



Black Americans Receiving the COVID-19 Vaccine and Effective Strategies to Overcome Barriers: An Integrative Literature Review

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Abstract

Background Black Americans have a greater likelihood of serious morbidity or mortality from contracting the coronavirus and represent the lowest percentage of vaccinated individuals by race. This integrative literature review aims to identify the major barriers to Black Americans receiving the COVID-19 vaccine and proposed solutions to improve vaccination rates among this population.

Method Databases CINAHL and LitCovid from the National Library of Medicine were utilized to find the articles included in this review.

Results A total of seven articles were identified indicating five barriers preventing Black Americans from being vaccinated against COVID-19 that included (1) mistrust of the medical establishment, (2) uncertainty in vaccine safety, (3) limited access to healthcare, (4) inequitable access to resources, and (5) lower health literacy. The studies also indicated five strategies to increase the desire of Black Americans to be vaccinated including (1) utilizing trusted community leaders, (2) acknowledgment of the history of discrimination and trauma, (3) building more representative clinical trial cohorts, (4) continual investment into community-based organizations, and (5) mobile vaccine clinics.

Conclusion The medical establishment in the USA has significant work to do to gain the trust of Black Americans. Many of the strategies to increase vaccine uptake among Black Americans have yet to be implemented which limits the conclusions that can be drawn from them. A future study should examine the outcomes of these proposed solutions to see if they do indeed work as intended and increase vaccination rates among this population.

Keywords COVID-19 · Vaccine hesitancy · Vaccination barriers · Black Americans · Medical mistrust

Background

The coronavirus (COVID-19), first found in Wuhan, China, in late 2019, has spread rapidly and widely across the globe and led to significant mortality and morbidity worldwide [1, 2]. In early 2021, COVID-19 vaccines were developed, and studies report that vaccination is highly effective in reducing COVID-19 infections, hospitalizations, and even deaths [3, 4]. Despite this fact, Black Americans in the United States (US), who have experienced disproportionately higher rates of COVID-19-related illness and death since the pandemic began, have consistently been vaccinated at lower rates. Funk and Tyson reported data from different time periods

ranging from before COVID-19 vaccine availability through the first 3 months of 2021, when vaccines first became available [5]. In a 2020 vaccination uptake study, 42% of Black Americans were planning to receive the COVID-19 vaccine if available [5]. Although this increased to 61% of Black Americans for those that received the vaccination and planning to receive the vaccination combined in 2021, Black Americans still possess the lowest rates for vaccination in comparison to all other racial/ethnic groups, Asian (91%), Hispanic (70%), and White (69%) [5]. As of July 6, 2022, these rates of vaccination have shown to be similar to the Centers for Disease Control and Prevention (CDC) [6] reports of adults who have received at least one dose of the COVID-19 vaccine, with 59% for Black adults when compared to 87% for Asian adults, 67% for Hispanic adults, and 65% for White adults [7].

As the COVID-19 is an ongoing pandemic and different variants like Omicron are emerging, booster doses of

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COVID-19 vaccine are now recommended for all adults to shore up protection against more transmissible variants. It is primarily in response to concerns about possible waning immunity, the transmission of breakthrough infections, and the emergence of new viral variants with increased transmissibility [8–10]. Current studies have reported that people who had booster shots showed a significant decline in protection against COVID-19 infections a few months after the initial vaccination [9, 11, 12]. Those studies reported the similar results that vaccines' effectiveness against infections declined over time and increased the risk for COVID-19-related hospitalizations and severe illness. As a result of this, booster shots were recommended and emerged as the vital option to boost immunity and improve protection against COVID-19 [13]. However, the disparities existed in COVID-19 vaccination among Black Americans returned with additional recommendations for booster shots [8]. Many of the same issues that initially led to slower vaccination among Black adults exist, contributing to the consistently lagged booster rates, including high levels of vaccine hesitancy, concerns about safety, and deep-seated distrust of the medical system [8, 9].

Data from the CDC [14] shows that the rate ratio of Black Americans contracting COVID-19 is almost identical when compared to that of White Americans, but the death toll for Blacks is about double. Race and ethnicity are connected to other health determinants such as socioeconomic status and access to healthcare [14]. Egede and Walker [15] postulate that structural racism is a determinant of population health. They define structural racism as the methods a society uses to promote prejudice by way of mutually reinforcing inequitable systems [15]. Structural racism in the US molds the dispersal of social determinants of health and social risk factors, creating disparities in vaccine hesitancy due to a lack of trust in terms of adverse effects of the COVID-19 vaccine and medical system through historical and contemporary trauma [15]. A study reported that vaccine hesitancy was higher among African Americans than any other race/ethnic groups that contribute to lower vaccination uptake [16].

Research Problem

Black Americans have a 2.8 times higher rate ratio than their White counterparts in needing to be hospitalized after contracting the COVID-19 [17]. Black Americans in the US work in the service industry or other blue-collar occupations in greater prevalence than Whites [18]. Many of these jobs are unable to be done remotely and became part of the essential work during the pandemic putting a myriad of Black Americans at an increased risk of contracting the virus. According to a survey conducted by the CDC, only 59% of Black adults in the US reported they had been vaccinated; this is much lower than the national average of

75% [6]. However, there is limited synthesis of published data that examine the barriers that this minority population faces to receiving the COVID-19 vaccination and successful strategies to overcome these hurdles to improve COVID-19 vaccine uptake.

Research Purpose

The purpose of this literature review was to identify barriers Black Americans face to receiving the COVID-19 vaccination, and to identify strategies that have been successfully implemented to increase the willingness of Black Americans to be vaccinated. Identifying these barriers and strategies enables the government to develop programming to target these specific obstacles to yield a higher percentage of COVID-19 vaccinations in the US.

Research Question

The following research questions are addressed in this literature review:

1. What are the barriers that prevent Black Americans from receiving the COVID-19 vaccine?
2. What strategies are currently being used to increase the desire of Black Americans to be vaccinated and what more can be done to continue to improve this percentage?

Methods

Research Design

An integrative literature review design was employed to examine the barriers Black Americans face in receiving the COVID-19 vaccine and proposed solutions. Integrative literature reviews identify gaps in current publications while illuminating the need for further research [19]. An integrative literature review is appropriate for this study because there is no single answer to the research questions posed, eliminating the possibility of a systematic review. Of the studies identified for this review, none utilized methods similar enough to be reviewed by meta-analysis. Integrative literature reviews examine what methods have been utilized successfully in hopes of contributing to the body of knowledge and to nursing practice [19]. This integrative review followed Whittemore and Knaff's [20] framework that includes five stages: problem identification (identification of the problem that the review will be addressing), literature search (comprehensive search of relevant literature using well-defined literature search strategies), data evaluation (evaluation of the quality of primary sources), data analysis (thorough interpretation

of primary sources and synthesis of literature consisting of data reduction, data display, data comparison, conclusion drawing, and verification), and presentation (conclusion about results in table or diagrammatic form).

Problem Identification

The problem identified for this study is that Black Americans face barriers to getting vaccinated for COVID-19. After deciding upon this topic, a search of the existing literature was performed to accumulate information on the related concepts. All the primary sources were evaluated for overall quality and assessed to determine their relevance to the study. Tapering the sources found to only those pertinent to the study allows for a more thorough analysis of the data. The most important citations were interpreted and presented to draw conclusions across multiple studies [19].

Literature Search Strategies and Limitations

We performed searches in the following databases—the Cumulative Index to Nursing and Allied Health Literature (CINAHL) and LitCovid from the National Library of Medicine—to identify research studies up to August 12, 2022. The database of CINAHL provides access to nursing literature, so this database was chosen because of researchers’ nursing background and the topic being highly relevant to nursing professionals. LitCovid (National Library of Medicine) was chosen as database because it covers up-to-date scientific information about COVID-19 and provides access to relevant articles in PubMed. The following key search terms were used to guide the searches: vaccine/vaccination, Black/African American, hesitant, barrier, overcoming, strategies/solutions, and COVID-19/corona. The following key term combinations were used to address the two research questions: “Black* OR African American* AND Covid* OR corona AND vaccin* AND barrier OR hesita* AND strategy OR solution.”

The search across the two databases using Boolean combinations of the keywords “Black* OR African American* AND Covid* OR corona AND vaccin* AND barrier OR hesita* AND strategy OR solution” resulted in 243 research articles. The first author reviewed the 243 publication titles to determine their eligibility. Inclusion criteria consisted of articles relating to barriers that Black Americans face in getting the COVID-19 vaccine. Due to the recent nature of this disease, all studies included in the review were published within the last 2 years. Articles not available through the university’s library subscription and without open access were excluded from this review. Due to the topic being on Blacks or African Americans being the sole focus, any studies conducted in another country were excluded from this review along with duplicate studies found. Of the 243

publications, 56 articles did not meet the inclusion criteria. The titles and abstracts of the remaining 74 articles were reviewed. The articles selected included the keywords previously listed. The titles and abstracts of the sources were evaluated to sift out those with applicable information for this review and any that lacked pertinent information were excluded. Therefore, 14 articles were included in the final review. Figure 1 displays the process of article selection for this integrative literature review.

Data Evaluation

When initial searches were conducted, a total of 238 articles pertaining to Black Americans and coronavirus vaccines were found. To reduce the number of articles to only those relevant to the study, inclusion and exclusion criteria were applied. The titles and abstracts of the articles were analyzed for relevance. This led to a selection of 14 articles to be included in this integrative literature review.

Data Analysis and Synthesis

The purpose of this integrative literature review was fulfilled through examination of these 14 articles. Data obtained was organized into a table that lists the purpose, results/variables of interest, limitations, barriers, and solutions. From the articles selected, data was compiled into Table 1 below. A total of two research questions were posed for this integrative literature review. Research question one examined the barriers Black Americans face to receiving a COVID-19 vaccine.

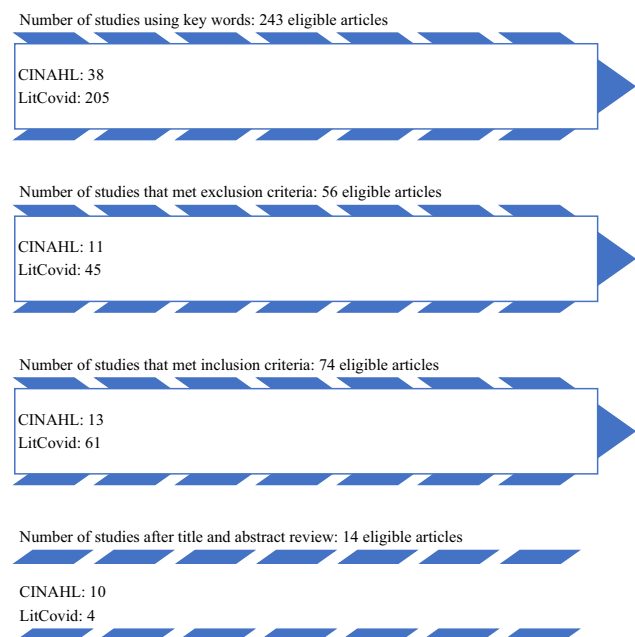


Fig. 1 Analysis breakdown of research articles

Table 1 Data collection table

Source (author(s)/year)	Purpose	Results/variable of interest	Limitations	Barriers	Solutions
Ojikutu et al. (2021)	Investigate ways in which trust can be built between the historically mistreated Black community and medical professionals	Community investment is the preferred method of reaching minority communities. This is presented in contrast to simply community outreach	Community outreach is temporary	Deep-rooted mistrust of medical industry. Suboptimal enrollment of representative diversity in clinical trials. Pandemic amplified existing health inequalities	True investment in communities of color. Community engagement projects that are ever evolving to address the issues/needs of the people
Brandt et al. (2021)	Looking into possible barriers and promoters of COVID-19 vaccination in youth populations	Primary reason for rejecting vaccination is lack of trust. Disparities in healthcare need to be addressed to engage historically marginalized communities in vaccine dissemination	Only 911 participants, diversity percentages of which did not match up with current population trends	Concerns about vaccine side effects, safety, and effectiveness Black Americans have a general lack of trust in medical system	Materials specifically designed to meet the concerns of unique populations should be created and distributed. Engagement of historically marginalized community members at every level of planning and dissemination of information
Privor-Dumm & King (2020)	Address vaccine hesitancy by engaging trusted community messengers—pastors	Past negative experiences with healthcare and unequal treatment have led to mistrust in medicine. Acknowledging the history of mistreatment and providing evidence-based responses to inquiries can help address anxieties	Even trusted community messengers like pastors are unlikely to change the minds of individuals who are extremely untrusting	Distrust in the vaccine and medical institution due to history of mistreatment. Unequal access to care, health disparities. Feelings of being treated inequitably by providers	Vaccine acceptance information needs to be catered specifically for the communities it is being implemented in. Pastors and other respected leaders in the community can work with the government to build trust and share information. Acknowledging past and present mistreatment
Woko et al. (2020) [16]	Investigate potential contributors to the disparity of Black Americans willing to be vaccinated against COVID-19	COVID-19 vaccine-related behavioral beliefs and trust in four COVID-19 information sources—mainstream media, social media, former President Trump, and public health officials and agencies	This study only investigated two of the potential contributors to this disparity	History of discrimination and unequal treatment by the medical establishment has bred mistrust. Black Americans are less likely to be insured. Unfavorable beliefs about vaccine	Mass communication efforts utilizing trusted authorities to distribute accurate information. Future studies to understand the different forces driving resistance
Abdul-Mutakabbir et al. (2021)	Propose solutions to overcoming barriers to Black Americans receiving the COVID-19 vaccine	A three-tiered approach consisting of engaging Black faith leaders, healthcare professionals delivering accurate educational information, and developing a mobile vaccination effort	This study has just one example of the mobile vaccination effort, although a positive one	History of distrust in, and inadequate access to, healthcare. Limited access to a computer, internet, and transportation	Using faith leaders from the Black community to deliver accurate information about vaccine. Mobile vaccination effort to reach underserved communities. A faith summit about vaccines. Equitable allocation of vaccines

Table 1 (continued)

Source (author(s)/year)	Purpose	Results/variable of interest	Limitations	Barriers	Solutions
Ferdinand, K. C. (2021, April)	Discussing the need for cultural humility when educating Black Americans on vaccine information	Overcoming the mistrust Black Americans hold against the medical institution	No data available on the efficacy of the solutions posed	Deeply rooted mistrust in healthcare. Social determinants of health (limited finances, healthy food, education, healthcare coverage, job flexibility)	Public health messaging. Recognition of injustices suffered by Black Americans in the healthcare system. Use of trusted messengers to disseminate vaccine information
Ferdinand, K. C., Nedunchezian, S., & Reddy, T. K. (2020, December 6)	Compare and contrast vaccine hesitancy between influenza and COVID-19 vaccines	Barriers to Black Americans receiving the influenza vaccine is used to discuss the similar barriers to COVID-19 vaccination	This study was published prior to the release of the vaccine to the public, so some things have changed since it was authored	Years of bias and mistrust in orthodox medicine. Safety concerns and environmental barriers to vaccine access	Educational campaigns and policy initiatives—creating and funding a COVID-19 vaccine risk communication and community engagement program. Governmental agencies need to work with trusted members of the community to develop programs to get accurate information out. Eliminating disparities to access the vaccine
Gutierrez et al. (2022)	To identify predictors for low likelihood of COVID-19 vaccination among women in the US and determine whether reasons for low intention were modified by race, ethnicity, or other characteristics to better understand the factors that shape attitudes toward the COVID-19 vaccine and help inform multilevel interventions	Self-reported low vaccination likelihood and concerns influencing vaccination decision	Data was collected in January 2021, so there is possibility that vaccine sentiments have changed	Lack of trust and vaccine-related concerns	There is a need to target messaging to specific populations, including pregnant and breastfeeding women
Kicorian and Turner (2021)	To explore COVID-19 vaccine hesitancy and examine factors that may help remedy such hesitancy among Black and Hispanic Americans	COVID-19 vaccine hesitancy	Cross-sectional design only captures a single point in time when COVID-19 vaccines became available	Mistrust	Black medical professionals discussing the vaccine
Osake et al., (2022)	To explore barriers and facilitators of COVID19 vaccine acceptance among Black and Hispanic New Yorkers	Facilitators of vaccine acceptance	Underrepresentation of younger age groups (ages 18–21 years) and limited generalizability due to study conducted in a New York metropolitan area	Mistrust, lack of adequate information, misinformation about the vaccine	The key drivers of vaccine acceptance are provision of reliable vaccine-related information, use of social networks, seeing people like themselves receive the vaccination, and trusted doctors

Table 1 (continued)

Source (author(s)/year)	Purpose	Results/variable of interest	Limitations	Barriers	Solutions
Momplasisir et al. (2021)	To assess their attitudes, beliefs, and norms around a COVID-19 vaccine among Blacks	Drivers of vaccine hesitancy	Focus groups were held between July and August 2020 which sentiments toward COVID-19 vaccine may have changed	Mistrust in the medical establishment, concerns with the accelerated timeline for vaccine development, limited data on short- and long-term side effects, and the political environment promoting racial injustice	Recommendation from a trusted healthcare provider
Budhwani et al. (2021)	To ascertain sentiments toward COVID-19 vaccination among rural African American or Black (AAB) adolescents	Sentiments toward COVID-19 vaccine	Findings not generalizable to all rural AAB adolescents	Fear of side effects, misinformation, and institutional distrust	A socioecological approach is needed to deliver vaccine-promoting messaging at multiple levels. Public health professionals and clinical providers should tailor messaging to rural AAB adolescents
Stoler et al., (2021)	To test the hypothesis that Black race would interact with medical trust to undermine COVID-19 vaccine willingness	Vaccine hesitancy	Findings may not be generalizable to Black population	Medical mistrust	Build medical trust by addressing structural racism
Stoler et al. (2022)	To assess a diverse set of correlates of COVID-19 vaccine hesitancy identified in previous studies using US survey data collected in July–August 2021	Vaccine hesitancy	While findings highlight wide sources of vaccine hesitancy, they may not be generalizable to Black population	Mistrust, belief in misinformation about the COVID vaccines, and political identity	Leadership should develop policy focused on mitigating misinformation about the COVID-19 vaccines and further assessment of assessing other predictors of belief in COVID-19 misinformation and vaccine hesitancy

Data from the selected articles relating to healthcare disparities and other hurdles African Americans face in recruitment for vaccine trials and receiving vaccines were studied. After reviewing the articles, overarching barriers that Black Americans faced were identified. Research question two examined what can be done and is currently happening to recruit a higher percentage of Black Americans to receive a vaccination against COVID-19. Through the review of the articles, overarching effective strategies to increase COVID-19 vaccination were identified.

Results

All 14 studies revealed barriers that Black Americans face to receiving the COVID-19, vaccine hesitancy, and strategies used to increase vaccination. Studies identified four barriers to receiving the COVID-19 vaccine that included (1) mistrust of the medical establishment, (2) limited access to healthcare, (3) inequitable access to resources, and (4) lower health literacy. In addition, studies identified the uncertainty in vaccine safety and five strategies to increase COVID-19 vaccination in Black Americans.

Barriers

Mistrust in the Medical Establishment

An overall mistrust in the medical establishment was identified as a major barrier in each of the articles chosen for this review [21–27]. This absence of trust from Black Americans comes from a long history of abuse and exploitation by medical entities. Many of the articles chosen point to the tragedy of the Tuskegee syphilis experiment, which has become the hallmark example of the mistreatment Black persons have experienced in healthcare [23, 24, 26, 27]. The water crisis in Flint, Michigan, as well as the controversial usage of Henrietta Lacks' cancer cells have been cited as further examples of the establishment's abuse of Black Americans [28]. With the COVID-19 vaccine in particular, political influences have tainted the public's perception of the pandemic and vaccination [28].

Limited Access to Healthcare

In general, Black Americans tend to have insufficient access to healthcare and lower rates of having health insurance [28]. Healthcare is not a guaranteed right in America and as a result millions of citizens are uninsured or underinsured. This leads to many not having a regular primary care doctor that they know and trust to ask their opinion [22]. When one is uninsured or underinsured, seeing a doctor is often viewed as a luxury that is avoided due to a fear of unexpected and unaffordable bills.

Inequitable Access to Resources

Black Americans are disproportionately affected by poverty and inequitable access to resources in America. Limited access to a computer, a connection to the internet, and reliable transportation are all financial-based barriers that Black Americans face [21]. The structural racism still prevalent throughout this country has led to significant shortages of resources for numerous communities of color [25]. Pharmacies are one of the locations that vaccinations are distributed, but if there is not a pharmacy in an economically disadvantaged neighborhood or town, it makes access more difficult.

Lower Health Literacy

Kutner et al. [17] did a study showing that 58% of Black Americans have a basic or below grasp on health literacy whereas in non-Hispanic Whites, this percentage was only 28%. Average health literacy was shown to increase with each higher level of education obtained starting with a high school diploma or general educational development (GED) and elevating from there [17]. It was also found that adults of all races living below the poverty line in America had lower health literacy than those above it [17]. For Black Americans, issues with health literacy can begin even prior to adulthood [29]. A study of Black American teenagers found that 65% had low health literacy [29]. A robust understanding of health literacy is essential to make informed decisions about one's healthcare, including whether to get vaccinated.

Vaccine Hesitancy

Uncertainty in Vaccine Safety

Black Americans revealed not trusting the safety and efficacy of the vaccine based on the lack of comprehensive diversity represented in the clinical trials [22, 24–27]. By October of 2020, only 3% of COVID-19 vaccine trial volunteers were composed of Black Americans [24]. During the third phase of vaccine trials, it was brought to light that participant demographics were not being transparently disclose when they were Black Americans and made up a smaller percentage of participants than their respective percentage of the country's population [25]. Among three cross-sectional studies, lack of trust in the vaccine and access to comprehensive and correct information about the vaccine served as a barrier in Black Americans while Budhawi et al. [25] and Kricorian and Turner [30] identified concerns related to adverse events [10–16]. Four qualitative studies revealed mistrust as a barrier to receiving COVID-19 vaccination. Fear and lack of information emerged as primary themes influencing vaccine hesitancy in a qualitative study [31] while a cross-sectional study identified beliefs that the vaccine is dangerous, more harmful than getting

COVID-19, causes COVID-19, and not worth the risk as contributors to COVID-19 vaccine hesitancy among Black study participants. Another qualitative study among Black-American adolescents identified fear of side effects and misinformation in relation to vaccine hesitancy. Stoler and colleagues [32] found misinformation about the COVID-19 vaccines positively correlated with vaccine hesitancy and structural racism as likely an attribute of vaccine hesitancy to further support their previous findings revealing higher levels of vaccine hesitancy in Black Americans [33]. Black Americans believe that clinical trials reward pharmaceutical companies who, in turn, do not reciprocate benefits back into the community [26]. There is also a mindset that not enough clinical trials have been done to prove the safety and efficacy of the vaccines [26].

Strategies to Increase COVID-19 Vaccination of Black Americans

Although strategies and solutions were not the sole focus nor tested, 14 articles proposed some strategies and solutions to increase COVID-19 vaccination in Black Americans. The five strategies proposed to increase the desire of Black Americans to be vaccinated included (1) utilizing trusted community leaders, (2) acknowledgement of the history of discrimination and trauma, (3) building more representative clinical trial cohorts, (4) continual investment into community-based organizations, and (5) mobile vaccine clinics.

Disseminating Information Through Trusted Community Leaders

One strategy to address vaccine hesitancy in the Black American population is utilizing trusted community leaders to be messengers on behalf of healthcare and government entities [21–24, 26, 27]. These people are respected community members that can be faith leaders, Black medical professionals, or community organizers. Having a trusted messenger disseminating accurate data may be more well received than information from an etic or outsider's perspective [21, 26]. Specifically, policy focused on mitigating misinformation is needed [32] to aid trusted community leaders in providing consistent, comprehensive messages [31]. Building trusted patient–provider relationships are necessary to educate and recommend the COVID-19 vaccine especially among patients experiencing vaccine hesitancy [34]. Policies and multi-modal interventions should promote community engagement to decrease vaccine hesitancy [31, 35]. Given that religion is a large facet of the Black-American experience, partnering with pastors and churches can be an excellent way of reaching an audience that may otherwise hesitate to trust government or healthcare institutions [26]. These trusted messengers should be known to have a history of kindness, compassion, and collaboration with minority communities [23] and utilize culturally relevant vaccine communications [30].

Acknowledgement of the History of Mistreatment and Trauma

Black Americans deserve recognition of the long chronicle of discrimination and abuse by the medical establishment. By acknowledging past wrongs, medical institutions can begin mending fragmented relationships with communities and individuals of color. Doctors and other healthcare professionals have historically perpetuated racist ideologies that substantiated the subjugation of and prejudice against Black Americans [23]. This wretched history cannot be forgotten and must be addressed for Black communities to be able to harbor trust in the healthcare system. In fact, difficult community dialogues are crucial to engaging Black Americans and addressing vaccine hesitancy [33]. More trustworthy healthcare systems that address vaccine hesitancy and improve access to the COVID-19 vaccine through the lens of equity based on the communities they serve are needed [36].

Making Clinical Trials More Inclusive

This solution is predicated on the first two strategies being successful. If Black Americans cannot trust the medical community or the vaccine safety, then increasing the number of people of color in clinical trials will be difficult, if not impossible. In October of 2020, Black Americans made up only 3% of those willing to partake in a COVID-19 vaccine clinical trial [23]. Other factors influence this discrepancy as well such as jobs that do not offer paid time off and clinical trial reimbursement not being competitive versus compensation made by working. Vaccine manufacturers also need to build their trial cohorts with complete transparency so that any racial and ethnic discrepancies can be noted and addressed [23].

Investment in Communities

This pandemic offers a chance for real contribution to communities of color beyond just fleeting outreach programs. True investment in these groups of marginalized individuals can help to diminish distrust and ultimately improve vaccination rates [23, 25]. Providing capital to communities can work to generate financial worth, while also providing support for societal needs and problems [25, 39]. The purpose of this funding is to nurture new relationships between Black Americans and institutions of power. The historical lack of investment into community organizations led by Black Americans is a result of structural racism [39].

Financing stakeholder organizations in the present can cause more collaborations on experimentation and intervention subsequently [25]. Establishing these relationships can help to build the trust necessary to change Black American's perception of the COVID-19 vaccine [25].

Mobile Vaccine Clinics

One proposed mechanism to counter the discrepancies in local availability of vaccine distribution sites is to offer mobile clinics. Only one of the reviewed articles makes mention of this intervention but shows promising data for its efficacy. In one study [21], the mobile vaccination clinic is just one part of a three-pronged approach to address barriers to vaccination. First, they partnered with Black congregation leaders, followed by disseminating knowledge provided by Black medical experts [21]. The final step was to institute a vaccine clinic in a church parking lot of a predominantly Black community [21]. Bringing vaccine distribution directly into Black communities demolishes barriers such as the need to register on the internet to schedule a vaccination appointment or to have to travel to a vaccine clinic [21].

Discussion

The purpose of this integrative literature review was to identify barriers Black Americans face to receiving the COVID-19 vaccination, and to identify strategies that have been successfully implemented to increase the willingness of Black Americans to be vaccinated. Consistent with literature, this current review indicates the barriers to vaccination in Black communities. The long history of discrimination and unequal treatment Black Americans have faced makes it most evident that this population has deep-seated suspicion and hesitation regarding the healthcare system [21–27]. Every article selected for this review touches on the mistrust of the medical establishment as a barrier to Black Americans getting vaccinated against COVID-19. This is clearly one of the largest hurdles that must be overcome to increase willingness to be vaccinated in this community. Decades of inequality and injustices against Black Americans cannot be erased or forgotten overnight. To heal this community and build a bridge of trust between Black Americans and the medical establishment, future work and resources must be put into motion.

Building trust is the paramount solution to existing barriers to vaccination, but it cannot be done without first addressing the major health disparities Black Americans face [24, 26]. Massive investments into communities of color are needed to increase the availability and affordability of healthcare [25, 39]. Medical care is a human right and the for-profit healthcare system in America is unethical and fosters the health disparities that run rampant here. Perhaps if substantial and sustained funding was being used toward building up Black American communities, it would prove easier to recruit representative numbers of people of color to participate in clinical trials [25]. Increasing diversity in

the patients represented in future clinical trials can help to alleviate some of the concerns regarding safety [23, 24].

Recognizing that vaccine hesitancy is deeply rooted in mistrust is by far the most fundamental yet the most glaring point of reference in the beginning to understand the resolution to the problem itself. Mistrust in healthcare systems, government agencies, timelines for research development, social media content, and safety and efficacy of the vaccine itself continues to be among the top discussions for those who choose not to vaccinate. Healthcare providers will best serve the ability to build trust through the ability to appeal to the community through the trusted voices of healthcare professionals from the communities they have served, offering culturally competent education and the ability to test and vaccinate. Other opportunities include promoting digital platforms with information appealing to the Black-American population. The use of the digital platform provides social advocacy and empowerment for those aged 18–24 and with perceptions of low risk of contracting COVID-19. Other studies have also shown that the use of mobile devices to support the dissemination of information that is both timely and trusted, is highly beneficial.

There is no single reason to explain the lesser percentage of Black Americans receiving vaccination for the COVID-19. However, vaccine hesitancy is less likely the sole result [40, 41]. Similarly, there is not just one solution that will eliminate the barriers being faced. Those looking to have a firm grasp on problems identified with vaccine should take into consideration that residency and political affiliation could also be factorial considerations. Conversations in consideration of increasing vaccination status should include participants from leaders in regions identified as having lower vaccination rates and their trust in the strategies ability to be safe. Engaging trusted community leaders to disseminate important information to the population has proven to be beneficial [21–24, 26, 27, 41]. Communities of color are more likely to respond positively to guidance when it is coming from an inherently trusted source [21–24, 26, 27]. The US medical establishment needs a multifaceted approach to combat health disparities and build trust in healthcare and COVID-19 vaccinations [21, 23, 24]. Future exploration of how to ameliorate the barriers to Black Americans receiving the COVID-19 vaccine is needed.

Limitations

This literature review is limited by the small number of research articles that were included. This is reflective of the relative lack of data and articles that had been written on this topic when the research was performed. Many of the articles chosen for this review propose solutions that are logically sound but have either not been implemented or have not

been followed up with post-implementation. This limits the conclusions that can be drawn from the strategies suggested.

Implications

The COVID-19 pandemic has dramatically impacted the healthcare system in the US and the nurses on the front-lines during this pandemic. Data is clear that symptoms of COVID-19 are much more manageable and less frequently require hospitalization in those that are vaccinated. Therefore, increasing vaccination rates among all Americans should be a priority of healthcare professionals everywhere. Specifically, research supports the significant role that Black healthcare professionals can play in reaching the Black community through the provision of vaccine education [21]. More doses of the vaccine being distributed will equal less strain on an already crumbling medical establishment. It is important that nurses be armed with the latest data and best ways to communicate it to combat vaccine hesitancy and misinformation with their patients.

Implications for Research

More research may be necessary to isolate the specific concerns of unique communities to produce educational material that is catered to these populations. Research should also be performed to determine the best means of disseminating this information to these groups. Now that booster vaccine doses are being recommended and distributed, future research should expand to include barriers Black Americans face to receiving these vaccinations as well. Researchers must prioritize building trust [28].

Conclusion

The COVID-19 will likely not be the last novel virus spreading around the globe, so it is important to learn from what went wrong during this pandemic to not let history repeat itself. The COVID-19 pandemic is not over yet, and the solutions studied in this review can still be relevant and helpful if they are instigated properly. The science is clear that vaccination is the best tool available to help mitigate the disasters caused by this disease. It is imperative that the US starts doing the long and hard work of building trust in healthcare in Black Americans. Previous wrongs cannot be undone, but the medical establishment should begin by acknowledging the atrocities of the past so that people of color have a reason to give their trust.

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previous versions of the manuscript. All authors read and approved the final manuscript. All authors agree to be accountable for all aspects of the work and their appropriateness in integrity and accuracy.

Declarations

Competing interests The authors declare no competing interests.

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