

**Marian University**  
**Leighton School of Nursing**  
**Doctor of Nursing Practice**  
**Final Project Report for Students Graduating in May 2022**

Disproportionate Impact of COVID-19 on BIPOC Communities

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### **Abstract**

COVID-19 is an infectious respiratory illness that has taken hundreds of thousands of lives and infected millions more in the United States. Unfortunately, Black Indigenous and People of Color (BIPOC) communities are over-represented in deaths and infections. Healthcare disparities are multifactorial, and dependent on a complex interplay of demographic, socioeconomic, cultural, genetic, and historical variables. This education was given to CRNAs to educate them on the different issues contributing to the disproportionate impact of COVID-19 on BIPOC communities. Healthcare workers who on the front lines of this pandemic are not routinely educated by employers of this social issue, which leads to a lack of education for their patients. A lack of knowledge of one's risk factors has negative effects on more a vulnerable part of the population attempting to mitigate exposure risk to COVID-19. In addition, these communities of color are shown to have decreased access to healthcare, overrepresentation in essential jobs, reduced ability to work from home which leads to the reduced ability to social distance.

### Disproportionate Impact of COVID-19 on BIPOC Communities

This project is submitted to the faculty of Marian University Leighton School of Nursing as partial fulfillment of degree requirements for the Doctor of Nursing Practice, Nurse Anesthesia track. As of June 2021, according to the Center for Disease Control (CDC): American Indians are 3.3x more likely to get infected and 2.4x more likely to die; Black Americans are 2.9x more likely to get infected and 2.0x more likely to die, and Hispanic Americans and Asian Americans are 2.8 and 1.1x more likely to get infected with COVID-19 than Caucasian Americans. Black Americans were half of all COVID-19 deaths in Alabama (52%), Georgia (51%), Louisiana (59%), Mississippi (66%), and the District of Columbia (75%) (Yehia et al., 2020). This pattern is also seen in the United Kingdom, where 14% of individuals infected with COVID-19 are Asian and 12% are Black, where the Asian population make up less than 7% of the population, and the Black population is 3% (CDC, 2020).

### **Background**

According to the Centers for Disease Control and Prevention (2021), American Indians, Asian Americans, African Americans, and Hispanic Americans have respectively 3.3x, 1.0x, 2.9x, and 2.8x, higher infection rates than Caucasian Americans (Centers for Disease Control and Prevention, 2021). It is clear that these communities currently face an increased burden of disease and COVID death. In addition to the massive number of people who have lost their lives, the increased rates of hospitalization place an economic strain on our patients, healthcare system, and taxpayers. The average cost of an uninsured or out-of-network provider for COVID-19 hospitalization is \$73,300 (Fair health, 2021). These staggering statistics cannot possibly convey the devastating loss of human life that is represented and immensely disproportionate among BIPOC communities.

Healthcare disparities go back hundreds of years in the United States and exist because of a complex interplay of socioeconomic, historical, environmental, and political factors. As a result, BIPOC community members are proven to have decreased trust in the medical system, leading to fewer people of color (POC) regularly visiting a primary care physician and engaging in primary prevention techniques. POC are overrepresented in essential jobs, such as service and transportation, making social distancing and working from home impossible and therefore increasing their risk for exposure to COVID-19. Additionally, BIPOC community members have higher rates of comorbidities, language barriers, crowded living situations, and more environmental pollution, which further increasing exposure risk (Hooper et al., 2020).

Amid this pandemic, accurate information is challenging to decipher from anecdotal information. In the hospital, social distancing guidelines have limited learning opportunities for healthcare staff by reducing the occurrence of staff meeting and conferences. There needs to be increased awareness among nurses to provide culturally intelligent care and provide patients with the proper education to mitigate risk factors and close the healthcare disparities gap. Patient-centered care is a cornerstone of practicing anesthesia, and this same framework of individualized care must be applied to our patients at the highest risk of COVID-19 hospitalization and death. Research shows that when compared to anesthesiologists, CRNAs care for a higher percentage of Medicaid eligible and low-income populations. This means that because CRNAs are more likely to provide anesthesia for populations at higher risk for COVID-19 they are an ideal healthcare population to disseminate education to regarding their vulnerable patient population (Lao et al., 2015).

**Problem Statement**

What do CRNAs who care for COVID-19 patients know about the disproportionate impact of COVID-19 on BIPOC community members in the hospital as of 2021? Assessing the CRNA's knowledge of COVID-19 and the populations it unequally affects is essential because they provide insights into knowledge gaps. It is unknown what practicing CRNAs know about COVID-19 hospitalizations and mortality rates among BIPOC communities and the associated risk factors among those communities that contribute to those disparities. There needs to be increased education and training for CRNAs to facilitate culturally intelligent, equitable care and provide patients with the right education to mitigate risk factors and close the healthcare disparities gap.

**Organizational "Gap" Analysis of Project**

Continuing education is an ongoing aspect of healthcare certification. Throughout this pandemic, hospital employers have provided clinical and ancillary staff education regarding the many protocols and developments related to COVID-19. However, there is little education regarding how COVID-19 affects different communities differently. This education is particularly beneficial for CRNAs because they are the primary anesthesia providers for BIPOC communities and Medicaid-eligible recipients.

**Review of Literature**

COVID-19 is a viral infectious agent that has taken over four and a half million lives worldwide and infected hundreds of millions. History shows that socially disadvantaged groups are the most vulnerable in times of crisis, leading to more infections, deaths, and worse outcomes (Penner et al., 2013). COVID-19 is no different in the sense that BIPOC and individuals of lower socioeconomic status are overrepresented in infection rates, hospitalizations, and deaths.

## Search Methodology

PubMed and Google Scholar were the databases used for obtaining the necessary literature. The literature review's exclusion criteria were articles older than five years, apart from any landmark studies. Peer reviewed articles in English were used in this study. The Boolean phrases used to find literature in PubMed and Google Scholar are as follows; *coronavirus AND race, COVID-19 impact on minorities, Healthcare AND race, Disproportionate impact of COVID-19 Health care disparities AND ethnicity, COVID-19 death AND ethnicity*. 40 articles were screened for this study and 13 were used.

## History and Healthcare

The United States has a deleterious history regarding BIPOC community members and health care. In 1808 the United States banned the importation of slaves from Africa; however, slaves were still allowed to be sold and transported around the United States. Death rates and infant mortality were so high for enslaved people, slave owners needed a way to maintain their enslaved workforce without importing slaves from overseas. The solution was to force enslaved women to reproduce and find a way to decrease the infant mortality rate. This ushered in a new area of violence, trauma, and surgical innovation. Part of the “solution” was to force enslaved women, often as young as 13 years old, to become pregnant. At this time physicians began experimenting on pregnant enslaved women without anesthesia to develop surgical techniques. Dr. Marion Sims, now identified as the “father of modern gynecology”, had no formal training and was one of the people who performed these horrific acts of violence against enslaved women. He perpetuated the notion that Black people did not feel pain. This notion that Black people did not feel pain was established in the medical community and was formally taught by physicians well into the 20th century. It was claimed that Black people bore a "Negro disease,"



which made them have physically different characteristics such as thicker skulls and less sensitive nerve endings that are more resistant to pain and injury. This racist myth led to inaccurate and harmful assumptions regarding how much anesthesia Black people needed and still results in Black people's pain being systemically undertreated in the hospital today (Hoffman et al., 2016).

Additional trauma that the Black community suffered at the hands of trusted medical professionals occurred from 1932 to 1972, when the Public Health Service pretended to treat infected members of the Black community with syphilis and intentionally withheld the life-saving treatment to better understand the disease process. At the time, this study had such a detrimental impact that it decreased the national life expectancy of Black men by 1.5 years (Alsan & Wanamaker, 2018).

From the 1920s to the 1980s, hundreds of thousands of Black women, Indigenous Americans, and disabled White people were victims of a government-funded eugenics program where medical students would perform hysterectomies on "undesirable" individuals. This atrocity was later named "The Mississippi appendectomies" because the victims believed they were having minor procedures such as an appendectomy. During a six-year timespan in the 1970s, 25% of Indigenous American women of childbearing age were forcibly sterilized (Matthew, 2015). These are just a few examples of the horrific crimes that the BIPOC community have suffered from at the hands of medical professionals, and it comes as no surprise that these communities now have less trust in physicians and the healthcare system. As a result, BIPOC community members are less likely to engage in health promotion activities and are more likely to seek treatment later in an illness's progression (Penner et al., 2013).

**Socioeconomic Factors**

COVID-19 presents unique challenges for BIPOC community members who are socioeconomically disadvantaged. For example, people of color live in more urban and densely populated areas, making social distancing more difficult. Haywood (2020), Larenchin (2020), Hooper (2020), and Kirby (2020) all agree that POC make up a more significant percentage of service industry jobs where working from home is impossible. Additionally, multigenerational families living in the same household are more common in Black, Hispanic, and Asian households. Multigenerational households combine individuals with different levels of exposure risk. An adolescent member of the family may go to school or various events, the parents go to work, and everyone comes home and potentially infects the household's most vulnerable members, the very young and the elderly. Additionally, lower socioeconomic households taking time off work, paying copays, and health insurance premiums contribute less time for health promotion behaviors (Hooper et al., 2020).

Systemic social challenges have also impacted where BIPOC individuals can obtain housing. Redlining is the federal housing administration's systematic denial of home loans to individuals deemed as "high risk". The term comes from mortgage lenders drawing red lines on a map around neighborhoods where BIPOC communities predominantly resided, making it so these communities were deemed "high risk" and denied access to home loans. Redlining took place legally from 1945-1959 but its impact is still felt today. It has been found that individuals in these neighborhoods suffer from higher rates of chronic diseases which are risk factors for poor outcomes from COVID-19. It has also been found that individuals living in historically redlined neighborhoods, primarily BIPOC, continue to suffer from decreased life expectancy

rates that average 3.6 years below and up to 14.7 years below their non-redlined counterparts (Richardson et al., 2020).

Socially disadvantaged communities have fewer health services options, less social mobility, and greater reliance on government programs such as Medicaid. BIPOC individuals comprise half of the population in metropolitan cities around the United States. These densely populated areas have unique risk factors associated with COVID-19, such as poorer air quality and public transportation dependence. However, Toby (2020) and Hooper (2020) agree that the disease burden on communities of color is not due to socioeconomic factors alone.

### **Comorbidities and Culture**

BIPOC individuals have more health comorbidities, such as obesity, hypertension, cardiovascular disease, and renal disease, contributing to increased hospitalization and mortality relative to their overall population (Toby, 2020; Hooper, 2020; Haywood, 2020; Abuelgasim, 2020). In a retrospective chart review by Price-Haywood (2020) comprising of 3626 patients in Louisiana, 76.9% of hospitalized patients were Black, and 70.6% of COVID-19 deaths were Black. This study also showed that over 80% of patients requiring mechanical ventilation were Black, even though the length of hospital stay was similar across all racial groups. Although racial differences in rates and mortality are multifactorial, and encompass various economic, demographic, and social factors, Haywood (2020) and Penner (2020) agree that POC seeks treatment later, ultimately contributing to their morbidity and mortality.

### **Sociocultural Factors**

It is likely that there are also cultural and socioeconomic barriers influencing BIPOC individuals to seek treatment later in COVID-19's disease progression. As stated previously, BIPOC communities have a history of distrust and betrayal from the scientific and medical

community, leading to generations of distrust of physicians and the healthcare system. According to Penner (2013), “minorities are more likely to have non-minority” physicians leading to "racially discordant" medical interactions where patients are more reluctant to use preventive health services.

Cultural identity is an individual's self-perception that ties them to their ethnicity, religion, or nationality (Penner et al., 2013). Penner (2013) describes behaviors that are synonymous with an individual's culture as "in-group" behaviors and the thoughts, beliefs, and actions of other cultures referred to as "out-group" behaviors. To maintain cultural identity, people mirror their in-group behaviors. According to a study by Penner (2013), Black participants viewed health promotion activities like exercising, getting enough sleep, and a balanced diet are viewed as out-group behaviors compared to middle-class white White participants who viewed these same activities as in-group behaviors. Individuals can often see the differences among their cultures but often see the other cultures as the same (Penner et al., 2013). This mindset leads to stereotyping members who are not of the same ethnic, social class, or religion. Stereotyping influences physicians' perceptions of patients and patient adherence expectations, which impacts a physician's treatment decisions and recommendations. It is shown that BIPOC individuals receive less aggressive medical treatment for the same diagnosis and fewer opioid analgesics in the emergency room than White patients (Penner et al., 2013).

Stereotyping had played a role in the early stages of COVID-19 when a young Cameroonian student was infected with COVID-19 in China, becoming the first African infected with the virus. After his recovery, numerous myths from social media were spread throughout the Chinese medical community and internationally, claiming Black immunity to COVID-19. Stereotyping based on a single individual is a dangerous example of in-group members seeing

out-group members as homogenous. A similar situation occurred during the AIDS epidemic, where the disease was characterized as only plaguing White gay men. This misinformation led to fewer prevention strategies by Black and Hispanic Americans, which ultimately led to increased AIDS infection rates among Black and Hispanic Americans (Laurencin & McClinton, 2020).

### **Biological Factors**

Biological factors within different ethnicities can alter an individual's response to an inflammatory reaction independent of comorbidities (Abuelgasm, 2020). For example, Abuelgasm (2020) shows that African people have an increased inflammatory reaction when exposed to infectious pathogens. Increased inflammatory states may serve as an adaptive characteristic for a myriad of infectious agents; however, in the pathophysiological process of COVID-19, the cytokine storm causes morbidity in severe cases. Additionally, the angiotensin-converting enzyme-2 (ACE2) is an entry point for the SARS-CoV-2. East Asian populations have higher expressions of ACE2 levels compared to Caucasians. There is limited research on gene expression related to COVID-19 specifically.

### **Theoretical Framework**

The Transcultural Nursing Theory created by Madeline Leininger will be the theoretical framework to guide my DNP project. The United States is becoming more diverse, but healthcare workers have seen slower growth in diversity than the national demographic. According to Lancellotti (2008), the lack of diversity is linked to healthcare disparities. Transcultural Nursing Theory attempts to provide culturally congruent care tailored for individuals, their unique risk factors and cultural needs through the nurse-patient level. This theory guides my project by educating the healthcare workforce about the disproportionate impact of COVID-19 on BIPOC individuals. The Sunrise Model (Appendix A) is a visual

depiction of the sociocultural aspects that impacts every patient's care. This model is deductive, where the outside is the general worldview, and as you move toward the center, the influences become more specific to the patient. COVID-19 disproportionately impacts people of color for various reasons, such as socioeconomic, ethnohistorical, language, and environmental. All of which are included in the Sunrise model.

### **Goals, Interventions and Outcomes**

The primary objective of my DNP project is to bring awareness to the disparities that exist in COVID-19 infections and deaths among BIPOC community members to CRNAs, who are more likely to provide anesthesia for these venerable populations in comparison to Anesthesiologists (Lao et al., 2015). My project aims to induce a practice change by educating CRNAs on historical and societal processes affecting care. Culturally intelligent care in the United States health care system is a recent aspect acknowledged as being important in medical education. Decades of pseudoscience regarding race and legalized federally mandated discrimination led to national health inequalities. The disproportionate infection and the death toll of COVID-19 on BIPOC communities and the factors that make these communities more at risk needs to be is not being taught to the individuals who care for these patients.

### **Project Design**

My educational intervention is a teaching project for CRNAs, the primary anesthesia providers for BIPOC, and Medicaid eligible community members (Lao et al., 2015). There is little education for CRNAs regarding culturally intelligent care. Additionally, acknowledging the historical inaccuracies previously regarded as fact will lead to healthcare professionals dismantling unconscious preconceived notions that contribute to health care disparities.

The research sampling participants were found using a non-probability convenience sample. After obtaining IRB approval from Marian University, I requested permission to post my anonymous survey on a private Facebook group for CRNAs and SRNAs. The CRNA & SRNA page is a private group that requires the members to have an active American Association of Nurse Anesthetist (AANA) membership to gain access to the page.

Upon opening the survey link, CRNAs would complete a pre-intervention knowledge assessment before the teaching intervention, a YouTube video containing a Prezi presentation with a voice recording that I created to provide education on the disproportionate impact of COVID-19 on BIPOC communities and their unique risk factors, and a 9-question knowledge assessment after (see Appendix B). The pre-test and post-test questions are the same. My pre and post-test data will be quantitative, and I will use the data analyzer Qualtrics to collect the data and SPSS to analyze the data. The quantitative analysis will be an objective measurement by which the present teaching intervention's effectiveness can be judged.

### **Ethical Considerations**

The Marian Internal Review Board (IRB) approval was obtained prior to initiating the DNP Project (Appendix C). Participants' anonymity was maintained during this project by using an anonymous link for the survey and data collection.

### **Data Analysis and Results**

Of 32 total study participants, 6 completed the entire study, 8 completed only the pre-test, and 18 did not complete the pre-test or the post-test. Of the 6 individuals that completed the survey in its entirety, all of their post-test average scores increased from pre-test values. A paired-sampled t-test was calculated to compare the mean pre-test scores to the mean post-test scores after the teaching intervention. The mean pre-test score was 26.5 ( $sd= 7.09$ ), and the mean

on the final was 50.7 ( $sd=31.0$ ). A significant difference from pre-test to final was found ( $t(5)=-2.228$ ,  $p=0.038$ ). The null hypothesis is rejected. The 8 participants who only completed the pre-test had a mean score of 30.98. The data was not averaged for the 18 individuals who did not complete the pre-test or post-test.

### **Discussion**

As a result of the teaching intervention, participants' mean scores significantly increased from their pre-test to post-test values. All participants who completed the study either selected "neutral" or "strongly disagree" when asked if their employer-provided them with information regarding COVID-19's disproportionate impact on BIPOC communities. Five out of six believe the presentation helped them to understand COVID-19 and the impact on BIPOC communities. Four out of six participants agreed or strongly agreed that they would be willing to utilize various strategies (such as education, technology, unique services, etc.) to provide equitable and preventative care for patients at increased risk for COVID-19. Five out of six believed that cultural intelligence is essential to providing equitable care.

Unfortunately, the response rate is too low to generalize to a larger population. On the Facebook post where the survey link was distributed, elements of the survey were described; pre-test, 9-minute video, and post-test. Also, participants were made aware of how long the study will take, which was approximately 15 minutes. Of the 32 participants, only 6 completed the study in its entirety. The lack of completed responses could signify the clinician's disinterest in studying the social justice issues or a lack of incentive to learn how and why COVID-19 affects BIPOC communities disproportionately. This is a concerning finding and should be further investigated. One of the strengths of this study is that all 6 participants that completed the study has taken care of at least one patient who was diagnosed with COVID, and only 7 of the 32 total



participants said they had not taken care of a COVID patient. This means that, as predicted, this kind of study is relevant to the CRNA population. This also further supports the need for CRNA education on COVID-19's impact on BIPOC communities. The education about COVID's effect on BIPOC communities is reaching the providers to take care of them. Although the response rate was low, this study can serve as a preliminary effort to educate CRNAs and SRNAs on how to see their patients on a more human level, where they are aware of the societal, cultural, economic, and environmental factors regarding COVID-19 and how they affect their patient population.

### **Conclusion**

BIPOC communities have suffered disproportionately from war, disease, climate change, and disaster throughout history because of the socioeconomic and environmental barriers that limit their ability to preserve their well-being. These same devastating patterns are being seen with COVID-19; however, there is an opportunity to protect and serve the BIPOC community in a way that is far overdue by researching and implementing interventions on the specific impact and unique risk factors on BIPOC communities. Currently, collecting accurate data on race and infection is not routine, contributing to the gap in knowledge about culturally specific interventions (Laurencin, 2020; Kirby, 2020; Hooper, 2020; Abuelgasim, 2020). Clinicians must stay up to date regarding best medical practices and expand their awareness of the whole patient through cultural and public health awareness. Research shows that BIPOC patients have a history of abuse by the medical practitioners, which leads to generations of distrust, seeking treatment later, and untreated pain, which ultimately leads to worse outcomes. Unfortunately, modern medical education often either amplifies destructive racial myths about people and rarely mentions these practices' historical, economic, and sociocultural effects. As stated before, none

of the participants who completed the survey had received information from their employer regarding the disproportionate impact of COVID-19 on BIPOC communities, and all of them have taken care of COVID-positive patients. Ignorance and unwillingness to educate current and future healthcare providers about the past and current sociocultural implications perpetuate the public health crisis of COVID-19. This can inevitably lead all vulnerable populations, including BIPOC communities, to face a more significant death and disease burden to COVID-19. Fortunately, participants in this study have shown that teaching interventions are effective in bringing awareness to social issues that affect the BIPOC community.

### References

Alsan, M., & Wanamaker, M. (2018). TUSKEGEE AND THE HEALTH OF BLACK MEN.

*The quarterly journal of economics*, 133(1), 407–455. <https://doi.org/10.1093/qje/qjx029>

Abuelgasim, Eyad., Saw, L. J., Shirke, M., & Zeinah, M., Harky, A. (2020). COVID-19: Unique

public health issues facing Black, Asian and minority ethnic communities. *Current*

*Problems in Cardiology*, 45(8). <https://doi.org/10.1016/j.cpcardiol.2020.100621>

Centers for Disease Control and Prevention. (n.d.) COVID-19 Hospitalization and death by

race/ethnicity. CDC. Retrieved September 26th, 2020, from

[https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-](https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-race-ethnicity.html)

[discovery/hospitalization-death-by-race-ethnicity.html](https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-race-ethnicity.html)

Hooper, M. W., Napoles, A. M., & Perez-Stable, E. J. (2020). COVID-19 and racial/ethnic

Disparities. *The Journal of the American Medical Association*, 323(24), 2466-

2467. <https://doi.org/10.1001/jama.2020.8598>

Kirby, T. (2020). Evidence mounts on the disproportionate effect of COVID-19 on ethnic

minorities. *The Lancet Respiratory Medicine*, 8(6), 547-548.

[https://doi.org/10.1016/S2213-2600\(20\)30228-9](https://doi.org/10.1016/S2213-2600(20)30228-9)

Ko, L. (2020, November 19). *Unwanted Sterilization and Eugenics Programs in the United*

*States* | *No Más Bebés* | *Independent Lens* | *PBS*. Independent Lens.

[https://www.pbs.org/independentlens/blog/unwanted-sterilization-and-eugenics-](https://www.pbs.org/independentlens/blog/unwanted-sterilization-and-eugenics-programs-in-the-united-states/)

[programs-in-the-united-states/](https://www.pbs.org/independentlens/blog/unwanted-sterilization-and-eugenics-programs-in-the-united-states/)

Lancellotti, K. (2008). Culture Care Theory: A Framework for Expanding Awareness of

Diversity and Racism in Nursing Education. *Journal of Professional Nursing*, 24(3)179-

183. <https://doi.org/10.1016/j.profnurs.2007.10.007>

Laurencin, C. T & McClinton, Aneesah. (2020). The COVID-19 Pandemic: A call to action to identify and address racial and ethnic disparities. racial ethnic disparities.

Doi:10.1007/s40615-020-00756-0

Lelinger, M. (2002). Lelinger's Sunrise Enabler for the Theory of Culture Care Diversity and Universality [Online image]. Nursing Theories.

<http://nursingtheories.blogspot.com/2011/07/leiningers-theory-of-culture-care.html>

Matthew, D. B. (2015). *Just medicine a cure for racial inequality in American healthcare*. New York University Press.

Penner, L. A., Hagiwara, N., Eggly, S., Gaertner, S. L., Albrecht, T. L., & Dovidio, J. F. (2013).

Racial healthcare disparities: A social psychological analysis. *National Institute of Health*, 24(1), 70-122. <https://doi.org/10.1080/10463283.2013.840973>

Price-Haywood, E. G., Burton, J., Fort, D., & Seoane, L. (2020). Hospitalization and mortality among black patients and white patients with Covid-19. *The New England Journal of Medicine*. <https://doi.org/10.1056/NEJMsa2011686>

Richardson, J. R., Mitchell, B. M., Meier, H. C. S. M., Lynch, E. L., & Edlebi, J. E. (2020).

Redlining and Neighborhood Health. *National Community Reinvestment Coalition*. Published. <https://ncrc.org/holc-health/>

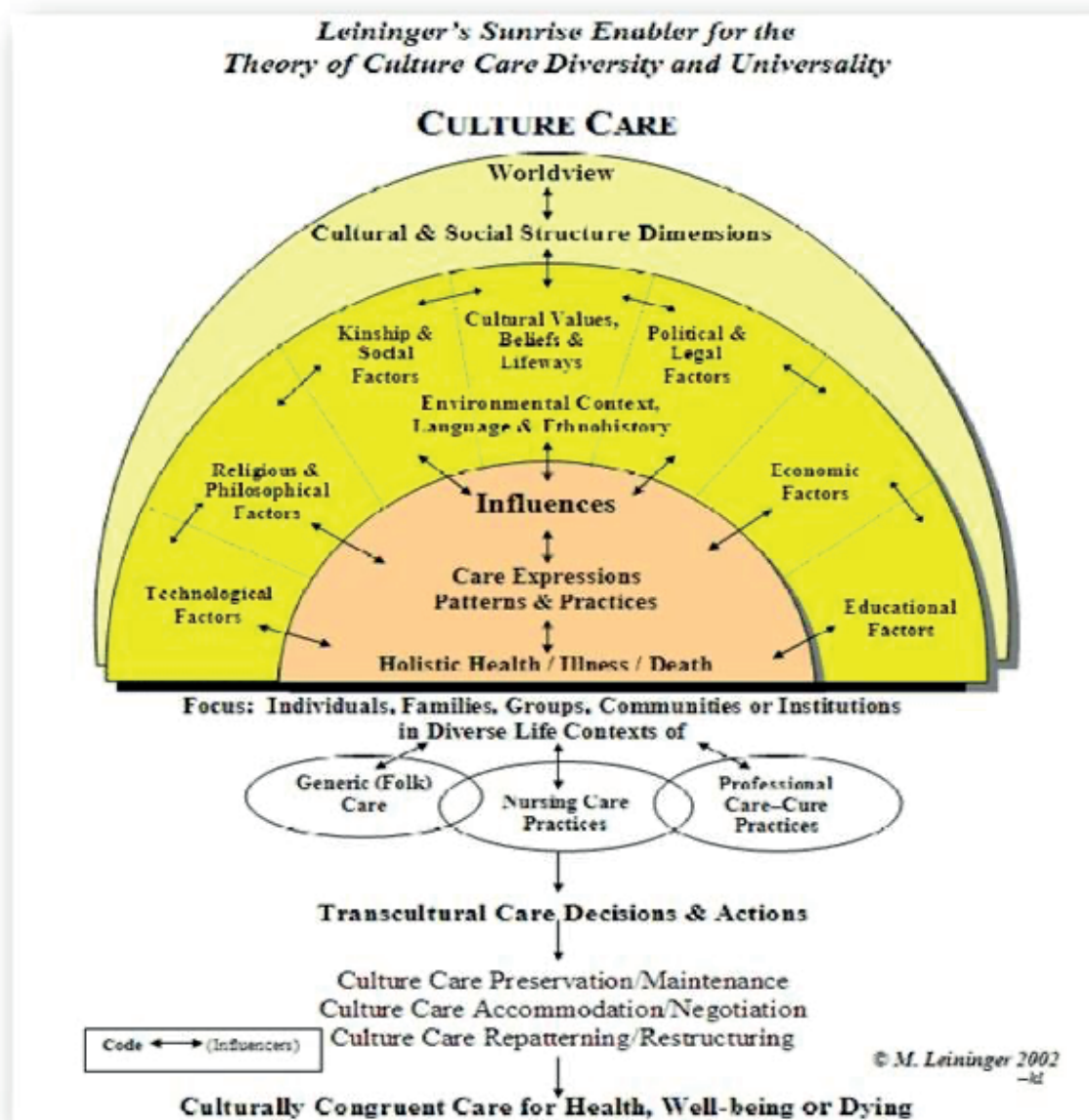
Shah, M., Sachdeva, M., & Dodiuk-Gad, R. P. (2020). COVID-19 and racial disparities. *Journal of the American Academy of Dermatology*, 83(1), e35.

<https://doi.org/10.1016/j.jaad.2020.04.046>

Yehia, B. R., Winegar, A., & Fogel, Richard. (2020). Association of race with mortality among patients hospitalized with coronavirus disease 2019 (COVID-19) at 92 US hospitals.

*JAMA Network Open*, 3(8), Article e2018039. 10.1001/jamanetworkopen.2020.18039

## Appendix A



## Appendix B

What is your age?

- 20-30
- 30-40
- 40-50
- 50-60
- 60+

Which of these best describes your current gender identity (please check all that apply)?

- Cisgender male/man
- Cisgender female/woman
- Transgender female/woman
- Transgender male/man
- Gender queer/gender non-binary/gender fluid
- A gender not listed (please describe): \_\_\_\_\_

What is your ethnicity?

- Asian or Pacific Islander
- Black or African American
- Hispanic or Latinx
- Native American or Alaskan Native
- White
- Multiracial or Biracial
- A race/ethnicity not listed here

Years of Anesthesia experience

- 0-5
- 5-10
- 10-15
- 15-20
- 20+

Region of current anesthesia practice

- Northeast
- Southwest
- West
- Southeast
- Midwest

Have you provided care for a COVID-19 positive patient?

- Yes, 1-10
- Yes, 10-20
- Yes, 20+
- No

As of June 2021, the health disparities between racial/ethnic groups of people regarding hospitalization and death rates due to COVID-19 have:

- Decreased
- Remained the same
- Increased
- There is not enough data to quantify

(As of June 2021) What is the race/ethnicity of people with the highest hospitalization and mortality rate in the US for COVID-19?

- American Indian or Alaska Native, Non-Hispanic persons
- Asian, Non-Hispanic persons
- Black or African American, Non-Hispanic persons
- Hispanic or Latino persons
- White, Non-Hispanic persons

(As of June 2021) What are the rate ratios of hospitalization and death of American Indian or Alaska Native, Non-Hispanic persons compared to White, Non-Hispanic persons?

- 1.0x hospitalization 1.0x death
- 2.8x hospitalization 2.3x death
- 2.9x hospitalization 2.0x death
- 3.3x hospitalization 2.4x death

(As of June 2021) What are the rate ratios of hospitalization and death of Asian, Non-Hispanic persons compared to White, Non-Hispanic persons?

- 1.0x hospitalization 1.0x death
- 2.8x hospitalization 2.3x death
- 2.9x hospitalization 2.0x death
- 3.3x hospitalization 2.4x death

(As of June 2021) What are the rate ratios of hospitalization and death of Black or African American, Non-Hispanic persons compared to White, Non-Hispanic persons?

- 1.0x hospitalization 1.0x death
- 2.8x hospitalization 2.3x death



- 2.9x hospitalization 2.0x death
- 3.3x hospitalization 2.4x death

(As of June 2021) What are the rate ratios of hospitalization and death of Hispanic or Latino persons compared to White, Non-Hispanic persons?

- 1.0x hospitalization 1.0x death
- 2.8x hospitalization 2.3x death
- 2.9x hospitalization 2.0x death
- 3.3x hospitalization 2.4x death

Select which factor(s) contribute(s) to a higher risk of COVID-19 mortality. Select all that apply.

- Ability to work from home
- Health comorbidities
- Living in a multi-generational family household
- Living in metropolitan areas
- Living in rural areas
- Not having health insurance
- Poor housing conditions
- Reliance on public transport
- Salaried wage employment
- Trust in healthcare systems

Select which factor(s) are more likely to apply to BIPOC (Black, Indigenous and people of color) when compared to White people. Select all that apply.

- Ability to work from home
- Health comorbidities

- Living in a multi-generational family household
- Living in metropolitan areas
- Living in rural areas
- Not having health insurance
- Poor housing conditions
- Reliance on public transport
- Salaried wage employment
- Trust in healthcare systems

True or False: After adjusting for healthcare access factors and socioeconomic differences, BIPOC (Black, Indigenous and people of color) receive equal quality of treatment for the same diagnosis when compared to White people.

- True
- False

Please rate the degree to which you agree/disagree with the following statements:

This presentation was beneficial in my understanding of COVID-19's impact on BIPOC (Black, Indigenous and people of color).

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

My employer has provided me with information regarding COVID-19's disproportionate impact on BIPOC (Black, Indigenous and people of color).

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

My employer has provided me with interventions aimed to reduce COVID-19's disproportionate impact on BIPOC (Black, Indigenous and people of color).

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

In order to provide quality care, it is important to be culturally intelligent.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

I would be willing to utilize various strategies (such as: education, technology, unique services, etc) in order to provide equitable and preventative care for patients at increased risk for COVID-19.

- Strongly Disagree
- Disagree

- Neutral
- Agree
- Strongly Agree

## Appendix C

**Re: IRB #S21.280 Approval Status: EXEMPT**

TO: Frederich Walker

FROM: Institutional Review Board

RE: IRB # S21.280

TITLE: The disproportionate impact of COVID-19 on people of color

SUBMISSION TYPE: New

ACTION: Determination of Exempt Status

DECISION DATE: 05-19-2021

The Institutional Review Board at Marian University has reviewed your protocol and has determined the procedures proposed are appropriate for exemption under the federal regulations. As such, there will be no further review of your protocol and you are cleared to proceed with your project. The protocol will remain on file with the Marian University IRB as a matter of record. Please be mindful of the importance of reporting only de-identified, HIPAA-compliant information about the patient in any exhibit or publication.

Although researchers for exempt studies are not required to complete online CITI training for research involving human subjects, the IRB recommends that they do so, particularly as a learning exercise in the case of student researchers. Information on CITI training can be found on the IRB's website:  
<http://www.marian.edu/academics/institutional-review-board>

It is the responsibility of the PI (and, if applicable, the faculty supervisor) to inform the IRB if the procedures presented in this protocol are to be modified or if problems related to human research participants arise in connection with this project. Any procedural modifications must be evaluated by the IRB before being implemented, as some modifications may change the review status of this project. Please contact me if you are unsure whether your proposed modification requires review. Proposed modifications should be addressed in writing to the IRB. Please reference the above IRB protocol number in any communication to the IRB regarding this project.

Amanda C. Egan, Ph.D.  
Chair, Marian University Institutional Review Board