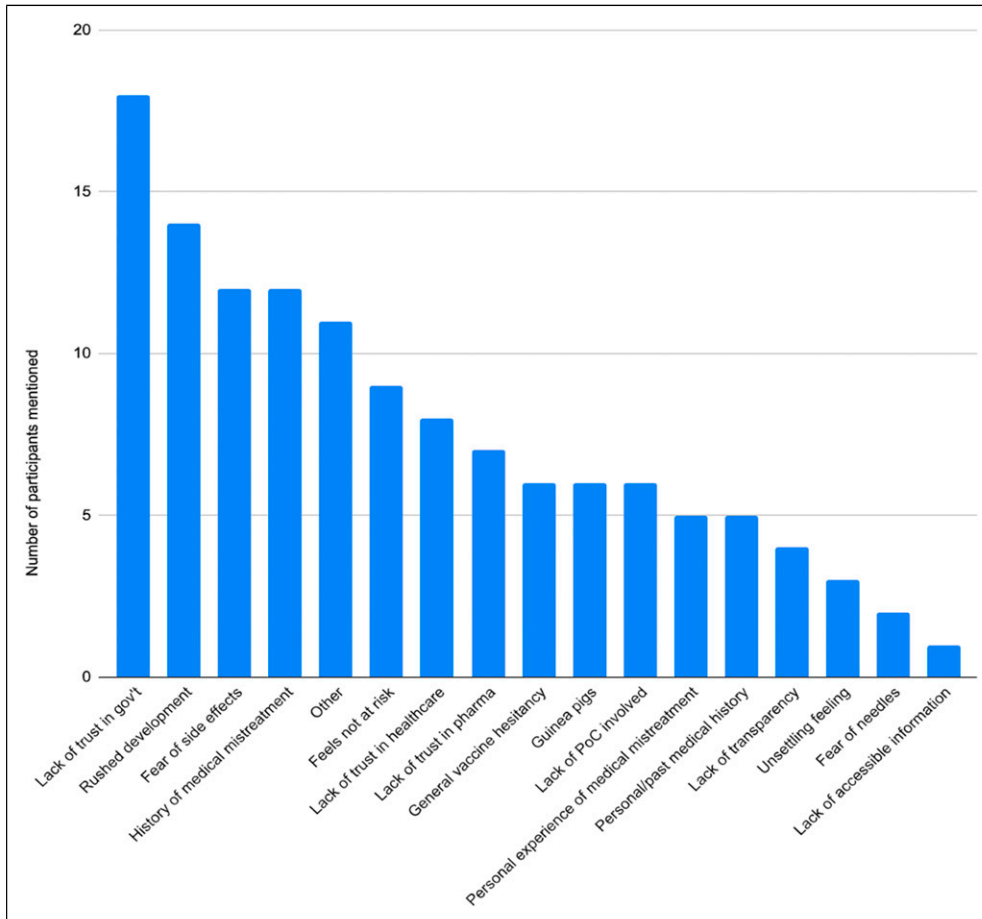


Figure 1. Reasons for COVID-19 Vaccine Hesitancy; Number of participants who mentioned a specific reason for COVID-19 vaccine hesitancy.

Another common concern, cited by twelve participants, was fear of side effects. Both short term (immediate) and long-term manifestations of physical impediments as a result of the vaccination were mentioned. For some participants, fear of side effects was caused by the lack of clarity regarding how pre-existing conditions that they have may be affected by the vaccines. One participant noted: *“I have an issue with the fact that there are people who have valid questions that are not being answered. I’m one of those people, I have a preexisting condition...”*

Another common issue brought up by 12 participants, is the history of medical mistreatment of Black Americans. For many, the historical links between vaccination and mistreatment of Black Americans has led many to question how much those distributing the vaccines care about the Black community. Apart from commonly cited historical events like the U.S. Public Health Service Untreated Syphilis Study, participants noted that their distrust came from continued modern-day mistreatment of African Americans. For instance, one participant noted:

“So not just the Tuskegee experiment; not just Flint Michigan because those folks got no clean water, not just New Orleans ninth ward who’s still dealing with Hurricane Katrina, like these things have not been addressed. And so, here we are again, you want to add, you know, “oh, black and brown communities, you guys need to get the vaccine.” You haven’t addressed the harm from years ago!”

Other reasons cited for hesitancy were participants feeling not at risk, general lack of trust in healthcare, lack of trust in pharmaceutical companies, general vaccine hesitancy, lack of involvement of people of color in the vaccination process, personal experience of medical mistreatment, and past medical history. Illustrative quotes for each of the four most common factors are provided in [Table 3](#).

Sources of Information

Study participants most frequently referenced their physician or a physician that they know as a primary source of information regarding the COVID-19 pandemic, with seventeen participants mentioning this. Twelve participants stated that they receive information about COVID-19 from the news outlets, both on television and in newspapers. Seven study participants said that they receive COVID-19 information from public figures, research, and their state website. Six study participants reported gathering their information from church, or from other sources including virtual town halls and hospital websites such as the Mayo Clinic. Four participants received most of COVID-19 information from family members and friends, and three participants utilized social media as a

Table 3. Reasons for COVID-19 Vaccine Hesitancy – Quotes from Participants.

Lack of trust in the Government	<p>“I know that the FDA ... in General, our health programs are not holistic. They’re not intended to heal – they’re intended to perpetuate pharmaceutical companies and the massive amounts of money that they bring not only for themselves and profit, but for the Government. Right, so it’s really hard to divorce, the two from each other, even though they do act as separate entities, they’re very much intertwined.”</p> <p>“...the whole COVID situation, just because of who was in office and how information was being disseminated and the misinformation that people choose to believe and all these things, you know, it was just a weird time. Unfortunately because of all the misinformation, I can’t say that it didn’t affect my trust in those Government organizations, you know. It certainly didn’t help. I Guess it was good that someone like Dr Fauci continued to be on TV with his consistent message no matter what the media was reporting, so that did help because it was like alright this message is consistent...”</p>
Rushed development	<p>“I mean I, because I, I have not studied medicine, it’s really difficult to sort of read through the mechanics of it and and really grasp that, and I kind of loosely read through and I know that some people have talked about how, inherently the vaccine, the way that it was created is different than previous vaccinations. And I think that stands out to me because I might feel a little less apprehension if I knew that this vaccine was created the way that other vaccines have been created... I Would feel a little bit more comfort, knowing that there is a lengthy history of this type of vaccination, the fact that it’s a new type of vaccination does not sit well with me because of how rushed it was, right. We won’t really know what the effects are of this until further down the road.”</p> <p>“It’s not that I don’t believe in vaccines, it’s just that they put this together in a year.”</p>
Fear of side effects	<p>“We don’t know the long-term effects, I mean you feel great now at 35/36, and all of a sudden, at 62 they’re like “oh well, we’ve now found out, after 10 years, people are getting lumps on their, you know breasts, or something like that. You don’t know the long term effects.”</p> <p>“I have an issue with the fact that there are people who have valid questions that are not being answered. I’m one of those people, I have a preexisting condition, an autoimmune condition, and for the longest time they were saying that there’s no correlation between neuromyelitis optica (NMO) and vaccines. And then in 2018, doctors at Mass general hospital, which is right down the street, Michael Levy who is one of the top experts in the world in neurology is saying “oh, there is a correlation.” and they’re saying, “well, it’s not that vaccines cause NMO. It’s that if you already have NMO and it hasn’t manifested yet, if you get a vaccine, it could trigger it.” That’s not what they were just saying.”</p>
History of medical mistreatment	<p>“We can, we can point to recent issues. We just read what, a couple months ago, with Serena Williams, who had a complaint against her, you know, she’s saying ‘I got stomach pains’ and y’all talking about ‘your good’ – no! Right, right. So this is recent stuff that’s coming out about how black and brown communities are being impacted disproportionately. So not just the Tuskegee experiment; not just Flint Michigan because those folks got no clean water, not just new Orleans ninth ward who’s still dealing with Hurricane Katrina, like these things have not been addressed. And so, here we are again, you want to add, you know, “oh, black and brown communities, you guys need to get the vaccine.” you haven’t addressed the harm from years ago!”</p> <p>“I think that’s more just like a general knowing the history of medical testing in the United States, specifically as it relates to people of color and I understand that this is slightly different because not just people of color being vaccinated - it’s all people being vaccinated. But to me, the history of vaccination and malpractice in the United States, it just speaks about the level of lack of care.”</p>

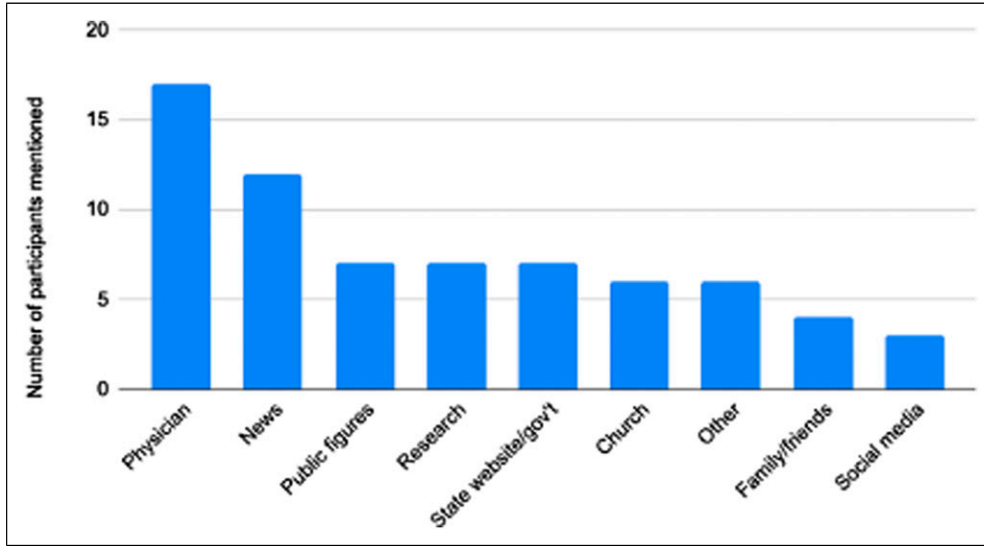


Figure 2. Sources of Information regarding COVID-19 Vaccine; Number of participants who mentioned a specific source of information regarding the COVID-19 vaccine.

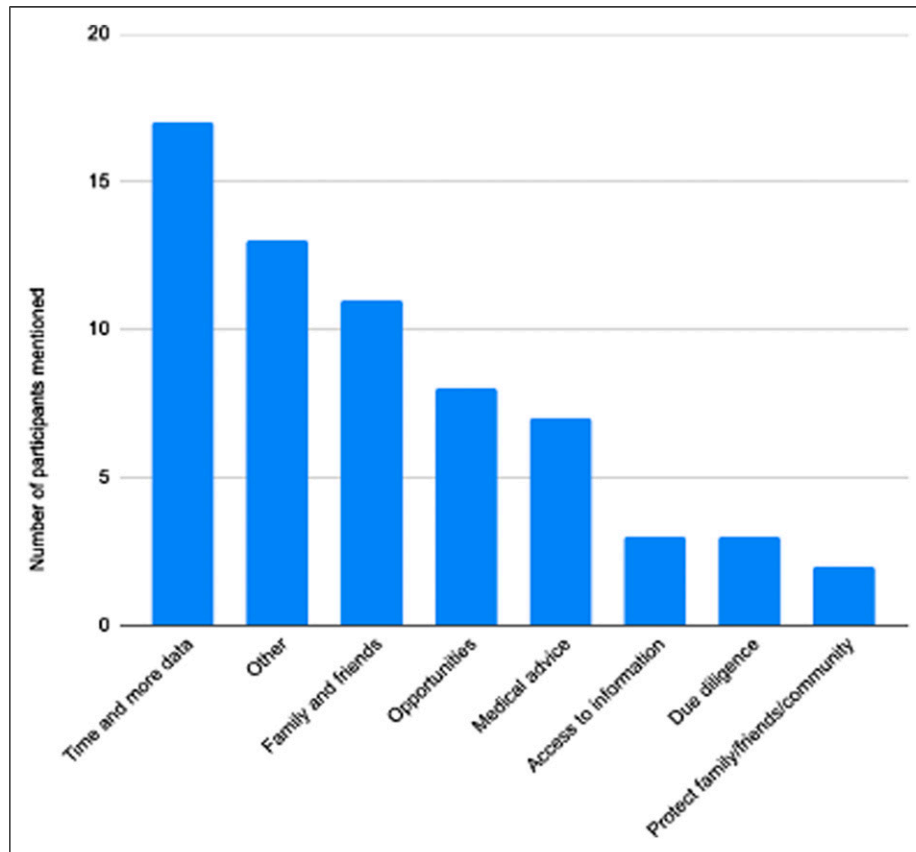


Figure 3. Motivators to Increase COVID-19 Vaccine Uptake; Number of participants who mentioned a motivator to increase COVID-19 vaccine uptake.

resource for information about the COVID-19 pandemic. This data is visualized below (Figure 2).

Motivators to Increase COVID-19 Vaccine Uptake

An important part of this study was asking vaccine hesitant participants what might make them or people they know more willing to receive the COVID-19 vaccine. The most frequent response to this question was that people will feel more comfortable with getting vaccinated themselves as time goes on and more people are seen receiving the vaccine. Specifically, seventeen study participants reported more time and more data as the most important intervention that can be made. One participant stated:

“I feel better now that millions of people have been vaccinated and they’re tracking it.”

Eleven participants mentioned that seeing family members and friends receive the vaccine would make them more likely to take it. When asked about celebrities and political officials receiving the COVID-19 vaccine on television, fifteen study participants said that it did not sway them to get vaccinated. A study participant stated:

“If a family member or friend did it and I’m hearing their personal experience, and I trust them versus some celebrity...It’s more so is it somebody that I know and trust.”

Eight participants mentioned that the increased opportunities that come along with being vaccinated might convince themselves and others to receive the COVID-19 vaccine. Study participants most frequently stated that they

are considering receiving the vaccine so they can go back to attending events with their family and friends. Seven participants stated that they would be more convinced to take the vaccine through personalized medical advice from their physician. Three participants reported that a potential intervention to increase COVID-19 vaccine uptake would be to make information about the vaccine and the people who have taken it more accessible. Another three study participants believe that if people do their own due diligence and conduct their own research on the positives and negatives of the COVID-19 vaccine, they will be more likely to receive it. Two participants listed a possible intervention may be to emphasize that receiving the vaccine will protect their families and friends.

Thirteen participants reported possible interventions that did not quite fit with some of the more common ones. The most frequently mentioned from these other interventions was improving the accessibility of the vaccine by making it easier to schedule appointments, increasing the number of vaccination sites within their communities, and providing the vaccine to primary care offices so participants can receive it from their own physicians. All of this information is visualized below (Figure 3). More quotes from our study participants on their feelings about possible effective interventions to increase COVID-19 vaccine uptake are also included below (Table 4).

Conclusion

In this study of Black Americans living in Boston, we found a multitude of reasons for COVID-19 vaccine hesitancy and discovered several interventions more likely to increase vaccine uptake. Lack of trust in the government, rushed development, fear of side effects, and history of medical

Table 4. Motivators to Increase COVID-19 Vaccine Uptake - Quotes from Participants.

More time and more data	“I feel better now that millions of people have been vaccinated and they’re tracking it.”
Family and friends	“If a family member or friend did it and I’m hearing their personal experience, and I trust them versus some celebrity...It’s more so is it somebody that I know and trust.”
Opportunities	“But seeing my pastors and sisters and close friends take it, made me want to be able to be around my family.”
Medical advice	“But my pastors are both medical doctors, and they received the vaccine and encouraged others to do it..I think [it] probably would also encourage others to do the vaccine if they had leaders such as that doing it, and suggesting it.”
Other	“I trust my doctor. She is a black woman. We have a pretty good relationship.” “I don’t know, I guess the main thing is just access needs to be a priority. Before conversations about why we should take it, the first conversations need to be how we can take it. Because if you tell us why we should, and don’t tell us how we can, what’s the point?” “We’re trying to convince people to take the vaccine when they can’t even access it... You are typing information in and then all of a sudden that appointment went away and now there’s no appointments. I think that what would influence people is for it to actually be available and for it to be an easier process. Not everybody’s going to keep refreshing the page on the website to try to get into an appointment.” “I like the fact that a black lady did it, she was like on the team for one of the vaccines. And it was in essence a magazine so I was like oh okay this is legit.” “If I either got a text or an email or a phone call from my doctor’s office that said the vaccine is available for you, would you like to come in and get it? That’s what will do it.”

mistreatment were the top-cited reasons for COVID-19 vaccine hesitancy. We also found that motivators likely to increase COVID-19 vaccine uptake included time and more data, friends and family, and opportunities/access.

Our findings regarding the top-cited reasons for COVID-19 vaccine hesitancy aligns closely with the results of previous studies done in Black Americans; Bogart et al. found that vaccine mistrust and lack of confidence in vaccine safety were the primary factors underlying low vaccine willingness.¹⁶ Similarly, other studies performed have consistently found that lack of trust in the government has been a major factor in decreasing general and COVID-19 vaccine uptake amongst Black Americans.^{4,21,26} Interestingly, in a study conducted between May-June 2020, Callaghan et al. found that Black Americans were more likely to cite “vaccine won’t be effective” as a reason for COVID-19 vaccine refusal compared to White Americans.²⁶ This was not a theme that emerged throughout our findings, potentially indicating that major reasons for vaccine hesitancy have shifted since the public rollout of vaccines in early 2021.

History of medical mistreatment was also cited as a major reason for COVID-19 vaccine hesitancy. Medical racism in the US is pervasive; in one survey, 7 out of 10 Black Americans believed there was race-based discrimination in health care often, and amongst Black women, 37% say they have been treated unfairly because of their race in a healthcare setting.²⁷ Participants in our study cited the medical mistreatment at the hands of the U.S. Public Health Service Untreated Syphilis Study at Tuskegee University and the sales of talcum powder that Johnson and Johnson targeted towards Black and Hispanic women in the early 2000s. This history of systemic racism in the healthcare setting continued with the previously discussed health and social inequities of the COVID-19 pandemic.

We found the most common source of information regarding the COVID-19 vaccine was their physicians. This may reinforce the critical role physicians and other healthcare workers play in mediating conversations about vaccinations with their patients. Indeed, one participant remarked “I’m not going to Gillette and I’m not going to Fenway for any shot. I also don’t like them doing it at Walgreens and CVS. I’m not giving Walgreens or CVS any of my personal information.” Future vaccine rollout efforts need to be focused in primary care offices, instead of pharmacies and mass vaccination sites.

Time and more data was the motivator most likely to be cited by participants to increase COVID-19 vaccine uptake. This likely reflects the lack of trust in the safety/side effect profile of the vaccine. This coupled with our finding that most participants get their COVID-19 vaccine information from their physicians may lay the groundwork for physician-led community interventions to reach and educate vaccine-hesitant individuals. We also found that the next most likely motivator was the category “other,” reflecting those

motivators likely to increase vaccine uptake can vary greatly from person-to-person. This may indicate the need for a personalized approach to increase COVID-19 vaccine uptake in these populations. Family/friends, opportunities, and medical advice were the other interventions most cited by interviewed participants to increase COVID-19 vaccine uptake.

Interestingly, of the 18 participants included in this study who initially identified as COVID-19 vaccine hesitant in December 2020, six participants had since received their COVID-19 vaccines, potentially indicating the fluidity of opinion regarding the vaccine and the ability to increase uptake through continued intervention efforts.

Conclusions from this study must be tempered by a number of limitations. While it was intentional that all interviewees identify as African or Black American, this feature poses constraints on the generalizability of the study’s findings. Future research should explore gathering data from a wider range of populations including Indigenous persons, Asian Americans and Pacific Islanders, and Hispanic persons. Furthermore, all of the study participants either live, study, and/or work in Massachusetts, a northeastern state in the United States. It would be interesting to compare responses between different geographical populations. Another limitation is the small sample size ($n = 18$). There could be further bias in the responses, due to the fact that the interviewees self-identified as being unsure about the COVID-19 vaccination and voluntarily engaged in this study. They may therefore represent a proportion of the population more inclined to discuss health issues. We acknowledge that these responses cannot capture the realities of all Africans and Black Americans in the aforementioned location. Interviewers attempted to address this limitation by incorporating questions that invited participants to discuss perspectives of their wider community.

As this qualitative study relies on information from human subjects, an inherent challenge was procuring genuine responses from interviewees. In this study, the interviewers were African or Black American, ie, similar ethnic groupings as the interviewees. This was an intentional consideration in the study design to recognize the importance of representation in the conducting of this research. Interviewers were trained on creating a comfortable and safe atmosphere for participants to share their thoughts openly and honestly. The anonymity of participation and protection of each interviewee’s identity was designed to help participants share their true opinions.

An additional limitation is that the interviews were conducted 3-4 months after participants had expressed interest in being interviewed about their vaccine hesitancy. Within this time, more information had come out about the COVID-19 vaccine and some participants indicated being less hesitant at the time of the interview than they were when they volunteered. Though their responses are undoubtedly insightful, we recognize that

certain answers may have been different if the participants were interviewed at the time they indicated hesitancy.

Discussions surrounding race and medicine in the US can be difficult and emotionally charged, however health intervention programs must acknowledge and address structural racism to be successful.¹⁷ Facing the aftermath of the rise of COVID-19, we must address public health from a racial justice lens with the primary goal of protecting those most vulnerable to disease. Intervention strategies to increase COVID-19 vaccine uptake among Black Americans should target the most common reasons for hesitancy among this population. Based on our study results, this may require government action to increase trust and may vary based on the elected administration. It also may require enhanced education about the accelerated vaccine development process as well as implementation of support systems to encourage vaccination, such as time off work, to ease fear of side effects. Additionally, acknowledgement of past medical mistreatment as well as ongoing racism faced by Black Americans is crucial, and intervention strategies must be informed by the past and current traumas endured by this community.

There were a wide variety of reasons for COVID-19 vaccine hesitancy reported by participants despite the relatively small and mostly racially uniform sample, revealing the nuanced nature of this public health challenge. This suggests that interventions be community-based and tailored to individual needs. Our research reveals there is not a one-size-fits-all method to address vaccine hesitancy. Public health officials must take time to learn and understand what motivates their specific communities, in order to increase vaccine acceptance and comfort. Interventions that focus on a smaller scale may ultimately be more successful than large scale interventions that cannot address individual concerns. We suggest that a balance is needed between large scale vaccine policy and community-based efforts to effectively address the motivations and concerns of each group.

Our study is consistent with past research related to vaccine hesitancy among Black Americans and would be further supported by additional studies with larger sample sizes. Black Americans are not the only minority group disproportionately impacted by COVID-19, and future research is necessary to explore unequal rates of vaccine hesitancy among other populations. Further investigation is also necessary to gain a more complete understanding of the complex dynamics contributing to racial disparities in trial participation and COVID-19 vaccine hesitancy in order to protect groups most susceptible to COVID-19 consequences.¹⁷ Prioritizing vaccine acceptance among communities most susceptible to COVID-19 infection will help the larger population to reach the herd immunity threshold and therefore help protect individuals nationwide. Similar research approaches may be taken in the future to explore vaccine hesitancy in other locations and

among other minority groups disproportionately affected by COVID-19.

So What?

What Is Already Known on This Topic?

Past literature shows that Black Americans report disproportionate rates of general vaccine hesitancy, leaving this community more susceptible to various diseases. It has also been reported that there is a racial divide in COVID-19 vaccine hesitancy, with Black individuals more hesitant compared to White individuals.

What Does This Article Add?

Recent research has established that rates of COVID-19 vaccine hesitancy differ by race, but few studies investigate the reasons for these disparities. Here we find that, despite a seemingly homogenous group of Black Americans who self-identified as COVID-19 vaccine hesitant sampled from a church, there was substantial heterogeneity in reasons for COVID-19 vaccine hesitancy. We also found evidence that celebrity vaccination or vaccine endorsement was not a compelling intervention to improve vaccine uptake amongst our sample.

What Are the Implications for Health Promotion or Research?

The public health challenge of increasing vaccine uptake in the Black community is nuanced and intervention efforts may be more successful if delivered by trusted members of the community and tailored to the needs of individuals.

Authors' Contributions

SS, JS, MML, SBNF coded transcripts. MJ, UJ, TM, JK, MW interviewed participants. SS, JS, MML, MJ, UJ, TM contributed to drafting and editing the manuscript. GWH and WH provided guidance on the analysis, oversaw the study, and provided substantial edits to the manuscript. All authors discussed the results and contributed to the final manuscript.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work

was done with financial support from Johnathan M. Tisch College of Civic Life at Tufts University.

Ethical Approval

Tufts University Institutional Review Board (approval number: STUDY00001321) determined that this project is exempt from full review. All participants provided written informed consent.

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Supplemental Material

Supplemental material for this article is available online.

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