Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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COMMENTARY

Exercising empathy: Pharmacists possess skills to increase coronavirus vaccine confidence

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ABSTRACT

The coronavirus disease 2019 (COVID-19) vaccines are the essential public health intervention to confer immunity against severe acute respiratory syndrome coronavirus 2, while decreasing the risks of severe COVID-19 disease, hospitalizations, and death associated with natural infection. Public health experts agree that the public health interventions of social distancing and face coverings will only be able to successfully curtail the COVID-19 pandemic in the United States when combined with the highly effective COVID-19 vaccines. The risk for severe COVID-19 is higher in Americans with highly prevalent metabolic and cardiovascular chronic conditions as well as vulnerable demographics, such as minorities and pregnant women. Unfortunately, experience with past unethical health practices can influence current vaccine confidence in people of color and women of childbearing age. Pharmacists are well-positioned in myriad health care settings across the nation to listen to these concerns and have the conversations necessary to increase vaccine confidence. Similar to effective roles that pharmacists have had in other health prevention efforts such as smoking cessation, pharmacists possess the motivational interviewing skills to guide patients from the "precontemplation" to the "action" stages of health behavior change. This nonjudgmental, mutual understanding will help identify the individual factors influencing vaccine decision-making and bring us closer to achieving "community immunity."

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As of May 2021, coronavirus disease 2019 (COVID-19) has infected approximately 160 million people worldwide and 33 million Americans. COVID-19 has taken the lives of 3.3 million people worldwide and 582,848 Americans.[1] The novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) coronavirus has upended a sense of "normalcy" for all humans worldwide, and it has highlighted health disparities for vulnerable populations by exploiting the inadequacies in our health care infrastructure. Globally, the United States consistently has poorer health outcomes and wider health disparities despite higher health care spending per capita. Among wealthy nations, the United States has the highest rates of chronic disease burden, defined as adults with 2 or more of the following: joint pain, arthritis, asthma or chronic lung disease, diabetes, heart disease, or hypertension. Many of these same chronic disease states parallel the risk factors influencing morbidity and mortality of severe COVID-19 disease in Americans.[2,3] Similarly, women in the United States are more likely to die during pregnancy or childbirth than women in other wealthy nations, likely because of poorer access to prenatal care, higher rates of cesarean deliveries, and higher rates of obesity, heart disease, and diabetes.[4] This is compounded by COVID-19, as pregnant individuals infected with COVID-19 are not only at increased risk of severe disease than nonpregnant women but also at increased risk of untoward pregnancy outcomes.[5] Disproportionate risk of severe COVID-19 infection in minority communities and pregnant women combined with the apprehension of receiving a COVID-19 vaccine in these same demographics are widening the extant gap on COVID-19 morbidity and mortality in these populations (Figures 1 and 2). One in 4 Americans do not want to receive a

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Key Points

Background:

- Severe coronavirus disease 2019 (COVID-19) infection risk is greater in minority communities and pregnant women when compared with the general population. However, these subgroups may have elevated apprehension of receiving a COVID-19 vaccine, thereby widening the existing gap on morbidity and mortality.
- Pharmacists are some of the most trusted and accessible health professionals and therefore have a unique opportunity to engage with their local communities.

Findings:

- Real-world drivers of COVID-19 vaccine hesitancy include minorities' mistrust in health care rooted in a history of unethical medical practices as well as messenger RNA concerns about childbearing potential due to unsubstantiated infertility claims.
- Pharmacists, as trusted, accessible health professionals knowledgeable about vaccines, are well-positioned to navigate the conversations necessary to increase COVID-19 vaccine confidence in racial minorities and women concerned with childbearing.

COVID-19 vaccine, including health care workers.[6-8] It is estimated that at least 7 in 10 Americans need to be vaccinated to achieve "community immunity" from COVID-19 and put an end to this pandemic.[9]

To increase "community immunity" and decrease the infection risk from more transmissible COVID-19 variants, factors associated with vaccine hesitancy need to be addressed. Reasons for vaccine hesitancy can vary from personal experiences (e.g., mistrust, safety, trypanophobia) to general concerns about vaccine data (e.g., accelerated vaccine development). To break the cycle of health inequity resulting from COVID-19, the underlying concerns of vulnerable communities and how those concerns contribute to their health care experiences, affecting their general trust in medical care and vaccine confidence, must be understood and rectified. The following factors influencing vaccine confidence among minority and pregnant Americans have been identified:

Minorities' mistrust in health care

This pandemic has exposed discrepancies in American health care for racial minorities, but the lack of engagement with health care and clinical research is rooted in the history of unethical medical practices since the 19th century.[10] In the 1840s, Dr. Marion Sims performed innumerable vaginal fistula surgeries on enslaved African American women without anesthesia. He did not obtain informed consent, because these women were considered "property" and not "free" to have a choice.[11] In 1932, the "Tuskegee Study of Untreated Syphilis in the Negro Male" followed 600 black men with and without syphilis who were enrolled without informed consent. During the 40-year study, penicillin was available beginning in 1941, and—although it remains the preferred syphilis treatment today—none of the 399 participants with syphilis were offered treatment.[12] More recently, in the 1990s, the Johns Hopkins Kennedy Krieger Institute studied lead exposures in 108 African American children to find cost-effective means for childhood lead exposure reduction. The most ethical intervention would have been to eliminate lead exposure risk from homes, but that was considered too costly. Families were instead given incremental monetary abatements to live in homes with increased lead levels during the multiyear study.[13]

Unfortunately, this mistrust is not limited to the black community; American Indian and Latinx communities have also been affected by unprotected radiation exposure as well as fear of deportation when seeking medical care. Navajo miners were tasked to mine uranium in the Southwestern United States in the mid-20th century. Despite the known lung cancer risks of uranium and radon exposure, there were minimal protections offered to the Navajo people. It was not until 1990 that the Radiation Exposure Compensation Act was passed for reparations.[14] Furthermore, immigrant families are often less likely to engage in health care because of fear of deportation; rates of uninsured Latinx children via governmental health insurance programs increased from 7.7% to 8.1% between 2016 and 2018.[15] Unfortunately, these concerns reportedly increase toxic stress levels for both parents and children, according to pediatricians, and exacerbate the poorer health outcomes in Latinx communities.[16]

These experiences are just snapshots in the long history of questionable experimentation, inadequate protections, and medical unease in minority communities. In addition to these egregious events, individuals in communities of color still report experiencing unconscious bias during health care encounters as well as unequal access to basic health care measures such as vaccines.[17-19] Racial disparities in pain management, for example, still exist in the 21st century, where medical trainees inappropriately believe that black patients have "thicker skin" and higher pain tolerance than white patients.[20] Therefore, pharmacists need to make deliberate efforts to address their unconscious bias, as this, along with minorities' mistrust, can influence decisions to receive a COVID-19 vaccine[21] and engage with the health care system at large.

Pregnancy and fertility concerns

Historically, government has not prioritized women's health autonomy, and the aforementioned mistrust is amplified in minority women. In the Latinx communities, U.S. laws disproportionately legalized compulsory sterilization with or without consent for the "benefit of governmental socioeconomic health." Congress passed "Law 116" in 1937 that legalized the sterilization of Puerto Rican women for population control, citing island overpopulation as the main factor for poor socioeconomic conditions and Puerto Rican poverty.

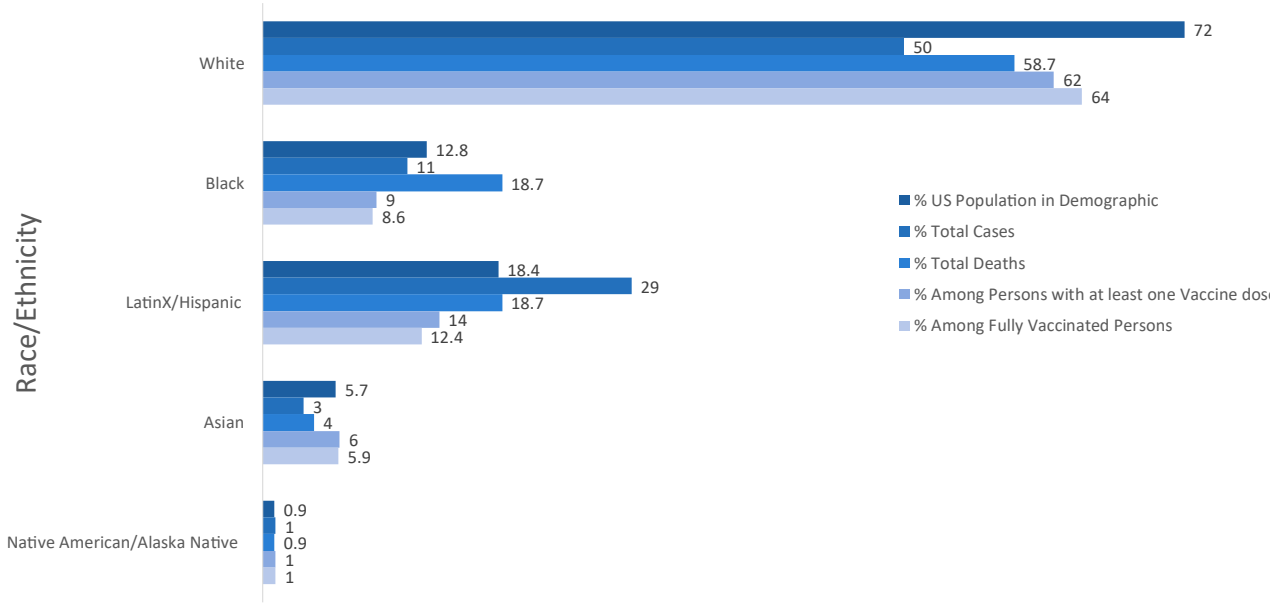

Figure 1. Proportion of U.S. COVID-19 cases, deaths, and vaccination rates by race or ethnicity. Abbreviations used: COVID-19, coronavirus disease 2019.[44-46]

Surveys cite that 1 in 5 Puerto Rican women regretted the procedure commonly referred to as "*la operacion*," given how routine the practice became on the island.[22,23] Thirty U.S. states, notably California and New York, legalized eugenic sterilization programs that disproportionately selected Latinas in health care settings and prisons.[24,25] Up until the 1970s, 65% of sterilization procedures were performed on North Carolinian black women, although only 25% of the state's female population was black.[26]

These negative experiences by minority women of childbearing potential with government-led health campaigns may continue to undermine this population's confidence in ongoing government-endorsed health campaigns including the COVID-19 vaccine campaign. The risk of severe COVID-19 disease is higher in pregnant women in the United States than in nonpregnant women, contributing to 113 maternal deaths and 183 pregnancy losses from January 2020 to July 2021.[27-30] Similar to the United States having higher rates of

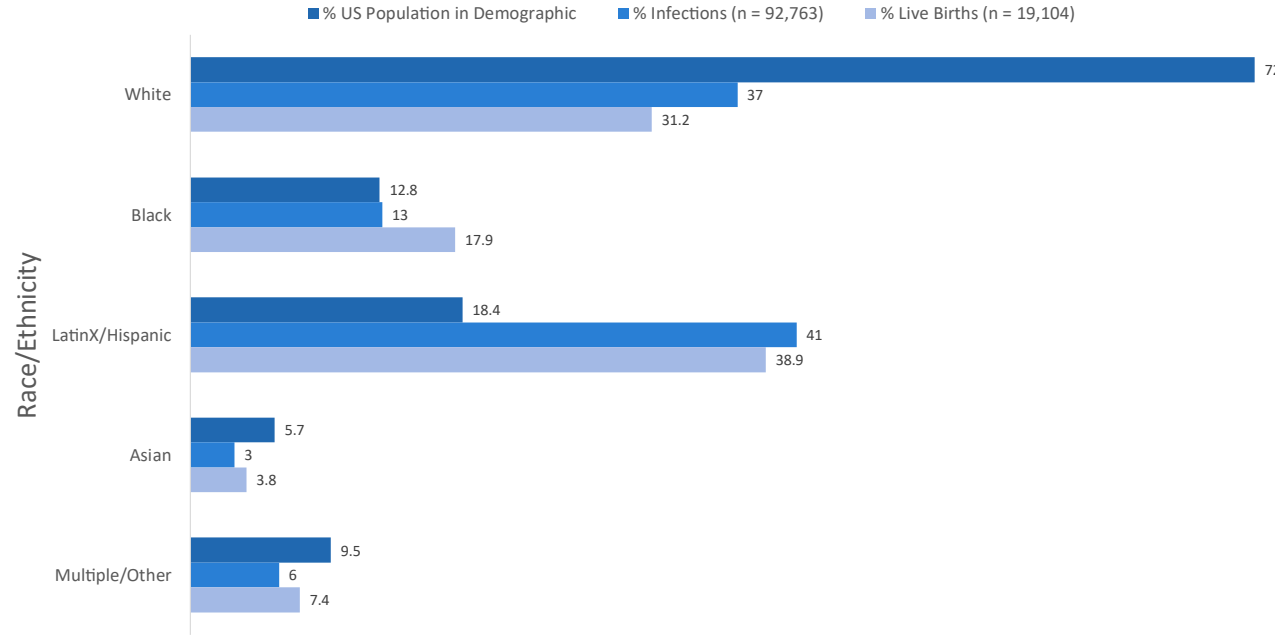

Figure 2. U.S. COVID-19 pregnancy infections and birth outcomes by race or ethnicity. Abbreviation used: COVID-19, coronavirus disease 2019.[29,30,46]

chronic disease burden, the United States has among the highest rates of infant and mother mortality in comparison with other countries, with the United States having 5.8 infant deaths per 1000 live births and 17 maternal deaths from every 100,000 live births.[31] This risk is again heightened for minority groups, as maternal mortality for black non-Hispanic women in 2018 rose to 37.1 per 100,000 births in the United States.[32] As COVID-19 puts pregnant women at increased risk for poorer birth outcomes, such as preterm birth,[5] it is of increased importance to understand the barriers of this population's access to and engagement in preventative vaccine efforts. One major identifiable barrier is misinformation, because unsubstantiated claims have been widespread on the Internet of the COVID-19 vaccine causing infertility based on purported similarities between syncytin-1 (placental protein) and the SARS-CoV-2 spike protein in the messenger RNA COVID-19 vaccine.[33] Despite the data demonstrating increased risks of COVID-19 for pregnant individuals, particularly women of color, pregnant individuals may feel that they have to either receive a vaccine with ongoing safety studies or remain unvaccinated and vulnerable to the risks of infection. These concerns are not unique to the COVID-19 vaccine. From 2019 to 2020, Centers for Disease Control and Prevention surveillance identified that 61.2%, 56.6%, and 40.3% of pregnant women received influenza, Tdap, and both vaccines, respectively.[34] The choice to delay or avoid recommended vaccines during pregnancy may also be in part attributed to the plethora of items pregnant individuals are told they need to avoid to protect their unborn child. Whereas the American College of Obstetricians and Gynecologists have championed pregnant individuals having access to COVID-19 vaccines, they have also stressed the importance of pregnant and lactating individuals being empowered and supported to make their own decisions.

Future COVID-19 consequences could be mitigated by addressing vaccine concerns with honesty and empathy to increase vaccine confidence. Honest conversations about the role of preventative treatments in pregnancy as well as in women of childbearing age will help identify opportunities to understand the individual perspectives of each birth experience and determine which factors may be most influential regarding prenatal and fertility medical decision-making.

The pharmacist's role in vaccine confidence

Pharmacists may not only have the task of reassuring their patients but also reassuring themselves about the COVID-19 vaccine, as some could be reconciling their own minority or childbearing concerns. This progression often does not take a single conversation but occurs over a continuum of change. Pharmacists are accessible, trusted health care workers who are knowledgeable about vaccines and able to translate health information into patient-comprehensible language. Thus, they are well-positioned to engage in these series of conversations necessary to increase vaccine confidence. As with smoking cessation counseling, pharmacists can gauge patients' readiness for change (e.g., vaccine uptake). Whether patients are in the "precontemplation" or "action" stages of change, pharmacists can employ motivational interviewing to guide our patients throughout their vaccine confidence journey.[35,36] It is important that pharmacists be mindful of how they broach what can be a sensitive and personal discussion. Pharmacists should be prepared to listen to concerns without judgment and determine how best to react to those who are vaccine hesitant.

The Institute for Healthcare Improvement published a conversation guide to engage those with varying COVID-19 vaccine concerns, which echoes previously documented drivers of vaccine hesistancy.[37,38] Individual populations have specific concerns that should be uniquely addressed. When engaging with minority communities, pharmacists should ask patients of color about their past health care experiences and recognize that racial inequity in health care is an uncomfortable conversation. For example, one can use phrases like "learning more may help the two of us in our relationship to rebuild trust that has been historically broken." Furthermore, if access to COVID-19 vaccines is limited, pharmacists can bring the vaccines to patients' doorsteps to increase opportunities for vaccinations.[39] With respect to pregnancy and fertility, pharmacists should acknowledge the benefits as well as the known and unknown risks of the vaccine. If patients are open to it, information regarding vaccine development and testimonials of vaccine confidence from pregnant women with shared safety concerns may be shared. Recent messenger RNA vaccine data show that vaccinated women can pass on immunity to their children, and there were no differences in pregnancy outcomes between pre-COVID and vaccinated women.[40,41]

Conversations regarding vaccination may need to happen more than once, and some vaccine-hesitant individuals may not be open to the conversation at all. At a minimum, pharmacists can remind patients with each interaction that they are available to listen to their concerns, address their vaccine questions in plain language, and vaccinate when they feel ready.[42]

Conclusion

Vaccine confidence is the trust that patients, families, and providers have in the recommended vaccine, the providers who administer those vaccines, and the policies that led to vaccine development and authorization.[43] In order to encourage patients' vaccine confidence, pharmacists need to earn trust by acknowledging the past life events contributory to current health experiences. This statement posits that pharmacists are well-positioned to empathize with patients' experiences through their training in motivational interviewing and medication counseling and remain accessible throughout that journey to administer COVID-19 vaccinations for "community immunity."

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