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COVID INSIGHTS

How social determinants of health affect COVID-19-related morbidity and mortality

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Abstract: The conditions under which people live and work and how those conditions affect health are known as social determinants of health. They are impacted by disparities of wealth, opportunity, and other societal resources. This article examines how these disparities have influenced morbidity and mortality in minority people of color during the COVID-19 pandemic.

Keywords: coronavirus pandemic, COVID-19, health disparities, minority people of color, MPC, social determinants of health, Tuskegee Study, vaccine hesitancy

SOCIAL DETERMINANTS of health are defined as the conditions under which people "live, learn, work, and play" and how those conditions affect health.[1] They are impacted by "the distribution of money, power, and other societal resources at global, national, and local levels."[2]

Consider this example: Ciera is African American and lives in a cramped two-bedroom apartment with her mother, sister, and brother. A high school graduate, she works at a fast-food restaurant making minimum wage and does not have health insurance. The nearest grocery store is 10 miles away and she does not have a car. She purchases food for herself and her family from a local convenience store. In contrast, Christina, an accountant with a college degree, is a White woman who lives in an affluent suburb and can easily drive or walk to the nearest supermarket.

Education is one social determinant of health that impacts both Ciera and Christina. Individuals who have pursued higher education are overall much healthier than those who have only a high school diploma.[3] Based on her education, income, and access to nutritious food, Christina is likely to experience

better health than Ciera. This is a simplified example of several key social determinants of health.

In the US, the disparities discussed in this article primarily affect African American and Hispanic people. This article examines how these disparities have influenced morbidity and mortality during the COVID-19 pandemic.

Much of the literature on social determinants of heath focuses on African American and/or Black people and may also include Hispanic people or Native American people depending upon the topic. In this article, the term *minority people of color (MPC)* will be used to refer to Black and African American people unless the reference is a direct quote or one population is specifically referenced.

Why do social determinants of health matter?

In March 2020, the CDC collected data from 14 states demonstrating effects of the COVID-19 pandemic on people in the US. The data indicated that MPC, males, people over age 65, and people with certain chronic disorders (obesity, hypertension, lung disease, diabetes mellitus, and cardiovascular disease) are at greater risk of hospitalization from COVID-19.[4]

During March and April 2020, COVID-19 began to have a tremendous impact on society in general. By the first week in March, 17 people had died from COVID-19. By the second week in April, this number had grown to 20,486.[5]

By April 2020, it was very clear that COVID-19 was affecting MPC in greater numbers than White people. As a result, in April the American Hospital Association, the American Medical Association, and the American Nurses Association jointly wrote to the Secretary of Health and Human Services (HHS) to "identify and address disparities in the federal response to COVID-19."[6] These disparities focus on the MPC population in the US. According to the letter, a disproportionate number of MPC and Hispanic patients were hospitalized with COVID-19 compared with White and Asian patients.[6]

Where people live is one of the social determinants of health that may affect people during the pandemic, when social distancing is recommended.

In New York State, mortality from COVID-19 is disproportionately higher for MPC than for White people. Recent statistics tell the story. As of September 6, 2020, MPC and Hispanic or Latino people made up 14% and 19%, respectively, of the population in New York State. However, MPC comprised 25% of total deaths due to COVID-19, and Hispanic or Latino people comprised 27% of these deaths in New York State. In contrast White people, who made up 56% of the population in New York State, accounted for 34% of the deaths.[7]

To comprehend the disproportionate toll of COVID-19 in the lives of MPC, we can also examine statistics from Georgia. A CDC report on eight hospitals in Atlanta, Georgia in March 2020 revealed that an excessive number of hospitalized patients with COVID-19 were MPC:[8]

- 83.2% MPC
- 10.8% White
- 3.4% Hispanic
- 2.7% Asian or Pacific Islander.

The US Census Bureau provides context to the percentages of patients hospitalized with COVID-19 in Atlanta, Georgia. The Census Bureau reports population estimates from July 2019 as follows: Whites comprise 40.9%, while MPC account for 51% of the population of Atlanta. Asian or Pacific Islander individuals account for 4.4% and Hispanic or Latino individuals make up 4.3% of the Atlanta population.[9]

The facts are clear: MPC are hospitalized more frequently than other racial or ethnic groups. The reasons are complex, but it appears that social determinants of health, such as housing, access to healthcare, education, employment, and comorbidities, are at least partly responsible.

It is important for nurses in all settings to be aware of how a patient's physical and social setting affects health outcomes. For example, a nurse may assess that a patient who has been educated to walk for exercise has not done so. Further discussion reveals that the patient lives in an unsafe neighborhood with an equally unsafe park. With this awareness, the nurse can work with the patient and healthcare team to determine an alternate exercise regimen, thus improving the patient's health outcomes.

A patient's ability to afford medications is another important factor. Do we label patients who have not taken their medications "noncompliant" or do we assess why they have not taken their medications? If the nurse determines that a patient cannot afford prescribed medications, the nurse can then intervene, involving

the healthcare team to help the patient get the appropriate medications, thus improving that patient's health outcomes.

Let us explore how social determinants of health are related to certain populations becoming ill with COVID-19.

Consider where people live and play

Where people live is one of the social determinants of health that may affect people during the pandemic, when social distancing is recommended. Maintaining a distance of at least six feet from others and staying away from people who may be sick or infected with SARS-CoV-2 is recommended by the CDC to prevent disease spread.[10] According to the CDC, MPC are more likely to live in closely packed or populous areas compared with their White counterparts, increasing the chance for spread of SARS-CoV-2.[11] Social distancing may not be easy for residents of densely populated areas.

Many MPC live in residentially segregated areas that may be less desirable than White neighborhoods.[12] Residential segregation of MPC has been a multifaceted issue since the mid-1800s.[13] Two reasons for residential segregation include governmental racism and active segregation over the past 170 years.[12]

MPC have historically been denied access to White neighborhoods because White society viewed MPC in a negative light and did not want to associate with these individuals.[12] In the 1920s, governmental racism and active segregation was demonstrated by the creation of federal and local laws prohibiting MPC from owning or renting certain properties. Furthermore, throughout the 20th century, threats of violence were made toward MPC by others if they purchased housing in an area considered to be a "White neighborhood."

Another example of governmental racism and active segregation occurred during the late 1900s, when zoning policies mandating large, and therefore more expensive, homes, effectively banned low-income MPC from otherwise desirable neighborhoods.[13] These zoning policies occurred on a national level. Even after the Fair Housing Act was passed in 1968, MPC continued to experience discrimination based on class. MPC were not able to move into neighborhoods with educational and social opportunities afforded to White families.[13]

For MPC, residential segregation is associated with poor health and poor health outcomes.[14] Yang and colleagues examined the manifestation of poor health outcomes on racially segregated MPC. They found that in racially segregated inner-city areas, MPC have less access to jobs, education, and housing than their White counterparts, and more exposure to unhealthy or unsafe infrastructure.[14]

Infrastructure refers to fixed installations and structures that allow a community to function, such as transportation systems, water supply, sewer systems, and roadways. Suboptimal infrastructure results from to the lack of funds for building a strong and healthy community.[14] Impoverished people do not have the money to pay the taxes necessary to support strong infrastructure. Unhealthy infrastructure limits the availability of walking spaces and grocery stores that provide fresh, healthy food. The stress of living in the conditions discussed have been identified as at least a partial cause of physical and psychosocial disease processes found in the MPC population.[14]

Incarceration

Incarceration is considered a social determinant of health because of its negative effect on communities and families as well as on the incarcerated individuals themselves.[15] High rates of poverty, crime, and unemployment in a community go hand-in-hand with high rates of incarceration and recidivism.[16] The vicious cycle goes something like this: When inmates leave jail and return to their communities, they may find few opportunities for growth and fall into the same dysfunctional patterns of behavior, leading to a return to jail. Their families and communities suffer as a result. Custodial facilities—prisons, jails, juvenile detention facilities, and immigrant detention facilities—become revolving doors.[16]

According to the Office of Health Promotion and Disease Prevention, MPC as well as other minority populations make up a high percentage of inmates in custodial facilities.[15] One study found that among adults ages 18 to 64, 1 in 87 White men was incarcerated versus 1 in 36 Hispanic men and 1 in 12 Black men. The data for incarcerated women are comparable to that of men.[17]

Custodial facilities are often filled up to or over capacity. The most recent statistics available indicate that the occupancy level of custodial facilities in the US is 99.8%.[18] This means that custodial facilities are essentially full.

Inmates generally live in a dormitory-style or small-cell setting.[19] Inmates living in a dormitory-style setting are sharing space with many others. Inmates living in a cell may live alone or share space with other inmates.

An inmate in a single cell has approximately 35 square feet of space. Inmates living with other inmates, whether in a single cell or dormitory setting, are allotted 25 square feet of space. These figures are a national correctional facility standard from the American Correctional Association.[20]

Let us consider 25 square feet of space. This gives inmates a five-by-five-foot area to call their own,

assuming that another inmate does not enter this area. As we know, a primary defense against COVID-19 is social distancing with a recommended six feet between individuals. If a cell for three inmates is 10-by-7.5 feet, what are the chances that three people staying there together will be separated by a distance of six feet? Clearly the custodial living situation does not lend itself to social distancing.

SARS-CoV-2 is spread by respiratory droplets and aerosols. Crowded custodial facilities are a perfect setting for the spread of COVID-19 and other respiratory illnesses.

In addition, inmates often cannot get recommended amounts of sleep, have comorbid conditions, and may not have access to adequate facilities for hygiene or hand washing.[21] The stress of being detained, lack of sleep, comorbid conditions, and lack of access to hygienic resources can weaken the immune system, further contributing to an inmate's already high risk of contracting COVID-19 in a custodial facility.[19]

Many people spending time in custodial facilities are from poverty-stricken neighborhoods.[19] If infected with the SARS-CoV-2 virus in prison, former inmates returning to their homes enhance the spread of COVID-19 in the community.[21] In addition, correctional staff and personnel travel into, out of, and between custodial facilities, thereby increasing the likelihood of transmission of SARS-CoV-2 to and from surrounding communities and throughout custodial facilities.[21] Congregate living, crowded conditions, and movement of inmates and staff into and throughout custodial facilities all make custodial facilities a treacherous place to live during the pandemic.

Employment

According to the US Bureau of Labor Statistics, 24% of MPC worked in the service industry in 2018 compared with 16% of White people. Sixteen percent of MPC worked in the production, transportation, and material moving sector versus 11% of White people.[22] Service and production jobs often do not provide sick pay or even permit workers to take time off from work.[11, 23] Economic circumstances may force employees to keep working despite illness. Compared with White workers, MPC may not have savings to fall back on when they are out of work.[23]

Congregate living, crowded conditions, and movement of inmates and staff all make custodial facilities a treacherous place to live during a pandemic.

An appreciable difference in "wealth," which includes savings, home equity, and investments minus any debt, exists between MPC and White people. Consider these statistics from the Center for American Progress:[24]

- Median Black wealth in 2016 was $13,460, less than 10% of the median White wealth of $142,180.
- On average, Black wealth was 11% that of White wealth.
- Slightly more than 25% of Black people had no wealth or negative wealth (when total debt exceeds total assets) compared with only slightly more than 10% of White people.

Many MPC have work that pays poorly, but others cannot find work at all.[25,26] Even before COVID-19 wreaked havoc on people's lives, employment of MPC lagged behind White employment, and unemployment for MPC was ahead of the White population even among college-educated people. Between 2018 and 2019, the unemployment rate for college-educated MPC was 2.8%, compared with 2% for college-educated White people.[25]

During the pandemic, people have been encouraged to work from home if possible. According to the US Bureau of Labor Statistics, only 19.7% of African American employees can work from home, compared with 29.9% of White employees.[26]

If we combine the lack of employment and economic circumstances, it is easy to see why the MPC population has many disadvantages when it comes to COVID-19. MPC are disproportionately represented in the service industry and must go to work, even if they are sick, or risk losing their jobs. Not only do they risk exposure to SARS-CoV-2, but they also risk spreading the virus to others both at the workplace and home. This has set up a public health disaster for MPC.

Healthcare access

Many factors play into the accessibility of healthcare for those most at risk for COVID-19. For example, access to healthcare is hampered by lack of transportation. MPC who are socioeconomically disadvantaged may not own a car or have access to public transportation, limiting their ability to seek healthcare or keep appointments. MPC who work in the service industry may not be able to get time off from work to

see a healthcare provider or have the opportunity to participate in an employer-based healthcare insurance plan.

Many MPC are underinsured or lack healthcare insurance altogether. According to the HHS Office of Minority Health, 55.5% of non-Hispanic Blacks had private health insurance in 2017 compared with 75.4% of non-Hispanic Whites.[27] The latest statistics available on the Office of Minority Health's website indicate that 20% more non-Hispanic White people have health insurance compared with MPC. Considering the expense of healthcare, attending to health issues may be low on the list of priorities for people who are socioeconomically disadvantaged and/or underinsured.[27]

Healthcare disenfranchisement

MPC have historically experienced disenfranchisement by the healthcare community.[1] The Tuskegee Study of Untreated Syphilis in the Negro Male is just one example. This research was conducted in Alabama by the US Public Health Service and the Tuskegee Institute.[28-30] When initiated in 1932, the study enrolled 600 poor, illiterate Black men: 399 men with syphilis and a control group of 201 men without syphilis. The purpose was to observe the effects of untreated syphilis in the body. However, the men were told that they would be treated for "bad blood" and were not informed about the study's true purpose. They were enticed to enroll with incentives such as free medical exams, treatment for minor illnesses, meals on exam days, and the promise that burial stipends would be paid to survivors. The study continued for 40 years.[28-30]

When the study began, no effective treatments for syphilis existed. That changed with the discovery of penicillin. In 1947, penicillin was recognized as a cure for syphilis, but it was withheld from the study subjects, who were never informed about the availability of treatment.[31]

How many men in the Tuskegee Study died from untreated syphilis? That number is not known, but probably all men in the study. What is known is that countless spouses and children were also infected.[28]

The question may be asked: Why is the Tuskegee Study and other examples of past racial injustices relevant to the morbidity and mortality of COVID-19 on MPC? Literature demonstrates that traumatic events can affect individuals not directly affected by the injustice or exploitation. Distrust of the government and medical personnel by African American men not enrolled in the Tuskegee Study persist.[32] Incidents of racially or ethnically charged events have set the stage for MPC's hesitance in seeking healthcare and mistrust of the healthcare system, as well as fueling morbidity and mortality in this population.[28]

Hesitancy in health-seeking behavior is important to think about when considering the effect of COVID-19 on society. In order to effectively limit spread of SARS-CoV-2, an estimated 60% to 75% of the population must be vaccinated against the virus.[33] In a systematic review of vaccine acceptance rates worldwide, Sallam reports the highest level of vaccine acceptance to be in Ecuador, at 97%. In contrast, surveys from the systematic review show the vaccine acceptance rate in the US at 56.9%.[33]

Distrust of the healthcare system persists in the US, particularly among the MPC population. The CDC reports results of a national survey from September and December 2020 about desire to vaccinate versus hesitancy to vaccinate against COVID-19. The report illustrates that many MPC, women, and younger adults have little to no intention of receiving a COVID-19 vaccine.[34] This group shares these characteristics: low socioeconomic status, low educational status, and a lack of health insurance. Of note, adults over age 65 reported a 10% higher rate of desire to vaccinate and adults of all ages across all socioeconomic groups reported a 6% higher rate of desire to vaccinate between September and December 2020.[34]

Another issue that influences acceptance or hesitance to receive a COVID-19 vaccine includes politicization. Antivaccination groups, those who subscribe to conspiracy theories about SARS-CoV-2, and those who feel the COVID-19 vaccines were released without proper testing and safety measures serve to feed misinformation about the vaccines.[35] As is discussed throughout this article, "minorities, lower income, and less educated individuals are disproportionally more susceptible to COVID-19."[36] Because MPC and other minorities are more susceptible to becoming sick with SARS-CoV-2, the need to address vaccine hesitancy and the reasons for vaccine hesitancy is acute.

Comorbidities

An individual's health status affects the risk of contracting the SARS-CoV-2 virus. Comorbidities that increase the risk of hospitalization for COVID-19 include hypertension, obesity, diabetes, certain cancers, chronic lung disease, and chronic kidney disease.[36,37] The risk of severe COVID-19 increases significantly when an individual has two or more risk factors.[38]

Men in the MPC population have an equal rate of ***obesity*** (body mass index [BMI] of 30 or more) compared with White men.[39] However, women in the MPC population are 1.5 times more likely than White women to be obese.[39] A BMI of 30 or more triples the risk of becoming hospitalized for COVID-19.[40]

Hypertension is particularly prevalent among MPC, as most nurses

were taught in nursing school. According to data from 2017–2018 published by the National Center for Health Statistics, 43.7% of Hispanic adults, 43.6% of White adults, and 57.1% of MPC adults had hypertension.[41] Hypertension leads to kidney and cardiovascular disease. People with hypertension alone have three times the risk of hospitalization for COVID-19 compared with those without a chronic condition.[40,41]

Kidney disease is another risk factor for becoming sick enough to be hospitalized with COVID-19. According to the National Kidney Foundation, African American people are three times more likely than White people to have kidney failure and constitute more than 35% of all US patients receiving dialysis for kidney failure, despite representing only 13.2% of the overall US population.[42]

Diabetes, another important risk factor, disproportionately affects MPC. According to the HHS, African Americans have a 60% higher chance of having a diabetes diagnosis compared with those in the White population.[43] In addition, statistics demonstrate that MPC had a 20% greater chance of mortality from heart disease compared with White people in 2017. The higher incidence of these chronic conditions contributes significantly to the increased morbidity and mortality of MPC during the pandemic.

What can nurses do?

First and foremost, nurses can think about why we became nurses. Did we set out to care for a small segment of society, or do we realize that all people deserve our care regardless of their social, cultural, or ethnic background or any other defining characteristic? All people with whom we interact in the healthcare environment deserve our unbiased care and attention.

Nurses need to guard against implicit or unconscious bias. We all have implicit bias, which refers to stereotypes about a group that may or may not be correct.[44] Stereotyping is taking a generalized and simplified belief about a group of people and applying that belief to everyone belonging to that group. Applying a stereotype to an entire group does each individual in the group a disservice.

By becoming familiar with patients as individuals, nurses are better able to provide education and customized nursing care geared to their personal concerns.

An example of implicit bias is the assumption that MPC are drug-seeking individuals. This bias has led to fewer prescriptions for analgesics written for MPC than for patients in other populations.[44]

Nurses can unlearn their implicit bias by putting aside preconceived notions and assessing patients as individual people. Never assume. Ask questions. Assess patients for information about themselves and listen to the answers. As nurses, we gather data about patients, not so we can judge but so we can get to know our patients and make sound nursing diagnoses and care plans, carry out that care, and evaluate the results of that care.

Cultural competence is taught in nursing schools as well as in institutions where nurses work. However, Alsan and colleagues assert that cultural competence training may not be producing the knowledge and attitudes that are intended by this education.[28] The focus tends to be placed on "cultural otherness" rather than a thoughtful process of finding out about another person.

Learning about another's culture is more meaningful if we examine our own possible biases and thoughtfully consider another's culture, ways of living, and ways of being. "Even if you have seen something 1,000 times, leave room for the 1,001st time to be different."[44] Again, never assume.

Nurses can undertake the following concrete actions immediately.

- Avoid stereotyping a person's health, dietary, or other personal practices according to race or ethnicity. Stereotyping a person does not allow for true assessment.
- Recognize that medical distrust continues to be a real issue, particularly among MPC. Make sure that patients' concerns are heard and addressed. If a patient's concerns are not addressed by the care team, the nurse can and should advocate on the patient's behalf.
- Another area in which nurses can have an impact is patient education. Nurses are the clinicians with the most contact with patients. Take every opportunity to educate patients on their terms. Assess the patient's social and personal situation and belief system without judgment. By becoming familiar with patients as individuals, nurses are better able to understand them and provide customized education and nursing care geared to their personal concerns and values.

Taking personal responsibility

As a nurse, I cannot control whether or not a patient will contract COVID-19, but I can work on myself. If I am a White person, I must recognize and examine my own attitudes concerning MPC. I can ask a person of color how he or she perceives me. I can also examine my circle of friends. Seeking out friends of different cultures will help me grow as a person and improve my nursing practice. Once I have shined a light on my own implicit bias toward MPC or people of other cultures, I can work on changing my attitudes.

If I am an MPC or a person of another culture or ethnicity, I must also search out my own implicit bias toward others. Does this sound simple? It is not, but it is a professional and personal exploration well worth taking.

In 2016, The Joint Commission released a *QuickSafety* issue on implicit bias in healthcare and recommended use of the Implicit Association Test (IAT), a computerized exercise that is designed to measure the test-taker's implicit preferences by bypassing conscious processing.[45] The IAT is part of Project Implicit, a collaboration of researchers at Harvard University, the University of Virginia, and the University of Washington. The five-part test is designed to measure the "strength of associations between concepts (e.g., black people, gay people) and evaluations (e.g., good, bad) or stereotypes (e.g., athletic, clumsy)."[46] Nurses can access it and take the test at https://implicit.harvard.edu/implicit/takeatest.html.

Social determinants play an important role

As examined here, MPC are at greater risk of contracting the SARS-CoV-2 virus as well as becoming sick enough to be hospitalized with COVID-19. The reasons are many and complex, but the social determinants of health are at least partly responsible. Where people live and play, where they work, their access to healthcare, and their health status each play a role in the relative risk of becoming ill with SARS-CoV-2.

Nurses in any setting have a role during this pandemic. Simply stated, nurses must acknowledge their own implicit biases, learn about a patient's cultures by active listening, avoid stereotyping, and be a patient advocate.

Finally, I honor and salute all the nurses who have bravely cared for patients with COVID-19 throughout this pandemic. ■

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The author and planners have disclosed no potential conflicts of interest, financial or otherwise.

DOI-10.1097/01.NURSE.0000742408.10859.a7

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