Original Report

Let Us Just Ask People What They Think: Community Perceptions and Recommendations about Coronavirus Vaccination

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Introduction: Despite widespread efforts to promote coronavirus disease 2019 vaccination in the United States, a significant segment of the population is still unvaccinated or incompletely vaccinated.

Objective: The objective of this study was to understand attitudes toward the vaccine in patients presenting to an urban emergency department.

Methods: We used a qualitative analysis and semistructured interviews with a convenience sample of patients presenting to an urban emergency department from January 18, 2021, to March 14, 2021. Our final sample consisted of 32 people.

Results: We found that people trusted their own medical providers rather than popular or political figures. Critiques of the vaccination program highlighted difficulties in navigation and perceptions of inequity.

Conclusions: Equitable distribution strategies and honest messaging may facilitate acceptance of the coronavirus disease 2019 vaccine. Trustworthy sources for vaccine knowledge should be used to target populations in which vaccine hesitancy is a persistent concern. *Ethn Dis.* 2024;34(1):33–40; doi:10.18865/ed.34.1.33

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Introduction

In 2020, the novel coronavirus significantly altered the global public health landscape. The availability of the vaccine at the end of the year brought some hope that the pandemic could be curtailed. States responded with a myriad of efforts to vaccinate communities.[1] Despite these efforts, the segment of the United States population fully vaccinated is still well below the rate needed to achieve herd immunity and protection against emerging variants of the virus.[2]

At the time of the study, Washington, DC, had over 40% of its adult population immunized against coronavirus disease (COVID).[3] Although numbers have improved, a significant segment of the population is still not completely vaccinated.[3] Within Washington, DC, there is significant variation in vaccination rates by race, ethnicity, and geographic area. Wards in the city with some of the highest rates of COVID infections and deaths have had much lower vaccination rates. Residents in these areas continue to bear the continued burden of COVID in Washington, DC.[4] Black individuals have demonstrated particularly high death rates from the disease yet have the lowest vaccination rates of all racial and ethnic groups in Washington, DC.[3] It is unclear if these barriers are based on issues of access, perception, or both.

Prior pandemics have taught us that vaccination is the most effective way for a society to prevent infectious disease outbreaks and even eradicate diseases.[5] We have seen that through vaccination, the morbidity and mortality of diseases like measles, polio, and tetanus have been drastically reduced. Despite overwhelming evidence supporting the value of vaccines in the prevention of disease and disability, a significant segment of the population has vaccine hesitancy, defined by the World Health Organization as a "delay in acceptance or refusal of vaccination despite the availability of vaccination services."[6] Vaccine hesitancy is multifactorial and is influenced by complacency, inconvenience, and lack of confidence in vaccines.[6] It is affected by variables such as time and location and can often be disease specific. Vaccine hesitancy is ubiquitous, is described in more than 90% of the countries in the world, and is pervasive across different socioeconomic statuses but may be geographic in nature.[7] The World Health Organization has identified vaccine hesitancy as a global health threat and formed a Strategic Advisory Group of Experts (SAGE) devoted to guidance on the topic.[8]

Many of the current recommendations about approaches to reduce vaccine hesitancy rely on public health

expert opinions. Although these are notable and important, understanding the perspectives of individuals in the community directly affected by the disease may add insight that cannot be obtained with expert panels alone.

The objective of this study was to understand the perceptions about COVID, the public health approach to its management, and vaccination in a sample of patients presenting to an urban emergency department (ED) using a qualitative approach. Although other studies have discussed public opinion about COVID, public health interventions, and the vaccine more broadly, there is a paucity of literature on public attitudes toward its equitable distribution.[9–12] Further, our population provided insights about how politics and popular opinion shaped their views. We sought to understand how to best tailor vaccine distribution strategies to capture the population most at risk for not only contracting the virus but also succumbing to adverse outcomes from the disease.

Methods

Study Design

This study was a qualitative analysis that used semistructured interviews with a convenience sample of patients presenting to an urban ED over an 8-week period from January 18, 2021, to March 14, 2021.

Participants and Recruitment

To obtain a sample representative of the population, we recruited patients from wards throughout the city. Wards fell into 2 general categories. Four wards had relatively higher rates of COVID infections and lower vaccination rates than the city average. Four wards had lower rates of COVID infections and higher vaccination rates than the city average.[3] We oversampled the former to better understand barriers to vaccine uptake. We also stratified recruiting to ensure that we would get individuals from a diverse sample of age groups (<35, 35 to 64, and >65) to better understand generational differences in communication and barriers and facilitators of vaccination.

Patients who were in the ED for treatment were approached by trained research assistants about their willingness to participate in the study. Patients were consented verbally and sent a study information sheet for review. They were given the option to interview in the ED or at a later date by phone or via Zoom video.

Interview and Design

Interviews were conducted by 3 members of the study team (CH, MC, and CP). We piloted our interview protocols and adjusted them based on initial feedback before initiation of the study (pilot interviews were not included in the analysis). We first administered a brief demographic survey that collected information about age, education, ward of residence, and gender. Next, we conducted a semistructured interview addressing a number of domains related to opinions about vaccines, barriers and facilitators of receipt, use of communication outlets that guided decisions, and participant-generated recommendations for interventions to reduce hesitancy. Participants were given a $25 Amazon gift card at the conclusion of their interview. Data collection continued until saturation was reached with no emerging themes. Interviews were audio recorded and sent for professional transcription.

All transcriptions were read by the principal investigator, co-investigator, and a research assistant (JB, CH, and CP). Using grounded theory, members of the research team met weekly to discuss further themes that emerged during interviews and adjusted the interview protocol accordingly.

Data Analysis

We used the Matrix of Determinants for Vaccine Hesitancy developed by the SAGE workgroup to help us analyze our qualitative data. In brief, the SAGE matrix involves the following 3 categories: (1) contextual influences that shape hesitancy (this includes social, cultural, and historical influences that shape vaccine uptake), (2) individual influences arising from personal or peer experiences, and (3) vaccine- or vaccination-specific issues related to the particular vaccine or challenges in administering the vaccine.[8,13]

Starting with an initial codebook with input from the SAGE Matrix, 3 members of the research team (JB, CP, and CH) reviewed and independently coded 3 transcripts. We used open, axial, and summary coding to highlight areas of our text according to our codebook, noting other themes that emerged.[14] Members of the team met several times during the course of the study to make adjustments to the codebook in response to themes that emerged during the interviews.

Two members (JB and CH) coded all transcriptions. Disagreements were resolved by consensus, and in cases in which these could not be resolved, a third member of the research team (CP) weighed in to resolve differences.

Ethical Approval

This study was approved by the Institutional Review Board at the study institution. All data recorded for demographic purposes were stored on an encrypted platform and destroyed after use for the study.

Results

We approached 71 people for the study in the ED. Potential participants who elected to be contacted after discharge were contacted by phone up to a total of 3 times. We were unable to interview 39 people due to either lack of availability to meet or being unreachable at the given phone number. Our final sample consisted of

Table 1. Demographics of the sample (n = 32)

	n
Race	
Black	21 (65.6)
White	6 (18.8)
Hispanic	5 (15.6)
Gender	
Male	15 (46.9)
Female	16 (50.0)
Other/nonbinary	1 (3.1)
Wards	
High COVID/low vaccine rate	19 (59.4)
Low COVID/high vaccine rate	13 (40.6)
Education	
High school or less	9 (29.0)
Some college	9 (25.8)
College graduate or more	14 (45.1)
Insurance	
Private	16 (50.0)
Medicaid	6 (18.8)
Medicare	5 (18.5)
Other/unknown	2 (6.3)
Average age	51.8 (SD 17.18)
Vaccination decision	
Will receive	25 (78.1)
Will not receive	4 (12.5)
Undecided	3 (9.4)

SD, standard deviation

32 people. The demographics of our sample are shown in Table 1. Sixty-five percent of our sample was Black. Fifty-nine percent came from wards that had higher COVID-19 infection rates and lower COVID-19 vaccination rates than the city's general average. Over half of our sample had private insurance, and 45% had at least a graduate education. The majority of participants reported that they planned to receive a vaccine once one became available.

Contextual Factors

Contextual reasons were frequently cited as playing a major influence in the decision to potentially get vaccinated (Table 2). Leadership and political context were highlighted as sources of influence. Many thought that federal public health agencies, such as the Centers for Disease Control and Prevention and the Food and Drug Administration, had been politicized under the last administration and therefore were not perceived as trustworthy. On the other hand, selected trusted public figures, such as Dr Anthony Fauci, were viewed favorably. Local political leadership was also viewed positively. As 1 participant noted, "I look to the mayor because she's in charge of the city. I think what she says is very meaningful and important." While 1 participant did question the profits made from vaccination efforts, in general, mistrust of the pharmaceutical industry did not appear to be a major issue.

Polarization of the media was viewed by participants as problematic. Many thought that media outlets provided inconsistent messaging, causing them to question vaccine reliability. They also noted that news about the vaccine tended to be skewed toward presenting negative information rather than more positive stories. One individual noted, "You don't really hear too much about the good, they mostly focus on the bad far as the vaccine."

Some individuals noted geographic, religious, and historical issues of mistrust as barriers to vaccination. One individual in a low-vaccine ward noted the difficulty of getting the vaccine in their neighborhood. Another mentioned that many still had concerns from prior events, such as the Tuskegee syphilis study. A Black participant noted, "I hate to be negative, but my people have been marginalized and so to expect them to jump for joy now, it's difficult."

Individual Factors

Individual factors that influenced the decision to get a vaccine were quite common (see Table 2). Trust in physicians was important to participants. Many looked to their own personal physicians as well as the opinions of health care experts in the media. As 1 person noted, "Politicians? No way. Celebrities? I just listen but with a grain of salt. My doctor. The people who are actually into that field doing something is who I would listen to. The ones who have studied it. This is their passion."

It was also important for individuals to get information from individuals who they knew personally. Participants noted the importance of family members and friends sharing their experiences through social media platforms. "Everybody I know who's getting the vaccine is posting it and talking about how excited they are. I don't give a [expletive] about a celebrity doing it. It's about your colleagues, your friends, your loved ones, the people you actually know."

Although some participants did have concerns about getting vaccinated, they viewed their own personal health risk or fear of dying from COVID as outweighing concerns about the vaccine. Others believed that getting the vaccine would benefit the community. Most seemed to have confidence in vaccine science, although a few had doubts about vaccines in general. Many viewed getting the vaccine as contributing to the greater social good.

Vaccination-Specific Factors

The rapid timeline in which the vaccine was produced was a major concern for several of our participants (Table 2). Some wanted to wait to see whether others had side effects from the vaccine. Although our study was completed before the Food and Drug Administration's pause in the use of the Johnson & Johnson vaccine, individuals seemed to have more confidence in the vaccines that had been released earlier. As 1 person noted, "I've been seeing on TV the ones that take the Moderna. . .I have friends and family that took [that]. . .but this Johnson & Johnson I don't know anything about that." Others said

Table 2. Moderators of vaccine hesitancy

Domain	Number of people commenting	Theme	Illustrative quote
Contextual	n = 29	Religion/culture/gender	Some people, they've got religious beliefs, they don't want to put stuff in their body, "What is that? I don't trust it."
		Influential leaders	I trust anything that Dr. Fauci says. I find he's reliable.
		Geographic barriers	At first, getting a COVID vaccination in this neighborhood was difficult. I had to get belligerent.
		Communication and media	In an ideal world, the TV stations and the cable TV stations could be helping. When you have liberal entities and then conservative entities, then they're saying different things, that's not consistent.
		Politics/policies	I have absolutely no trust in the FDA because they approved pills based on politics, not based on whether or not the pill works, so I have no confidence that what I'm being told about the vaccine is true.
		Historical influences	A lot of people in this neighborhood who think the Tuskegee Study can still happen in 2021. Can you imagine that?. . .[It shows] you the level of trust they have in their government.
		Pharmaceutical industry	What makes a lot of people confused about whether they want to take it. Is it all for them, or it's just some way of somebody collecting money or making money or whatever it is?
Individual and group influences	n = 29	Personal, family, or community member experiences	It's about your colleagues, your friends, your loved ones, the people you actually know.
		Beliefs, attitudes about health and prevention	I remember when I was a kid, I guess, measles and polio was the thing that was around then. . ., the doctors that found the cure, and the thing to do was to immunize the people against that.
		Knowledge/awareness	If they don't come from a doctor or something that I've read, and I think that's going to give me the right information, I'm not just going to jump up and take it. I'm going to do my own research and see what's going on.
		Health system provider trust and personal experience	My psychiatrist [got the vaccine]. Matter of fact, we just had a talk today. He just got his second shot from the vaccine.
		Risk/benefit	For me, personally, I have a lot of the risk factors. I have several risk factors besides being borderline elderly now, I'm also overweight and I do have diabetes.
		Immunization as a social norm	My reason for taking the vaccine is because I think today that is the best hope to get this virus under control. I think I have a responsibility to take it.
Vaccination-specific issues	n = 7	Risk/benefit	I had to think to myself, die of COVID, which I've known people who've died of COVID, get COVID and now have severe disabilities, which I've known people that's happened, or get the vaccination and hopefully don't get COVID.
		Introduction of new vaccine	I don't want it because I don't feel like it's been tested long enough. I want to wait until next year so more people get the vaccine before I get it because I don't feel like they tested it long enough.
		Design of program	Most elderly people don't have computers, people over 60 or 70, so they wouldn't know how to go online
		Reliability/source of supply	I don't know how it was made or who made it but it doesn't sit well with me because it's a million and one other diseases out here. . .[and we have a vaccine] 6 months to 1 year later and it doesn't sit well with me.
		Strength of recommendations and/or knowledge base of health professions	I attended a lecture with a doctor. . .who explained this new RNA, the vaccines that are not like the old egg vaccines.

FDA, Food and Drug Administration

Table 3. Source of information about COVID and vaccine

	Number of individuals citing by age group			
Source	**Total (n = 32)**	**<35 (n = 7)**	**35 to 64 (n = 16)**	**65+ (n = 9)**
Social media	24	7	13	4
Television	22	4	10	8
Internet	18	6	6	6
Word of mouth	9	2	5	2
Print	6	1	2	3
Radio	2	0	1	1

they would not get the vaccine at all. One person noted it would take "200,000 or 100,000 [dollars]" to convince them to get the vaccine.

The vaccination program itself was criticized by some as being inequitable. The method of accessing vaccination appointments via the internet was viewed as taxing, especially for the elderly. Often slots ran out early. One person remarked that vaccination locations were difficult to access, especially for communities of color, the elderly, and persons with disabilities. One participant stated, "When I went to the grocery store. . .the very first thing that I said was, 'Where are the Black people?' [We] were the only African Americans in a line with, it must have been 70 White people."

On the other hand, 1 Hispanic participant noted that because the vaccine program was open to all individuals in the city without the need for insurance or special citizenship requirements, it helped facilitate receipt of the vaccine by many undocumented individuals. "The Spanish people, they don't [usually go] to the clinic because they're afraid because they don't have maybe some documents or paper. . .These vaccines they don't go to get that information to the doctor, so I think there will be a good impact."

Participants did not express concerns about cost, mode of administration, or the vaccine schedule, although these were components of the SAGE model.[8] The majority of contextual comments, such as those related to political and historical factors, tended to skew negative and be viewed as barriers to the receipt of the vaccine. On the other hand, individual comments were positive and tended to be viewed as facilitators of receipt of the vaccine. Participants seem to most heavily rely on personal experience and opinions of individuals that they trusted within their personal network as well as in the medical community.

Sources of Information

Social media was the most commonly used source for information about the vaccine (n = 24), particularly for individuals under the age of 35 (n = 7) and those 35 to 65 years old (n = 14). For those aged 65 and older, television was most frequently used (n = 8) as well as the internet (n = 6). One person noted "I'm old fashioned. I'm 50 years old. . .I don't need to be on Facebook, Instagram, Twitter." Word of mouth was also important, with individuals using community meetings, family, and friends as sources. One younger person noted, "I call my mom" (Table 3).

Recommendations

Participants made several recommendations for improving vaccine outreach and ultimately increasing immunization rates. These ranged from improving communication to expanding accessibility. Examples of these recommendations can be found in Table 4 and are summarized here.

Communication Should be Diversified to Reach Multiple Segments of the Population

Participants thought that there should be better ways to reach out to residents who may not use standard forms of communication. Much of the existing outreach has been on social media and the internet. Although this was noted to be an important means of spreading the word about vaccination, use of the radio or advertisements on public transportation was thought to be a better way to reach some individuals, such as the elderly. As 1 participant noted "I have an aunt, she lives in a seniors' building. . .Most of the seniors in her building in DC. . .can't afford cable anymore." In addition, it is important to ensure that information is available in multiple languages. One Hispanic participant stated, "Have the information in different languages because not all of them speak English."

Trustworthy Figures in the Community Should be Relied On for Messaging

Individuals thought that it was important for media campaigns to use public figures who can connect with individuals in demographics who may have a historically high rate of vaccine hesitancy. One resident noted, "If Lady Gaga takes it, oh, who cares? I'm sure she's going to wear a fabulous outfit. That's not who we want really to encourage to take the vaccine." They also thought respected community leaders and personal physicians could help encourage individuals.

Table 4. Recommendations

Recommendations	Illustrative quote
Diversify communications	There should be public announcements on the radio because people aren't seeing some at television anymore because of their cable.
Use of trustworthy figures in messages	You have the vice president. . .you have the president, you have some stars like Dolly Parton... but I feel if there was a community platform of folks just like me, who are not celebrities or politicians. . .a way to express their positive experience and how it makes them feel psychologically. . . just from regular folks in the community, I'm thinking maybe more people might feel safer.
Increasing accessibility	I know West Virginia has 1 website where they do all of their signing up through. . .It should be like Zocdoc for all of the available locations in your whole state.
Use of existing networks	If we had some kind of registration system in place, so then you think, well, what registration systems do we have in place? We have DMV, we have voter registration. How can we take that information and use it to the advantage of getting people the support they need?
Immobilization of grassroots efforts	I think they need to go door to door and set up places in neighborhoods and inform people about the vaccine. Sign them up door to door, and not make hoops to jump through for people who are hesitant in the first place and are definitely not going to do it if it's inconvenient.
Requiring groups to get vaccinated	They should make everybody take it. That's the government and the mayor should make everybody take it, period.
	The health care workers at nursing homes who won't get the vaccine. . .if they don't get the vaccine, they should be fired.

DMV, Department of Motor Vehicles

Vaccine Scheduling Should be Simpler

The need to navigate multiple outlets to obtain vaccines was viewed as timely, inefficient, and difficult. Individuals thought that a centralized portal would help residents access vaccines more easily. Examples used by other cities or models such as Zocdoc were suggested to make vaccine scheduling simpler. Setting up community-based kiosks or signing people up door to door were also ideas mentioned.

Local Governments Can Use Existing Networks to Expand Access

Several individuals noted the need to expand access to underserved groups, such as the elderly and people in communities heavily affected by the virus. They recommended the use of already existing city registration systems and organized networks to reach people, such as voter registration records and Department of Motor Vehicle registries.

They also thought existing health and social outlets could be used to distribute vaccinations, such as dialysis centers, schools, homeless shelters, and regularly scheduled advisory neighborhood committee meetings. One individual noted the need to use existing trustworthy organizations to administer vaccinations for difficult-to-reach populations, "It's really hard to strike up a rapport with somebody and say, 'Hey, do you want your vaccination?' They say, 'yes,' then go find them 3 weeks later to give them their second one. It has to be a real relationship builder. You need to work with those groups that are able to have those relationships."

Grassroots Efforts Can Support Vaccination Efforts

Several participants thought grassroots efforts could be immobilized to increase vaccination rates. One resident noted the need to use community-level resources, such as neighborhood ride-share efforts in which residents could help take neighbors to vaccination sites. They also thought common pillars within the community, such as churches and local businesses, could be used. One person stated, "[Use] already existing infrastructure in the communities. Places of faith, nonprofits, local drug stores. . .need to be just fully involved in this effort."

Mandatory Requirements May Improve Vaccination Rates

A few participants thought there should be mandatory requirements for individuals to get vaccinations, either for all residents or certain employees that worked with the public, such as health care workers. However, it was noted that this could be potentially controversial.

Discussion

There have been many reasons noted for the decline in trust in vaccinations.[15–17] Trust in large corporations responsible for manufacturing vaccines and trust in the governments that buy and promote vaccines are at an all-time low.[15] However, our findings were surprising in that most participants were eager to get their vaccine against COVID.

Although our study population frequently cited their own doctor as a trustworthy source, they were also hesitant to trust the traditional public entities that physicians have used to inform their counseling, such as the Centers for Disease Control and Prevention. They generally did not want to hear the opinions of public figures such as politicians or celebrities. Individualism was a common theme in how people chose to make their decisions regarding whether they would get the vaccine or not.

Previous studies have cited a variety of reasons for personal opinions about vaccination. Reasons include inadequate knowledge about the benefits of immunization, lack of faith in vaccines, and concerns about potential short-term and long-term adverse effects.[18,19] In our population, many emphasized that they would only take the word of their own doctor or provider.

With vaccines using never-before-seen mRNA technology for a novel virus, some participants were not generally hesitant toward vaccinations but instead were hesitant toward this particular vaccine. The perceived speed of development of the vaccines and the very public coverage of any adverse events gave some pause in accepting a vaccination for themselves. Bad press about public health recommendations can often have enduring impacts.[20] Access to information through print, broadcast, and electronic media has contributed to the spread of controversial or inaccurate stories. Participants frequently cited things that they had seen on social media platforms such as Twitter or Facebook as sources of information despite often simultaneously citing a lack of trust in these sources. Social media platforms are increasingly being used by the general public and often can be a major source of misinformation impacting vaccination decisions.[21]. Although it is important for coverage of vaccines to be open and honest, the way the message is delivered also affects opinions.

Prior studies have shown that Black individuals have higher rates of vaccine hesitancy due to mistrust and other issues.[22–24.] In our sample, which had a high proportion of Black participants, many stated that they would get the vaccine, suggesting that although such distrust may be a major factor, it is not insurmountable. Experiences with a loved one who had the virus shaped their intent to get vaccinated.

Successful vaccination strategies include initiatives to increase vaccination knowledge and awareness, community engagement, and making vaccines accessible.[25] Our participants had many ideas for how to improve vaccination rates based on their own experiences using these strategies.

Limitations

There were several limitations to our study. Given that we only recruited out of a single urban ED and had a small sample size, our findings may not be generalizable to other communities. Our sample had more individuals with a high school education or less than the population of Washington, DC, and therefore may affect generalizability of the study.[26] In our study, participants had more favorable views of the vaccine than the broader US population. Many of the recommendations generated by our sample to increase vaccine acceptance among communities of color may also not be generalizable as our sample may have been biased in favor of vaccine receipt. Although the scope of our discussions with participants included national figures and politics, it also focused on local policies, which may not translate to other cities or geographic regions. Our study materials and consents were only available in English, which limited our ability to recruit Spanish-speaking residents who used the ED; as a result, we were unable to extensively examine perceptions based on language. Vaccine distribution and availability also improved during our study period; in some cases, participants had scheduled their first dose of the vaccine in the interim between scheduling and completion of the interview. When we approached our population, we also did not document a reason for refusal. It is possible that we missed a section of the population that demonstrated vaccine hesitancy in our sampling, which may have manifested as our higher-than-average willingness to get vaccinated. We also had a significant number of individuals who were lost to follow-up after we approached them for recruitment. It is possible that individuals who completed the interviews had more favorable views of receipt of the vaccine and trust in the health care environment in general. In addition, we did not confirm whether participants who stated they would get a vaccination did get one.

In conclusion, valuable lessons can be learned from querying the community about opinions to increase COVID-19 vaccination rates. Trustworthy sources should be used to promote vaccine uptake, including the use of known healthcare providers.

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