

**Vaccine Hesitancy: The Danger That It Presents To The Global Community**

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## Abstract

**Background:** Vaccine hesitancy, or the delay in accepting or refusing vaccines despite the availability of vaccine services, is considered a top-ten threat to public health. Vaccine hesitancy is not a new phenomenon and has become increasingly common as cases of vaccine-preventable diseases continue to rise worldwide. International health organizations and academia have been examining why a considerable number of people do not receive recommended vaccinations. Prior to the COVID-19 pandemic, it had been realized that people are influenced by various factors such as complacency, convenience, confidence, constraints, calculation, and collective responsibility, or what is known as the psychological antecedents of vaccine hesitancy. More recently, the speed of global information exchange disseminated by news outlets, websites, and social media has led to the viral sharing of fringe opinions and disinformation about vaccines exasperating public concerns. As a result, public health organizations are seeking new ways to address the infodemic that is boosting the current COVID-19 pandemic and other vaccine-preventable diseases with the objective of reaching herd immunity.

**Objective:** The purpose of this study is to identify the factors of vaccine hesitancy and why people in the Black community refuse to accept vaccines more than other racial or ethnic groups.

**Design and method:** The research is based on scholarly literature and current reports from valid and reliable sources that add to the existing body of research on vaccine hesitancy. These sources present the evolution of research on vaccine-hesitant behavior. They explore possible causes of vaccine hesitancy in earlier periods and how the behavior has become increasingly common. This research seeks to answer the following questions: *What factors influence vaccine hesitancy? What factors are specific to Black communities and why? What are effective methods of addressing vaccine hesitancy to increase vaccine acceptance?*

**Results:** This study is significant because it analyzes and addresses behavior detrimental to public health. Vaccine hesitancy is likely the leading cause of the spread of diseases that cause severe illness and death but are vaccine-preventable. The spread of disease from person to person becomes unlikely when herd immunity is achieved. Herd immunity occurs when a large portion of a population of people (the herd) becomes immune to disease through vaccination. As a result, the whole population becomes protected - not just those who are immune.

**Conclusion:** Currently, China is under severe COVID restrictions as its citizens defiantly protest. The United States is dealing with a triple-demic due to COVID-19, influenza, and respiratory syncytial viruses. Monkey Pox is also a part of the current health-threatening lineup. Vaccines for COVID-19, influenza, and Monkeypox are available, yet vaccine-hesitant people jeopardize themselves and their communities. Experts now believe that it will be challenging to achieve herd immunity for COVID-19. In addition, the coronavirus has mutated several times since its introduction making it difficult for public health organizations to keep up with a vaccine for every new strain.

**Keywords:** Vaccine hesitancy, herd immunity, infodemic, vaccine, coronavirus, COVID-19, misinformation, psychological antecedents, drivers

## Chapter 1: Introduction

### *Background and Overview:*

In late 2019 an acute rise in cases of Severe Acute Respiratory Syndrome (SARS) happened in Hubei, China, and quickly spread throughout China and the rest of the world. The cause is a new coronavirus strain later named Coronavirus Disease 2019 (COVID-19). Subsequently, public health organizations were confronted with the urgent task of developing and administering a vaccine with the goal of bringing what the World Health Organization (n.d.) (WHO) has called “history’s deadliest plague” under control through herd immunity. Unfortunately, vaccination rates have stalled due to pre-existing vaccine opposition, a behavior known as vaccine hesitancy. In 2019, the WHO considered vaccine hesitancy a top ten threat to global public health alongside climate change.

Vaccine hesitancy or delay in acceptance or refusal of safe vaccines despite the availability of vaccination services is a global phenomenon that has become increasingly common (Lueck & Callaghan, 2022). By declining or delaying vaccination, vaccine-hesitant individuals and groups undermine the prevention and elimination of communicable diseases for which safe and effective vaccines are available (Tankwanchi et al., 2021). From smallpox to COVID, people have resisted the acceptance of vaccines for various complex reasons. Jason Schwartz, an associate professor in the Department of Health Policy and Management at the Yale School of Public Health, explains that two primary themes can be observed from vaccine opposition movements of the past and present. The first is the perception among critics that vaccines, individually and collectively, cause more harm than the diseases they are intended to prevent. The second is the close association between the promotion of vaccines and mandatory vaccination policies intended to ensure compliance.

In 2014, a working group appointed by the WHO Strategic Advisory Group of Experts defined vaccine hesitancy as “complex and context-specific, varying across time, place, and vaccines.” They also said that “it is influenced by factors such as complacency, convenience, and confidence.” This concept encouraged reflection in public health and scientific discourses around the drivers and a continuum of hesitancy between vaccine acceptance and refusal (Turner et al., 2021). In addition, vaccine hesitancy highlights that vaccination decisions are multifactorial.

Rumors and misinformation are also past and present drivers of vaccine hesitancy. Recent evidence from the COVID-19 pandemic suggests that vaccine hesitancy trends have become more acute in response to the speed of global information exchange. Online misinformation is a factor that influences vaccine hesitancy (Garett & Young, 2021). False or misleading information online regarding vaccines can be found in independent news outlets, websites, and social media, and its rapid and extensive dissemination is aided by artificial intelligence (AI). This new digital communication landscape generates what is described as an “infodemic.” As explained by Garrett and Young (2021), in combating online misinformation, public health experts, the medical community, and lay vaccination advocates can correct false statements using language that appeal to those who are undecided about vaccination.

### ***Research Questions***

***RQ#1: What are the factors that influence vaccine hesitancy?***

***RQ#2: What factors are specific to Black communities and why?***

***RQ#3: What are effective methods of addressing vaccine hesitancy to increase vaccine acceptance?***

## ***Definitions of Key Terms***

**Coronavirus:** *Coronaviruses are large, enveloped RNA viruses of medical and veterinary importance.*

**COVID-19:** *A respiratory disease caused by SARS-CoV-2, a coronavirus discovered in 2019.*

**Disinformation:** *false information intended to mislead, especially propaganda issued by a government organization to a rival power or the media.*

**Drivers:** *Factors that influence vaccination decision-making*

**Herd Immunity:** *Occurs when a large portion of a community (the herd) becomes immune to a disease.*

**Infodemic:** *An overabundance of factual and misinformation information contributes to vaccine hesitancy.*

**Misinformation:** *False or inaccurate information, mainly intended to deceive.*

**Psychological Antecedents:** *What was happening (psychologically) before a particular behavior occurred.*

**SARS-CoV-2:** *Severe Acute Respiratory Syndrome is a viral respiratory illness caused by the coronavirus.*

**Vaccine:** *A substance used to stimulate the production of antibodies and provide immunity against one or several diseases.*

**Vaccine Hesitancy:** *The delay in acceptance or refusal of vaccination despite the availability of vaccination services.*

## Chapter 2: Literature Review

This Senior Capstone is a qualitative examination of the history of vaccine hesitancy and its effect on the Black American population, one of the most immuno-compromised groups. On the surface, vaccination is a simple, safe, and effective way of protecting ourselves against harmful diseases before coming into contact with them. They are widely acknowledged as one of the most successful public health interventions. Research shows that vaccines are responsible for saving countless lives and preventing unimaginable numbers of disabilities throughout the history of infectious diseases. Evidence exists that the Chinese employed smallpox inoculation as early as 1000 CE, and the practice spread to Africa, Turkey, Europe, and the Americas. The development of vaccination as a public health tool is attributed to Edward Jenner and his experiments with cowpox in 1796 (Greenwood, 2014). His late 18th-century innovations birthed the smallpox vaccine that eventually eradicated smallpox, a milestone achieved in 1979. Since then, medical and technological advances over the next 200 years have developed vaccines against infectious diseases such as rabies, diphtheria, tetanus, anthrax, cholera, plague, typhoid, and tuberculosis. The mid-20th century brought us a vaccine for polio and other childhood diseases such as measles, mumps, and rubella, which reduced the disease burden significantly, according to the Centers for Disease Control (n.d.). However, despite the well-documented achievements of vaccines and extensive efforts by the public health community to ensure their safety, vocal critics of vaccination proffer a growing list of theories that link an array of medical conditions (Schwartz, 2012).

Historical records indicate that vaccine hesitancy existed by the 18th century in Europe, where vaccination was quickly adopted as a public health tool. However, vaccination programs were met with fierce opposition from some community sections during that period. For instance,

the Vaccination Acts of 1840 and 1853 introduced compulsory vaccination in the United Kingdom. It resulted in violent riots in several towns and the formation of the Anti-Vaccination League in London (Turner et al., 2021). And again, in 1871, when vaccination was made compulsory, many people gravitated to existing vaccination opposition movements. It is also documented that vaccine hesitancy contributed to the smallpox epidemic in Stockholm from 1873 to 1874, driven mainly by the clergy despite the vaccination programs' contribution to a decline in the incidence of the disease (Greenwood, 2014).

### **Vaccine Hesitancy**

As Webb Hooper, Napoles, and Perez-Stable noted in their paper “No Populations Left Behind: Vaccine Hesitancy and Equitable Diffusion of Effective COVID-19 Vaccines,” vaccine delays and refusals have contributed to outbreaks of vaccine-preventable diseases since the very invention of vaccines. Vaccine-hesitant citizens enable the spread of disease by refusing or deferring their vaccine doses, thereby undermining the prevention and ultimate elimination of communicable diseases against which safe and effective vaccines are available (Tankwanchi et al., 2021). The goal of public health organizations is to achieve what is known as herd immunity, which occurs when a large portion of a community (the herd) becomes immune to a disease either through recovery from it or vaccination. As a result, the whole community becomes protected as the spread of disease from person to person becomes unlikely.

### **Attitude and Perception Toward Vaccination**

Currently, we are experiencing the COVID-19 epidemic. We are able to witness how vaccine hesitancy contributes to an ever-increasing number of hospitalizations and deaths, especially as the virus continues to mutate. To date, over 643 million people have been infected, and more than 6.6 million have died globally from the COVID-19 virus, according to WHO. Yet,

only 66% of the global population (Holder. 2022) has been vaccinated, which heightens concerns about why folks have delayed or refused to do so. There is no easy answer to that question because vaccine hesitancy is complex, and vaccination attitudes and decisions should be seen on a continuum, ranging from a small minority of activists against vaccination to the majority who accept vaccinations. An individual's decision to become immunized or not is influenced by factors (sometimes called "drivers") such as confidence (Trust in the importance, safety, and effectiveness of vaccines), complacency (not perceiving diseases as high risk), constraints (structural and psychological barriers); calculations (engagement in extensive information searching; and a sense of collective responsibility (willing to protect others). These drivers may be understood as "the psychological antecedents to vaccination" (Betsch et al., 2018). These psychological antecedents to vaccination are among the prominent themes in the literature, along with misinformation and media distrust. It is essential to mention the fact that vaccine hesitancy also highlights that vaccination decisions are multifactorial; usually, numerous drivers intersect to compose a theme from which an individual or a community form decision about vaccine acceptance. For example, barriers to vaccine uptake might include concerns over the safety, importance, and efficacy of vaccines, religious beliefs, needle phobia, prior interactions with healthcare providers, or historical concerns over the use of vaccines in specific ethnic/minority groups in any combination to form an individual's decision.

### **The Psychological Antecedents To Vaccination In The 5C Scale**

To eliminate certain infectious diseases and protect individual health, it is first necessary to understand the antecedents of (non-)vaccination (Betsch et al., 2018). Most existing measures focus primarily on the confidence-related aspects of hesitancy and occasionally go beyond this significant factor. The global mapping of vaccine confidence by de Figueiredo et al. (2020),

analyzing data collected with their Vaccine Confidence Index across 149 countries, revealed the volatility of vaccine confidence, with some countries becoming more confident over time and others more hesitant. The 5C scale was devised to measure and capture relevant predictors of vaccination behavior. The constructs of the 5C framework (the five relevant psychological antecedents) prioritize individual processes over more social processes (Wysong et al., 2021).

By contrast, Saleska and Choi (2021) propose a behavioral economics perspective to consider how the general public may decide whether to receive a COVID-19 vaccine in the context of frequent side effects and preexisting mistrust. Behavioral economics is the study of human decision-making. Three common cognitive biases shown to influence human decision-making under a behavioral economics framework are considered: confirmation bias (accepting evidence in support of prior beliefs), negativity bias (prior negative perceptions being more influential than new positive perceptions), and optimism bias (a tendency to adopt an overly optimistic view about ourselves and the likelihood of experiencing negative events). These researchers pose that applying a behavioral economics framework to COVID-19 vaccine decision-making can elucidate potential barriers to vaccine uptake and points of intervention for clinicians and public health professionals.

### **Misinformation**

In the broader realm of influences on vaccine decisions (from confidence in the safety and effectiveness of vaccines to issues of access and trust in the institutions that deliver them) the age-old issues of rumors and misinformation can now have a more significant impact owing to the phenomenon of digitally-driven infodemics (Turner et al., 2021). The WHO Director-General, Tedros Adhanom Ghebreyesus, described an infodemic as an excess of correct and incorrect information that arises during a disease outbreak. This phenomenon has been

particularly acute during the COVID-19 pandemic, spreading disinformation across populations in a similar manner to a disease outbreak via social media and news outlets with political interests, making it difficult for people to assess the reliability of the information.

Misinformation feeds on people's fears and anxieties about the pandemic to promote anti-vaccination conspiracy theories (Razai et al., 2021).

Garett and Young (2021) wrote in their journal article "Online Misinformation and Vaccine Hesitancy" that one of the most effective methods of spreading misinformation online is through social media. Garett and Young say this because artificial intelligence technology is a key component of popular social networks that use algorithms that automatically rank content on a social platform based on how likely each social media user is to like and interact with it.

Additionally, they cited the following statistic from a report by the Centre for Countering Digital Hate (CCDH) which found that social media accounts by anti-vaccination proponents gained 7.8 million followers since 2019, with 31 million Facebook users following anti-vaccination accounts, and 17 million YouTube users subscribing to similar accounts.

In traditional and mainstream media coverage (e.g., broadcast news, television, print, and radio), health information is more likely to be vetted and fact-checked due to editorial policies.

Conversely, social media and other internet-based channels are often not subject to such content regulations, leaving users more susceptible to exposure to false information (Woko et al., 2021).

Media outlets have made claims of the vaccines not working, making individuals magnetic, infertile, or autistic, and vaccines being made from fetal tissue, causing variants, or being used by governments to track their citizens. These are the notions held by people who are reluctant and hesitant about getting the COVID-19 vaccine. Worse yet, government and medical officials are unabashedly engaging in purposeful disinformation campaigns. For example, the former

president of the United States is responsible for spreading dis-misinformation to the American population about COVID-19 during the early days of the pandemic, doubtlessly causing mass confusion about the vaccines. And, to add insult to injury, the current governor of Florida, a potential future presidential candidate for the republican party, just launched a new battle against COVID vaccines by seeking a grand jury investigation into alleged side effects. This situation can be considered a criminal act given that over 1 million people have died in the U.S., and this governor is endangering people who are still unvaccinated for political gain. Such factors almost certainly exacerbate an individual's fragile trust in governmental and healthcare institutions to the extent that their vaccine-hesitant attitudes and behavior are justified.

Ultimately, aggressive efforts to combat COVID-19 misinformation and disinformation through simple, consistent, repetitive, and effective counter-messaging are needed to increase confidence in the vaccines and the use of behavioral mitigation strategies (Webb Hooper et al., 2021). However, correcting misinformation is not enough for those with deep beliefs compounded with distrust in authorities, says Turner et al. (2021). A combination of trust-building efforts from public health authorities that engage local community members and messaging directly from trusted healthcare providers is needed.

## **Distrust**

Trust is a key predictor of vaccine hesitancy. An overall distrust of vaccines and the government increases the likelihood of vaccine hesitancy, while trust in health institutions and experts decreases the likelihood of hesitancy. A lack of trust in the safety and efficacy of vaccines (mainly those approved through expedited processes) and in the authorities that have issued recommendations is fairly common across education and economic levels, race/ethnicity, and political beliefs. However, there are various explanations for the general wariness and the

particular wariness among Black Americans. Some possess a general anti-vaccination sentiment or believe the misinformation circulating about the COVID-19 vaccines. Others view the COVID-19 vaccination as a political issue noting the unconfirmed information being disseminated in the media by the former President and other sources. And there is a very plausible explanation linked to historical and contemporary instances of mistreatment and exploitation of Black communities by the U.S. healthcare system (Woko et al., 2021).

Within Black communities, vaccine hesitancy is associated with a longstanding and justified distrust of the medical community based on past experiments such as the Tuskegee syphilis study that occurred from 1932-1972, in which four hundred Black male sharecroppers in Macon County, Alabama, were studied by the United States Public Health Services to observe the natural progression of untreated syphilis that had been given to many of them by government officials who continued the study up to the unwitting participants' eventual death by the disease. The subjects had not given informed consent and were not informed of their diagnoses. They were only told they were being treated for "bad blood." They were also told they would receive free medical care, transportation to the clinic, meals, and burial insurance in case of death. In addition, subjects were warned to avoid penicillin, which had become the preferred treatment for syphilis in 1947 (Mata et al., 2015). This so-called study appears to have been rooted in the

### **Eugenics Movement**

The American eugenics movement of the late nineteenth century continued as late as the 1940s (Carlaw, 2020). It embraced negative eugenics, with the goal of eliminating undesirable genetic traits in the human race through selective breeding. Eugenics reinforced racism by deeming whites as having desirable traits and non-whites of lower economic status, physical or mental disabilities, criminal backgrounds, and those deemed sexually deviant were considered

undesirables. Laws that legalized forced sterilizations were enacted and prohibited individuals with mental or physical defects and couples of mixed races from marrying. With this American history as a reference for the Black population, much of everything offered by the dominant group is approached with justified skepticism.

Unfortunately, other contemporary inequities in access to healthcare and health outcomes include data indicating that half of the surveyed white medical trainees harbored at least one false belief about differences in pain sensitivity among Black and white patients, possibly resulting in significant consequences as such beliefs lead to unfounded discrepancies in treatment and pain management plans (Hoffman et al., 2016). Another study found that Black newborn babies are three times more likely than white babies to die when under the care of a white physician (Bunch, 2021). Such unfortunate occurrences will continue in 2022.

Primarily due to health inequities, the pandemic has disproportionately impacted the Black population through higher rates of transmission, morbidity, and mortality. The literature strongly suggests that the differences in the case rate of 2.6 times and the death rate of 2.1 times that of the white population can be attributed to the effects of structural racism and the unequal effects the social determinants of health have on communities of color. Such factors contribute to the lack of trust in and reliance on public health systems for health information, which has had devastating consequences for health outcomes, especially among marginalized populations.

Despite the fact that measuring the psychological antecedents of the global population to predict vaccine confidence combined with addressing the infodemic phenomenon are both important and necessary strategies to mitigate vaccine hesitancy, it is not enough to overcome the concerns of the Black community and other groups of people of color who have experienced similar treatment. The alarming facts and statistics of structural, systemic racism are at the core

of the problems that exist within American and global societies where non-white populations are subject to flagrant inequality. In the multidisciplinary field of public health researchers, Ford and Airhihenbuwa (2018) promote their semi-structured research method to facilitate the use of Critical Race Theory (CRT) in health equity research (i.e., the Public Health Critical Race Praxis [PHCRP]).

Although CRT is a transdisciplinary, race-equity methodology that originated in legal studies, it is grounded in social justice. Its tools for conducting research and practice are intended to elucidate contemporary racial phenomena, expand the vocabulary with which to discuss complex racial concepts, and challenge racial hierarchies (Ford, 2010). It offers the field of public health a new framework for investigating the root causes of health disparities. The PHCRP model indicates the major racial equity issues to address at critical stages of the research process and the CRT tools to use. It has three functional components: its race-conscious orientation to research; four primary focus areas, and a CRT-derived lexicon. Informing policy and practice requires studies that build on CRT-based conceptual advances in public health (Ford, 2018).

If racism produces morbidity, mortality, and overall well-being rates that vary depending on socially assigned race, then eliminating racism is central to achieving health equity. With health equity for people of color, earned trust in the healthcare community over time can provide greater vaccine confidence during a public health crisis like the current COVID-19 pandemic and lessen the effects of the other psychological antecedents that contribute to an individual's vaccine-hesitant attitude; particularly collective responsibility so that individuals can be more willing to protect others through vaccine acceptance.

### Chapter 3: Methods

This qualitative research is produced from a systematic review of scholarly studies of vaccination delay and refusal, commonly known as vaccine hesitancy. This study was undertaken during the COVID-19 pandemic in an effort to understand the determinants of decision-making about vaccinations, including why individuals from the Black American community have refused vaccine uptake at alarming rates and how best to address the problem of vaccine hesitancy. This research began with the careful consideration of search terms, the selection of databases, the choice of search methods, and reflection on any search results identified throughout the process. Scholarly journal articles were selected from the Purchase College online database, which hosts EBSCO and ProQuest. Information from The World Health Organization and the Center for Disease Control is also included for up-to-date developments, statistics, and cross-referencing.

The following questions guided this research:

***RQ#1:** What are the factors that influence vaccine hesitancy?*

***RQ#2:** What factors are specific to Black Americans and why?*

***RQ#3:** What are effective methods of addressing vaccine hesitancy to increase vaccine acceptance?*

Search terms for this study included keywords relevant to the COVID-19 pandemic:

*COVID-19, pandemic, vaccine, vaccination, vaccine refusal, vaccine hesitancy, anti-vaxxers, herd immunity, infodemic, vaccine misinformation, vaccine disinformation, vaccine confidence, monitoring public confidence in vaccines, determinants of vaccine confidence, psychological antecedents, distrust of government authorities, distrust of public health authorities, racial disparities, systemic racism in public health care, critical race theory, and critical race theory in*

*health care*. After carefully choosing the articles from a plethora of information on this subject, I printed physical copies of each. Then, I categorized them into groups determined by main themes within vaccine hesitancy: *the psychological antecedents of vaccine hesitancy, the presence of related misinformation, and distrust of health authorities*. The most common of these three themes was a focus on the psychological antecedents, with misinformation and the over-abundance of unverified information disseminated through social media and other sources (sometimes called the “infodemic”) the second most common. The last and least frequent theme is racial disparities in public health and the distrust of public health authorities - often by Black communities, due to long-standing racial disparities in positive health outcomes.

Although there have been countless studies on vaccine hesitancy, intelligent people, including nurses, teachers, police officers, and other professionals, refusing vaccination against the deadly COVID-19 virus is intriguing, particularly when the disease disproportionately affects their community. Such reaction from the Black community is the inspiration for choosing this topic. First, I wanted to understand what individuals are thinking when deciding to refuse the potentially life-saving vaccine. And more importantly, I want to contribute some insight on the topic that could oppose the influence of misinformation that some patients believe due to pre-conceived notions about the United States Government, healthcare authorities, and vaccines. Fortunately, there are countless scholarly articles written on the subject which provide more than enough data for an understanding of what some individuals may be thinking when they make the decision to delay or refuse vaccination.

On the other hand, the plethora of information sources limited my ability to elaborate on vaccine hesitancy in new ways as it is measured in various other studies that utilized different methods to measure vaccination behavior. For example, in the Western Cape Province of South

Africa conducted, in-depth interviews with point-of-care vaccinators were conducted in 16 purposefully selected healthcare facilities. The point-of-care vaccinators' perceptions of the drivers of vaccine hesitancy range from the most to the least common, as reported by their clients, including religion, needle phobia, natural immunity development, and concern about possible adverse effects following immunization. Because these are common drivers that are salient in South Africa and not the most common globally, it proved best to exclude this study and others due to the limited scope of this project. I narrowed my focus to the most prevalent studies validated by public health institutions.

My intent for researching this topic is to inform the reader about the effects of the many drivers that intersect and become interrelated when deciding to get vaccinated or refuse. Perhaps this review can give the reader a more informed position and help them to make a better-informed decision.

## Chapter 4: Results

The results of this Senior Capstone research taken together contribute some answers to understanding why individuals are vaccine-hesitant, why individuals from various ethnic groups are more vaccine hesitant than those from a dominant group, and how to address the problem. In addition, the literature covered the broader theoretical conceptualization of vaccine hesitancy and acceptance through the 5C scale, which expands the scope of available measures and can be used as a tool for diagnoses to support the design and evaluation of clinical interventions. Finally, the studies also elucidate the adverse effects of misinformation and adequate measures to promote the pro-vaccination efforts to provide correct, scientific-backed counter-responses to the anti-vaccination propaganda and the distrust of public health and government institutions.

In this section, I will elaborate on the research findings by addressing the proposed questions that guided this research:

### **RQ#1: What are the factors that influence vaccine hesitancy?**

Vaccine hesitancy, as described above, and vaccine acceptance are important determinants of vaccine uptake. Similar to all behaviors, vaccination attitudes and decisions range from a majority of unquestioning acceptors of vaccines to a small minority of vaccine deniers. Vaccination decisions are complex and multifactorial, and in between the two categories of the continuum range, some individuals are cautious acceptors with minor concerns, those that are hesitant because of many concerns they may have, those that are selective of which vaccines to accept or refuse, and the vaccine refusers. In addition, individuals sometimes move between categories over time depending on variable influences such as information or the perceived need for vaccination.

Turner et al. (2021) describe that “At the individual level, the complex and interrelated factors influencing vaccine hesitancy and acceptance have been summarized under the 5Cs model,” (p. 3569) which is explained above. The factors confidence, convenience, complacency, calculation, and collective responsibility umbrella numerous other possible reasons for vaccine hesitancy, such as previous experiences with respect to vaccination, mistrust of doctors/health services/government/big pharma, peer pressure/perception of vaccination by peers, religious beliefs, and historical concerns over the use of vaccines in specific ethnic/minority groups to name a few. And the COVID-19 pandemic has unveiled a new list of reasons for vaccine hesitancy. Many people are concerned about the latest technology and speed of vaccine development for COVID-19. It is perceived that a lack of safety data exists, which scared most folks as the vaccine program was rapidly rolled out, and the denial of COVID-19 as a problem by some politicians and leaders did not help confidence levels toward the vaccine and healthcare authorities. Understandably, any number of reasons intersect and become interrelated to influence an individual’s decision over accepting or refusing a vaccine each time that vaccination is needed for the individual or their children.

**RQ#2: Why are so many Black Americans and people from other communities of color refusing life-saving vaccines?**

Woko et al. (2021) reported findings on COVID-19 vaccination intentions have disclosed that vaccination intentions differ across racial groups. Compared to 52% of the white population that intended to accept vaccine uptake, 56% of the Latinx group, and 72% of the Asian group, the Black adult population was the least likely to get a COVID-19 vaccine at just 32%.

Momplaiser and colleagues at the University of Pennsylvania conducted a focus group with Black barbershops and salon owners living in zip codes of elevated COVID-19 prevalence. They found that barriers to vaccine uptake included concerns about safety, efficacy, misinformation,

the politicization of the scientific process, the accelerated timeline for vaccine development, and distrust of the scientific and medical communities because of long-standing racist practices. In addition, Black Americans have been exploited for so-called medical research (e.g., Tuskegee Syphilis Study), racial discrimination, and unequal treatment by healthcare providers. These factors contribute to the lack of trust in and reliance on health information from the medical and public health systems.

**RQ#3: What are effective methods of addressing vaccine hesitancy to increase vaccine acceptance?**

I found an overarching factor in most of the studies examined for this research is a lack of confidence. Vaccine hesitancy or acceptance is generally triggered by issues of trust in (1) the effectiveness and safety of vaccines, (2) the system that delivers them, including the reliability and competence of the health services and health professionals, and (3) the motivations of policy-makers who decide on the need of vaccines. Trust is the starting point for every prospective vaccine recipient, regardless of race, ethnicity, economic status, or education level. However, as mentioned above, attitudes toward vaccines are on a continuum and are subject to change each time vaccine acceptance come into question.

Where an individual accepted an influenza vaccination earlier, that same person may decide not to take the COVID-19 vaccine depending upon their understanding of the various vaccines. The (mis)information disseminated about a particular vaccine is most likely the pivotal point at which the decision to vaccinate is tentatively made. Then numerous other factors weigh into the decision-making process, and the individual may “calculate” by engaging further in extensive information searching to ascertain confirmation about the original tentative decision.

The information we obtain about a particular vaccine persuades us in one direction or the other along the continuum scale, which is why the information sources must be filtered and

perhaps censored so that (dis)misinformation is minimized if not eradicated. Freedom of speech is detrimental to us when it harms one's health and well-being. Woko et al. (2021) determined that "future mass communication campaign efforts should utilize the credibility of trusted authorities (e.g., healthcare workers, public health officials, scientists) to disseminate vaccine information across different media platforms, while also addressing potential concerns that different populations might have" (p. 825). There should be year-round education on the history of vaccines, demonstrating how vaccines have saved lives over the centuries since they have been used as public health tools. Additionally, government officials must be held accountable for disseminating disinformation for political purposes. Laws should be enacted to protect the public against rouge, seditious acts committed by people entrusted with authoritative power.

## Chapter 5: Discussion

The focus of this research was to seek an understanding of why people were refusing to accept the COVID-19 vaccine. In particular, I wanted to know why many in the Black community refused, especially since that community was being hit the hardest and dying at the highest rate due to many prevalent comorbidities. It was undoubtedly an unusual phenomenon because hospitals were at total capacity with limited resources to serve their patients, and people were dying by the thousands each week. As a result, hospitals and nursing homes were forced to store the bodies of the deceased in truck trailer freezers, and mortuaries could not accept them anymore.

The people dying were mainly older and suffered mostly from diabetes, hypertension, obesity, and other comorbidities that are traits from slavery's brutal mistreatment of their ancestors. Many younger Black Americans also died from vulnerabilities of drug and alcohol abuse, while small groups refused to get the vaccine because of conspiracy theories about the government. Years prior to COVID-19, I had experienced hearing similar theories about the tuberculosis tests administered in school. But, the refusal of those tests did not raise one's curiosity the way that COVID-19 has. This virus is killing people in real-time, and it is still unconscionable that anyone would refuse protection against it even now. I thought that no information could make me disregard all I saw.

This examination of vaccine hesitancy has provided answers and an understanding of why people generally react the way they do. But, for the Black and other marginalized communities, distrust of governmental entities is justified due to slavery, the eugenics movement, the Tuskegee murders, and countless other atrocities committed against them. With that said, my reasoning for the acceptance of the COVID-19 vaccine is that if the goal is to

commit another holocaust, it could be done by listening to the president of the United States who became infected while encouraging citizens not to wear masks because COVID-19 was nothing more than the flu. Unfortunately, he also had a conservative news outlet supporting his rhetoric to his white constituency even though employees within that organization had to get vaccinated and wear masks. However, Black people in most urban communities are not Fox news viewers; therefore, it is not likely that they were negatively influenced there. Instead, social media is the source for many, and it is there that many were misinformed and had their earlier beliefs re-enforced.

This study illustrated how social media is a significant driver of misinformation about COVID-19. The algorithms answer an individual's questions with an overabundance of negative or positive information. So much so that the individual will become an expert on the topic, either totally wrong or right. Unfortunately, many have probably succumbed to the disease because they followed the advice of others on social media. The bright spot in this is that public health organizations are now focusing on the problem and working on ways to combat it.

One study is seeking to utilize artificial intelligence to gather intel from social that will allow them to listen in and change the messaging with valid, accurate information about vaccines and other healthcare concerns.

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