“Why have I never learned this?”: Exploring health disparities through a critical consciousness lens

by

Tyanez Carol Jones

A dissertation submitted to the graduate faculty

in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Major: Education

Program of Study Committee:
Alexis Campbell, Co-major Professor
Benjamin Gleason, Co-major Professor
Tera Jordan
Marian Kohut
Doug Wieczorek

The student author, whose presentation of the scholarship herein was approved by the program of study committee, is solely responsible for the content of this dissertation. The Graduate College will ensure this dissertation is globally accessible and will not permit alterations after a degree is conferred.

Iowa State University

Ames, Iowa

2020

DEDICATION

In memory of my parents:

Gwendolyn Mae Thomas & Matthew William Goodwin

To my family for your love and encouragement:

Trinity, Taniah, Ashton, and A.J. – my gifts of love, you all inspire me.

and finally, Dr. Anthony D. Jones Sr. - my partner in life and love, let the journey continue.

TABLE OF CONTENTS

Page

LIST OF FIGURES v

LIST OF TABLES vi

NOMENCLATURE vii

ACKNOWLEDGMENTS viii

ABSTRACT x

CHAPTER 1. GENERAL INTRODUCTION 1
- Background 1
- Research Question 4
- Significance of the Study 5
- Relevant Definitions 13
- Chapter Summary 16

CHAPTER 2. LITERATURE REVIEW 18
- Foundations of Education 18
- Health Disparities for Teaching and Learning 25
- A Critical Perspective 36
- Theoretical Framework 46

CHAPTER 3. RESEARCH DESIGN AND METHODS 52
- Epistemology Statement 52
- Positionality Statement 53
- Qualitative Ethnographic Case Study As Methodology 56
- Context of Research 60
- Trustworthiness 72

CHAPTER 4. RESULTS 75
- Study Introduction 77
- Eye Opening Experience – Theme 1 84
- Health Disparity Interchange 101
- Lived Experience - Theme 2 106
- Race Definition Interchange 121
- Learning in Motion - Theme 3 124
- Chapter Summary 145

CHAPTER 5. GENERAL DISCUSSION 147
- Theoretical Significance 147
- Questions and Themes 154
- Implications 172

Limitations 181
Recommendations 182
Conclusion 184

REFERENCES 187

APPENDIX A. COURSE SYLLABUS 197

APPENDIX B. IRB APPROVAL MEMO 200

APPENDIX C. PRE-SURVEY 201

APPENDIX D. POST-SURVEY 203

LIST OF FIGURES

Page

Figure 1 Freire's Constructs of Critical Consciousness 49

Figure 2 Freire's Stages of Critical Consciousness 50

Figure 3 Classroom Observation Form 68

Figure 4 Traditional Analysis Sequence 71

Figure 5 Triangulation of Data Methods 73

Figure 6 Health Disparities Word Cloud 79

Figure 7 Pre-Survey Demographics 80

Figure 8 Initial Health Disparity Learning Figure 82

Figure 9 Health Disparities Interchange 102

Figure 10 Race Definition Interchange 122

Figure 11 Collaboration Board 127

Figure 12 Post-Survey Demographics 145

LIST OF TABLES

Page

Table 1 Participant and Instructor Pseudonyms..... 63

Table 2 Health Disparity Curriculum Outline 65

Table 3 Making A Statement: Statements of Perceptions and Beliefs 83

NOMENCLATURE

BIPOC	Black, Indigenous and People of Color
HPI	Healthy Peoples Initiative
CC	Critical Consciousness
CDP	Critical Digital Pedagogy
AMA	American Medical Association
CDC	Centers of Disease Control and Prevention
DHHS	Department of Health and Human Services

ACKNOWLEDGMENTS

Completing this dissertation and the graduate program at ISU has been a great accomplishment. My deepest appreciation to my committee co-chairs Dr. Alexis Campbell and Dr. Benjamin Gleason. Thank you for your willingness to transition from committee members to co-chairs during the final phase of my graduate journey to guide me through this process to completion. To my committee members, the time and energy you invested in my development as a researcher were critical to the completion of this dissertation. To Dr. Marian Kohut, we worked together as colleagues in the department of Kinesiology and for this research. Thank you for collaborating with me on this project by making your course available to implement instruction and for continuing the work beyond this project. A big thank you to your co-instructor Dr. Lang for taking this journey with us. To Dr. Douglas Wieczorek, you were my first instructor in the SOE and I am thankful for you serving on my committee. Thank you for always challenging me to "dig deeper." To Dr. Tera Jordan, your contribution to my development as a qualitative researcher and throughout this process has been unmeasurable. Thank you for being a mentor and friend.

My academic community has been amazing from day one. To my fellow graduate students: Claudia "Brandie" Young, L. Wesley Harris, Alde McKen, Hilda Makori, Jeanne Connelly, Rudi, Motshubi, Maria Espinoza, Kenyatta Shamburger, Jarrel Johnson, Ricardo Martinez, Michael Dupont, Garrett Gowen, Carlos Casanova, Paul Hengesteg, Nadia Jaramillo, Yi Jin, and Brittany Sweers, Jessica Schulz, Ezequiel Aleman, and Alexia Angton - thank you all for making this journey exciting - from the writing groups, lunches, and JCTP meeting to the many laughs. To Carmen Jones, my sister, this program has forever connected us - my office

mates of four years, conference travel partner, presentations, research collaborations, and on top of all that you have been an amazing friend. Thank you all for being a part of my journey.

To my Science Bound family, you all have supported my work as researcher, teacher, and mentor. It was exciting to participate in the development and growth of so many undergraduate STEM scholars. I am especially thankful for the program staff - you all know how to create community and throw great end of the semester celebrations and holiday parties.

This dissertation is for my family and friends. I want to especially thank my sister Deanna Thomas and brothers Tremayne Johnson and Shaun Thomas and their families for their love and support. To my favorite mothers, Allean Jones and Pamela Goodwin for your many prayers and encouragement. To all of my aunts, uncles, and cousins- Thank you. I have to also acknowledge my sister LaVerne Williamson, thank you for “tea time”, each moment made the journey a little easier.

Lastly, I would like to thank all of the students that completed surveys, online modules, discussions, and activities that contributed to making this research possible. I would also like to acknowledge the families that have lost loved ones to the Coronavirus (Covid-19) pandemic, especially the Black and Brown families that have been disproportionately impacted. There is so much work to be done.

ABSTRACT

Health disparities are differences in health outcomes that result from social, economic, and political inequalities that disproportionately impact Black and Indigenous people of color (BIPOC) at an alarming rate. Implementing health disparities topics early in educational programs proves beneficial for informing, equipping, and engaging future health and medical professionals in eliminating disparities. This qualitative ethnographic case study was designed and implemented using critical consciousness. Critical consciousness is an ongoing and continuous process of increasing awareness, reflection, and action. My study addressed a critical gap in the research of health disparities that centers student awareness as the central focus. In this study, critical consciousness was adopted to shift the conversation beyond awareness to reflection and action for guiding students in thinking about BIPOC communities impacted by health inequalities. Implementing health disparity topics early in educational programs are beneficial for informing, equipping, and engaging future health and medical professionals.

I present how 140 undergraduate students enrolled in a large midwestern university navigated a health disparities curriculum designed to raise student awareness of health disparities, engage in written reflections, and explore actions for eliminating disparities. In this study, a large majority of students explored health disparities for the first time, and the design of the learning modules allowed them to critically explore the concepts online and at their own pace. Findings showed student development of consciousness across the learning modules. An increased awareness for the meaning of the term and identifying BIPOC and poor communities impacted by health disparities. Reflective and collaborative opportunities highlighted increases that resulted in students challenging and confronting health inequities by asking critical questions and sharing personal narratives. Which includes the adoption of new language, critical

discussions about the absence of course content, and plans to seek out mentorship that contributed to the development of action. Undergraduate pre-health and pre-medical professional students that engage in health disparity topics using critical consciousness develop strategies to confront and challenge inequalities that if continued could have major implications for their work as professionals for eliminating disparities.

CHAPTER 1. GENERAL INTRODUCTION

I wish to live because life has within it that which is good, that which is beautiful, and that which is love. Therefore, since I have known all these things, I have found them to be reason enough and - I wish to live. Moreover, because this is so, I wish others to live for generations and generations and generations and generations. - Lorraine Hansberry

I build this dissertation on the foundations of a wish - a wish for others to live for generations. More importantly, I build this dissertation with the understanding that health disparities among Black and Indigenous people of color (BIPOC) are a result of systematic inequalities that bar marginalized communities from fully living out that wish. The systems used to inform health inequities do not change on their own. These systems are changed by challenging institutional structures, practices, and ways of thinking and knowing. In this chapter, I provide an introduction to my study, research questions, and the significance of the study.

Background

The elimination of health disparities is a leading medical and health priority in the United States (U.S.) (Njoku, 2019). Health disparities are differences in health outcomes that result from social, economic, and political inequalities associated with disproportionate differences in incidence, prevalence, and burden of disease (Braveman, 2014; Njoku, 2018). Health disparities impact historically marginalized individuals and communities based on race/ethnicity, gender, socioeconomic status, sexuality, ability, and geographic location (Braveman, 2006; Vazquez et al., 2017). Health disparities began to gain national attention in 1985 when the U.S. Annual Report Card from the task force on Black and Minority Health acknowledged the disproportionate burden of disease and mortality rates among BIPOC groups (DHHS, 2019; Milburn et al., 2019). In 2000, the U.S. Congress began a national commitment to eliminate

health disparities by establishing the Minority and Health Disparities Research and Education Act (2000). As a result, national and federal organizations such as the National Institute of Health (NIH), the American Medical Association, and the Department of Health and Human Service (DHHS) Healthy People Initiative (HPI) committed to achieving health equity (Davis, 20; Smedley, 2003; Zerhouni, 2004). However, many of these organizations failed to identify specific steps to address health disparities among marginalized communities. The HPI was one of the few programs that outlined specific outcomes to address racial and ethnic disparities to eliminate overall health disparities (DHHS, 1991, 2000, 2010).

The HPI is a commitment by the U.S. federal government to fund health disparity research nationwide with a specific focus on achieving health equity. Because of HPI, there have been some improvements over the past three decades- beginning in 2000. The goals of Healthy People Initiative 2000 were to reduce health disparities, provide access to health care, and increase the quality of health years lived (DHHS, 1991). However, the final report noted issues with the data and strategies that became major barriers to BIPOC communities.

Ten years later, the HPI of 2010 included two primary goals: improvements to life expectancy and to eliminate health disparities (Braveman, 2014; DHHS, 2000; Rouse 2016). The final report for HPI 2010 noted an increase in life expectancy for all groups but no improvement in health outcomes among BIPOC (Braveman, 2014; Rouse 2016). Today, the HPI of 2020 outlined strategic frameworks that extended broadly across distinct areas of health and health professions. The HPI 2020 goals specified achievements in health equity by working towards eliminating disparities and improving the nation's health (Braveman, 2014). These goals included objectives centered on creating a more ethnically and racially diverse health and medical workforce and improvements in education. The mid progress review for the HPI 2020, reported targeted improvements in higher educational institutions that included "increases in

instruction for health risk behaviors and public health content in course curriculum" (CDC, 2017, p. 30). The HPI highlighted the need for improvements in multiple areas for eliminating health disparities which included advancements in education for both BIPOC communities and all health professionals (DeSalvo, 2016).

In the past, researchers for improving education primarily focused on increasing the cultural competency of health professionals and educating BIPOC communities that are overwhelmingly impacted by health disparities (Brommelsiek, et al., 2018; Sharifi, et al., 2019). BIPOC communities were initially targeted because the group's awareness of preventative health outcomes and disproportionate differences in disease outcomes was low (Njoku 2018; Welsh & Fontes, 2011). Therefore, training was a way to inform communities about recommended health practices and a way to get communities to comply with various treatment modalities (Rouse, 2016). The majority of these educational trainings tended to place the undue burden of eliminating health disparities on the BIPOC communities most impacted by them (Cené, et al. 2009). Education for eliminating health disparities must extend beyond community-based education practices to include preparing professional and pre-health professionals about the socioeconomic and political inequalities that continually serve as barriers to equitable health outcomes. Educational efforts must unmask and challenge the conscious and unconscious practices of bias and discrimination that is maintained through the work of health students, professionals, researchers, practitioners, and policymakers.

Addressing health disparities in education requires an interdisciplinary approach that targets all stakeholders in key areas of health and medicine earlier in the educational process. Health disparities education provides both knowledge and awareness that plays an integral role in closing the health gap (Njoku & Wakeel, 2019) but it is rare for conventional educational programs to embed health disparities into traditional courses (Halman et al., 2017). Medical and

graduate programs have introduced health disparities curriculums to students but are offered as elective courses or workshops (Njoku, 2018; Ross et al. 2010; Smith et al., 2015). Though health disparity education is still in its infancy, researchers urge health educators to consider health disparity education as a requirement for all classrooms and to provide effective guidelines for teaching and evaluating training. (Cené, et al., 2010; Gollust & Cunningham, 2018).

Moreover, other researchers argue that it is significant to introduce undergraduate students to health disparities education earlier in their academic journey for informing, equipping, and encouraging engagement with communities most impacted by them (Benabentos et al., 2014; Njoku, 2019). Health disparities are a national crisis in the U.S. and very few undergraduate pre-health professional majors engage in education and training that informs them about a crisis they will be left to fix. Inequalities both social and economic are built into the structures and institutions of our society and when students are not well informed of their existence, they tend to perpetuate the same inequalities - a factor that is also true for health disparities. According to Benabentos et al. (2014) undergraduate curriculums that focus on health disparities position students to gain an in-depth understanding of the problems through extended learning and also provide opportunities to reflect on individual and structural inequalities for ensuring equitable health outcomes. Therefore, this research will be used to inform and engage undergraduate pre-health professional majors to a curriculum that includes various learning topics about health disparity.

Research Question

Preparing undergraduate students to participate in health disparities education is essential for increasing knowledge and awareness, promoting long-term engagement, informing preparation and practice for eliminating health inequities (Benabentos, et al., 2014; Njoku,

2018). The studies used to assess the educational implementation of health disparities in undergraduate classrooms use traditional pedagogies (Njoku, 2018; Vazquez et al., 2017). This study uses the lens of critical consciousness pedagogy to analyze how undergraduate students engage in learning about health disparities through self-paced online learning modules. Critical consciousness pedagogy is guided by constructs that center awareness, reflection, and action towards addressing inequalities for transforming systems designed to perpetuate health disparities (Freire, 2008; Jemal, 2017). In this study, students explored learning modules that asked them to reflect on topics of health disparities that addressed inequality, social identities, and grapple with how they perceive their role as future health professionals for transforming and eliminating health disparities. This study is guided by the following research questions:

1. How do pre-health professionals navigate their learning of health disparities through the course curriculum?

2. How do health disparities curriculums guide students in the development of critical consciousness?
    a. How do health disparities curriculums support the development of knowledge and awareness?

    b. How do health disparities curriculums support the development of self-reflection?

    c. How do health disparities curriculums support the development of action?

Significance of the Study

Health disparities are differences in health outcomes that result from social, economic, and political inequalities associated with disproportionate differences in incidence, prevalence, and burden of disease (Braveman, 2014; Njoku, 2018). More specifically, health disparities disproportionately impact BIPOC groups who "have been part of the American landscape for 400 years" (Hammond & Reverby, 2019, p.1348). Each of these groups are impacted by

systematic inequalities and continue to demonstrate increased rates of cancer, cardiovascular disease, diabetes, and kidney disease, HIV/AIDS, and death rates due to infant mortality and maternal mortality, (Rouse, 2016). Improving health literacy was a strategy targeted to address issues of health disparities in BIPOC communities but there was a very limited relationship between the two (Mantwill, et al., 2015). The educational strategies along with other approaches resulted in a reduction in cholesterol levels, deaths from heart disease and strokes, and the Black-white life expectancy gap decreased (DHHS 2011; Rouse, 2016). Initiatives that focus on community awareness and understanding of health disparities are important but are not the only factors that exist.

Other contributing factors are systemic and are associated with the educational preparation of pre-health and pre-medicine professionals. According to Wieland et al. (2010), health professionals lack awareness about social and institutional structures that impact the health of racial and ethnic communities which impedes their role in combating health disparities. Not recognizing health disparities as a major but solvable health crisis makes it more difficult to seek solutions. However, it becomes easier to blame the individuals impacted by them instead of the institutions that are not adequately preparing professionals to critically confront health disparities. For this study, I embed health disparities topics in an undergraduate human disease course.

This study is an ethnographic case study of embedding health disparities into an undergraduate human disease course. The purpose of this study was to assess how undergraduate pre-health professionals explored health disparities learning curriculum guided by critical consciousness. The curriculum was designed to provide students an opportunity to engage with historic and current implications of health disparities as well as confront social and economic inequalities to change them. When students engage in health disparities education before starting

a graduate program or career, they are more likely to use their position and voice to transform the current state of health making it more equitable for all.

This research is significant because traditionally the health and well-being of BIPOC has been viewed from a deficit perspective, overlooked, or altogether ignored in educational curriculums for preparing health and medical professionals. Although there has been a slight increase in topics that address health disparities implemented into undergraduate public health courses and specific areas of STEM, fewer courses are representative of all stakeholders from pre-health and medical professionals. Therefore, this study was designed to assess student learning on health disparity topics for informing instructors, departments, and institutions about the implications associated with student engagement. The findings from this research will contribute to the existing literature by increasing empirical knowledge and understanding for integrating teaching and learning about health disparities into undergraduate courses. The health disparities curriculum serves as a key contributor for teaching students how to critically and consciously engage with the topics. It was also used as a lens for highlighting and challenging oppressive ideologies perpetuated by students and professionals by way of institutional learning practices.

Communities Impacted by Health Disparities

Health disparities impact individuals and communities that have been historically marginalized or socially disadvantaged by society. Marginalization describes the experiences of those who live in the fringes of mainstream society and are usually excluded as a result of inequitable treatment (Crenshaw, 1989). Social disadvantages are a broad concept that includes economic disadvantage but also includes how individuals, groups, and communities are treated in a society based on position or identity (Braveman, 2014). The individuals and communities

impacted by health disparities consist of BIPOC groups, women, low socioeconomic status (SES), and poor or working-class communities. In this section, I highlight each of these marginalized identities and their association with health disparities.

Race and Ethnicity

The root causes of racial and ethnic health disparities are complex interactions related to social determinants of health associated with social, environmental, economic, and physical conditions that deprive individuals of living full and healthful lives (CDC, 2019; Kim et al., 2010). The areas where health disparities exist by BIPOC groups are extensive and include diabetes, hypertension, cardiovascular disease, HIV/AIDS, cancer screening and treatment, infant mortality, and maternal mortality (CDC, 2019). Over the years there has been a decline in the number of deaths that result from disease in the U.S., but these declines are not evident among BIPOC (Kim, et. al, 2010). Despite efforts to address and work towards the elimination of racial and ethnic disparities in health, they are more evident and visible now than in the past and are perpetuated in health and medicine across academia, health care, and social policies.

Health differences have long been associated with biological traits and genetic predispositions between racial groups. This association has had real tangible outcomes for those who identify as Black, Latinx, and Native Americans. The ideology associated with biological differences in health and medicine have long been rejected by researchers and linked to differences in social and economic structures and health policies (Williams & Sternthal, 2010). According to Roberts (2011) race is as political as it is a social system that governs individuals by assigning them to invented biological categories; therefore, race is not biological but viewed as a social construction with real-life implications for things such as wealth, health, and social status. Early sociological researchers such as DuBois (1899) and Myrdal (1944) wrote about the

dangers of creating social structures that result in health differences. In their work, both researchers highlighted differences in living environments, access to healthcare, and services. DuBois (1899) was one of the first researchers to contribute to the idea that race was not a scientific category and health disparities were the result of social, not biological, inequity (Yudell et al., 2016).

Early in the 20th century, his research challenged the structures and policies used to ensure adequate access to healthcare, services, and practices in white communities while consciously denying and overlooking disproportionate death and disease outcomes in Black communities. For example, during the New York cholera outbreak Dubois reported that to improve sanitation and the health of communities, all groups and locations within the city must be considered. He emphasized "the problem with the 20th century is the problem of the color line"; therefore to address the health needs in the U.S, health professionals must understand that germs have no color line" (DuBois, 1903, p.1). The inequitable structures that were identified then are present today and functioning in the ways that they were designed. With each wave of infectious disease outbreaks or disease, Black communities bear the brunt of the outcomes. Myrdal (1944) associated the various differences in outcome to racial prejudice and discrimination against Blacks. These discriminatory perspectives were held by whites who lived in southern parts of the U.S. who held strong racial ideologies and by whites who occupied Northern free states but had similar racial ideologies.

Health disparities are major contributors to mortality outcomes related to heart disease, cancer, diabetes, and cirrhosis of the liver and they are more prevalent today than they were in the 1950's (William & Rucker, 2000). In their research for understanding health disparities, William et al. (2000) identified that when left unchecked the embedded nature of racism, discrimination, and negative stereotypes held by whites results in discriminatory behaviors

against Black people even in health and medicine. Pieterse and Carter (2010) identified how institutionalized racism in the medical field resulted in the abuse of power in medical research and quality medical care. In many cases, it was not explicit but identified as unconscious and unintentional behaviors that occurred without conscious awareness. Despite the intended outcomes, the behaviors still had detrimental consequences for Black people. Though health disparities impact Black people at high rates, they also impact other communities of color such as Hispanic or Latinx and Native or Indigenous communities.

There are a large number of studies that report positive health outcomes for Hispanic or Latinx groups known as the "Hispanic Mortality Paradox" or the positive health status of Latinx families that migrate to the U.S. but overtime experience a decline in health outcomes (Paz & Massey, 2016; Velasco-Mondragon et al., 2016, p.1). However, for U.S. born Latinxs, there are disproportionate differences in rates of obesity, diabetes, heart disease, cancer, hypertension (Velasco-Mondragon, et al., 2016). There are also differences in medical access and treatment (William et al., 2000). Another factor that impacts the health of Latinx groups is they are typically placed into one category with little reference to the place of origin resulting in multiple gaps or lack of specificity for analyzing health disparities. For Latinx groups, failing to highlight the identities of each subgroup within the population contributed to the increase in disparities.

Disparities in health for Native American, Native Alaskan, or Indigenous communities have persisted for many generations with mortality rates at more than 50% higher than whites (Weinstein, et al., 2017). Native groups compared to other racial and ethnic groups have a lower life expectancy and higher prevalence of chronic diseases such as diabetes with a rate that is 2-3 times higher than whites (Adakai et al., 2018). Natives also have higher rates than whites for tuberculosis and specific types of cancers including stomach, liver, cervix, lung, breast, and kidney (NIH, 2018; Weinstein et al., 2017). However, cancer rates in Natives are lower than

those found in Black and Latinx groups. For decades, BIPOC have been disproportionately impacted by higher infant mortality rates, chronic and infectious diseases including obesity, heart disease, cancer, hypertension, premature death, human immunodeficiency virus (HIV), and more recently Covid-19 (CDC, 2020; Henry J. Kaiser Foundation, 2009; Weinstein, et al., 2017).

Gender

Women as a whole are more impacted by differences in health treatment, access to testing, and more frequent misdiagnosis than men. For example, clinical tests for cardiac treatments are often denied due to the lack of understanding of different symptoms identified in research for women than men (Braveman, 2011). Women are underrepresented in research and many of the symptoms they experience concerning disease go unidentified. Therefore, the disparities women experience are often referenced as biological because they are specific to women such as assessing the rates of ovarian cancer. The majority of the disparities that impact women have a non-biological association such as misdiagnosis of cardiovascular disease which impacts women at significantly higher rates despite the diseases being prevalent in both men and women (Weinstein, et al., 2017). Health disparities in this group are the result of social inequality in treatment and access to testing that impact women and those who identify as non-binary. Health disparities affect everyone that not a man.

The majority of health differences in gender are related to low socioeconomic status (SES) and result in a decrease in life expectancy, mental health disorders, alcohol and substance abuse, and violence victimization. Health for women as a group has improved overall, but not for women who carry racial and ethnic identities. According to the Department of Health and Human Services (2014), women of color have experienced improvements in life expectancy over the past decade as have all women, but show disproportionate differences in other areas such as

access to care, quality of care, higher disease and death outcomes. When gender and racial identity are both considered, health disparities become more exaggerated.

The Intersectional Impact

Health disparities impact people who hold multiple marginalized identities more than those who do not. Marginalized identities are identities that are typically conflated or ignored and located in the margins of society (Syed, 2010; Crenshaw, 1989). These marginalized identities take on different outcomes when two or more intersect. For example, race or Black and gender or women create an intersection of two marginalized identities. The intersectional experiences of black women are often linked to one of their identities but not both. According to Wing (2003), not all Black people are men, and not all women are white. Black women exist in the world as Black women, not white women plus color or Black men plus gender. Therefore, health experiences such as maternal mortality experienced by women of color must be acknowledged and affirmed. The CDC (2013) health disparities and inequalities report stated women of all racial and ethnic identities were more likely to report poor health than white women for most health categories.

Women of color are impacted by health disparities in disparate proportions. A life-course study by Braveman & Barclay (2009) was used to provide an understanding of how early life experiences define health potentially across generations or a lifetime. The life course literature for health disparities highlights that at every stage of life despite income or education, Black women experience more chronic stress, economic difficulties, and racial discrimination than white women. Health disparities are based on various factors and it should be noted when individuals occupy multiple marginalized identities.

Improving overall health for women of color includes recognizing how the intersectional experience impacts health outcomes that lead to improvements in health (Milburn et al., 2019).

Socioeconomic Status

The inequalities in health outcomes and health status in the global world are often attributed to poverty and disadvantages common to the poor and working class. While in the U.S., health inequalities are attributed to differences in health outcomes and are related to SES (i.e. educational attainment) with other attributing factors such as race/ethnicity, gender, sexuality, disability, and environmental inequalities. Health inequalities have been examined in the United Kingdom since 1913 and dominated much of the early 20th century. Historical research by Williams et al. (2010) discussed how sociologists like Dubois (1899) predicted that to structurally decrease the health disparity gap, society needed to acknowledge the extensive cost of disparities in the economy. Research by Johnson and Schoeni (2012) produced a greater understanding of the underlying process that produced health disparities between different racial and socioeconomic groups by measuring the extent by which health in later life is related to the contexts that individuals are born, grow up, live, and work. The researchers concluded that the gaps in health status for groups living in socioeconomically disadvantaged areas increase across the life course (Johnson & Schoeni, 2012). Those that are socially advantaged in income, wealth, education, occupation, and political office, tend to have better health indicators than BIPOC groups (Braveman, et al., 2011; Weinstein, et al., 2017).

Relevant Definitions

The differences in health prevalence, outcomes, and mortality are increasing, and the lines that separate them are drawn along racial and ethnic, gender, and SES factors. The terms

used to describe these differences consist of inequities (preventable and unjust differences in health), inequalities (preventable socioeconomic differences in health outcomes), and disparities (preventable disproportionate differences in health for BIPOC groups) (Bettez, 2013; Braveman, 2014). Although terms have been used interchangeably in research, they have precise definitions that are associated with measurable criteria and accountability for eliminating differences in health outcomes and mortality.

Health Equity: Health equity is defined as fairness or social justice in health (Braveman, 2016). As a human rights principle, health equity suggests that all people should be valued equally, have an equal opportunity to optimal health, and highlight the lack in the distribution of resources. (Braveman et al., 2016; Milburn et al., 2019). The definition ascribed to health inequities results in solutions at the macro level. According to Bettez (2013), the definition is centered around addressing governing policies, government systems, power structures, and economic resources. Health equity is based on the idea that all people are valued equally and it uses values or metrics from health inequality and disparities to determine if it is being achieved (Braveman, et al., 2011). Health equity is closely intertwined with health inequalities and disparities and it exists primarily because health differences are a lived reality for people that are socially and economically marginalized.

Health Inequalities: Health Inequalities are identified as socioeconomic differences in health unless determined otherwise (Braveman, et al., 2011). The term was coined by Margaret Whitehead (1992) as differences in health that are unnecessary, unfair, and unjust. Health inequalities were identified as differences in health among socioeconomic groups mostly based on gender, ethnic groups, nativity, and other social characteristics. The term health inequalities

shifted in meaning as it began to specifically focus on approaches that were ethics or human rights-based. According to Braveman (2016), health inequalities from an ethics perspective states that health is needed for functioning in every sphere of life to pursue quality life and for all to have a fair chance at health based on need and not a privilege (p. 41). Whereas, the human rights approach defines health inequalities as avoidable differences in health that adversely affect socially disadvantaged groups and more specific groups that have experienced discrimination or social exclusion (p.34). Health inequalities do not need to be based on social injustice, they only need to be used to distinguish differences in health among those that are disadvantaged (Braveman, 2016). For this research inequalities are used to effectively raise concerns about justice based on SES, however, it does not distinguish the differences in health between racial and ethnic groups.

Health Disparities: Health disparities are generally used to reference disproportionate differences in death and disease outcomes for BIPOC groups and communities. It was initially defined by the National Institutes of Health as differences in health among "specific populations" with little to no identifying criteria. (Braveman, 2016). The criteria used to define "specific" populations centered on individuals and groups who are disadvantaged as a result of race and ethnicity and when low SES or educational attainment was evaluated (Braveman, 2014; Braveman et al., 2009). Health disparities are preventable, systematic health differences that adversely affect vulnerable, disadvantaged, or marginalized groups that are displayed on an individual level, " reflect social injustices," and exist as part of institutional policies that govern health care (Braveman, et al., 2011, p. S149; Braveman et al., 2009). Health disparities adversely affect groups of people who systematically experienced greater social or economic obstacles historically linked to discrimination or exclusion. Eliminating health disparities are major

outcomes for ensuring equity in health. For this research, I will primarily use the term health disparities to reference the differences in health that impact BIPOC groups and communities.

Learning: Learning is a process where the learner takes what is learned and reinvents that learning to concrete empirical situations (Freire, 2008). Similarly, Dewey (1916) defined learning as a progressive process where inquiries move from dissatisfying areas of doubt to the satisfying resolution of problem-solving. Dewey's definition is similar to Freire's problem-posing education with one exception, learning was not used to confront inequality and take action to change it. However they were both in agreement that the learner is not a passive recipient- but an agent who takes it. In my research, I viewed learning as the process in which the learner comes to understand the world including its structures, institutions, systems, and practices that produce social inequality in hopes these students will reinvent, reimagine, and transform them.

Black and Indigenous People of Color (BIPOC): This acronym is used to describe the unique relationship to whiteness that Black and Indigenous people have which shapes their experiences of and relationship to white supremacy for all people of color in the U.S. context (BIPOC, 2020). For this research, BIPOC will be used when referring to people of color as a group. Otherwise, when referring to individual groups I will use the terminology for specifically addressing that group such as Black/African American, Hispanic/Latinx, and Native American/Indigenous groups.

Chapter Summary

Health disparities within BIPOC communities have reached crisis levels in the U.S., despite being preventable. This disproportionate rise in disease and death outcomes continue to

go unaddressed by all stakeholders in health and medicine, especially those in educational institutions that prepare and train them. It is in these educational spaces that students are intentionally or unintentionally taught to ignore, overlook, or attribute disproportionate outcomes to biological differences. These learned practices and behaviors have become major contributors to increasing health disparities. Therefore, to counter these learning practices, students must participate in learning that center health disparity curriculum.

In this research, I designed and implemented a health disparity curriculum into an undergraduate human disease course-guided by critical consciousness. The learning modules were designed to provide students with an opportunity to engage in health disparity topics early in their learning process and before enrolling in a graduate program or their profession. This study was designed for students to explore and engage in consciousness-raising activities for improving their level of awareness, reflection, and actions against inequitable health outcomes to change them.

CHAPTER 2. LITERATURE REVIEW

This chapter will provide a review of the literature to support this ethnographic case study. The review will cover a wide range of materials published in the last 5 to 10 years. Older literature was used for revisiting theoretical and conceptual ideas that are foundational to the topics. I approached this literature review with a critical consciousness lens and therefore, this review detailed multiple bodies of literature from the fields of health, medicine, sociology, and education that discuss health disparities. I organized this literature review using three sections: (1) Foundations of teaching and learning; (2) Health disparities teaching and learning and (3) Teaching and learning using critical perspectives. Finally, I discuss the use of critical consciousness as a theoretical framework and how I use its construct to inform learning.

Foundations of Education

> *Schools serve societies- in many ways all schools are microcosms of the societies in which they are embedded- and they are both mirror and window into the social reality… If one understands the schools, one can see the whole of society; if one fully grasps the intricacies of society, one will know something true about the schools (Winfield, 2007, p. xiii).*

I begin this literature review from a historical context to understand how education for health and medical professionals is related to reproducing knowledge that perpetuates health disparities or inequities. This historical context includes understanding how educational institutions in the U.S. are shaped and informed by dominant social ideologies. Dominant social ideologies specifically associated with race and ethnicity reproduced within curriculums, pedagogy, teaching, and learning have not only impacted educational institutions but societal institutions in general (Apple, 1982). According to Eisner (1994) curriculum ideologies are "beliefs about what schools should teach, for what ends, and for what reasons" they teach them

(p. 47). Curriculums are used to guide education and schooling. The influence of ideologies or general belief systems in education is powerful as they determine which curriculums are problematic or non-problematic or important or not important. Curriculum ideologies in medicine, for example, are the beliefs that disease outcomes in BIPOC are biological and genetic constructs that are not always explicit and function in subtle ways (Byrd & Clayton, 2000; Milner, 2017; Eisner, 1994). They also mirror dominant social ideologies embedded in systems of oppression that hinder health care providers from understanding the root of health disparities among BIPOC and poor people. Thus, these social dominant ideologies permeate beliefs and shape educational practices especially in health and medicine.

Educational institutions are social structures built on social dominant ideologies that mirror the larger society and reproduce knowledge through the socialization of students (McLaren, 2002; Zajacova & Lawrence, 2018). According to Bourdieu (1973), education holds patent forms of power and privilege transmissions that contribute to the reproduction of social norms influenced by the dominant culture and social class structures. McLaren (2002) defines dominant culture as social practices and representations that affirm central values, interests, and concerns of the dominant social class and their control of the material and symbolic wealth of society. As such, the embedded educational ideologies and practices were created to educate the dominant culture and those it was designed to serve.

Institutions of higher education were also designed to uphold and adhere to practices of implicit pedagogic action that required familiarity with the dominant culture, which suggests that information and training were initially received and acquired only by specific cultural groups (Bourdieu, 1973). The institutional structure was “inherited from the past and transmitted from generation to generation … [with] pedagogic action directed at indoctrinating the dominant culture” (Bourdieu, 1973 p. 60). The teachings used to indoctrinate the dominant culture applied

deficit perspectives to historically marginalized groups. As a result, institutions served two primary purposes: to reproduce the ideologies of the dominant culture and to strip non-dominant groups of their culture, identity, and cultural practices such as language (Milner, 2017). Thus, these practices benefitted some (dominant) and neglected others (marginalized). However, institutions have a choice to either embrace curriculums that have the capacity to reproduce, exclude, and neglect or they have the power to shape consciousness (Nash, 1990).

Curriculums for Teaching and Learning

Curriculums are defined by what students have the opportunity to learn. Curriculums can be described as a series of planned events designed to have educational consequences for all students (Milner, 2017). In his book, the *Educational Imagination*, Eisner (1994) identifies three forms of curriculum: the explicit, the implicit, and the hidden. The explicit curriculums are represented by the goals and visual representations noted within school guidelines, policies, and standards. These curriculums are embedded within course objectives, goals, and textbooks or learning resources. Whereas, implicit curriculums are expectations that give meaning to schools as cultural systems that encourage ideas such as compliant behavior and competition. The implicit curriculum is highlighted to bring understanding to the idea that schools teach more than what is advertised both intentionally and unintentionally.

The hidden curriculum is an extension of the implicit curriculum with one exception, the hidden curriculum consists of learning opportunities oftentimes not afforded to students, perspectives absent from learning experiences, or curriculums that schools do not explicitly teach (Eisner, 1994). They are perspectives students will never know, “they become concepts and skills that are not a part of their intellectual repertoire” (Eisner, 1994, p. 107) The hidden curriculum is learning based on the omission of learning opportunities or “the absence of a set of

considerations or perspectives...for appraising context biases or the evidence one is able to take into account" (Eisner, 1994, p. 97). The hidden curriculum negates students from engaging in learning that fully informs the intellectual process. Milner (2017) conceptualized the hidden curriculum by suggesting what is excluded is viewed as less valuable and what is absent is immensely present. In health and medicine, hidden curriculums are used to reproduce and uphold dominant social ideologies about race, gender, and class in modern educational practices that we are not always conscious of.

Health, Medicine, and Science Education

All institutions of education were shaped during a time in U.S. history dominated by eugenics ideology. According to Winfield (2007), eugenics is "an idea, a doctrine, a science (applied human genetics), a set of practices (ranging from birth control to euthanasia), and a social movement" (p. 4). Educational institutions such as teacher colleges, universities, and colleges of health and medicine during the 18th and 19th centuries supported eugenics (McCune, 2012). In health and medicine, eugenics was used to reinforce racial medicine by stating people of different races inherited not only differences in appearance, intellect, moral character, and sexual behavior, but also maintained differences in susceptibility to disease (Byrd & Clayton, 2000; Lombardo & Dorr 2006). Eugenics ideology in health and medicine in America traces a path that extends from slavery to 19th-century landmark researchers such as Samuel A. Cartwright and James Marion Sims (Hoffman, 2016; Lujan & Dicarlo, 2018). The work of Cartwright for the use of spirometry to measure deficiencies in pulmonary function and Sims whose cited works on pain tolerance positioning Blacks as more resistant to pain and injury became foundational theories (Washington, 2006). Their theories laid the groundwork for some of the first "scientific fallacies of reification and rankings" that emerged from the U.S. (Byrd &

Clayton, 2000 p.86). The ideas associated with the works of these researchers initiated Black inferiority in medicine that dehumanized marginalized patients for the advancement of health and sciences (Byrd & Clayton, 2000; Lombardo et al., 2006; Washington, 2006). These ideas were influential in guiding the work of other researchers.

Past Perspectives

In the U.S., foundational principles for eugenics began with concern for the preservation of the racial "superior stock" (Winfield, 2007, p.1) that emerged from the work of researchers and embedded into educational curriculums (Byrd & Clayton, 2000; Winfield, 2007). A large majority of the material on scientific racism between 1914-1928 emanated from some of the nation's leading educational institutions and medical schools such as Virginia, Harvard, Columbia, Cornell, and Brown (Byrd & Clayton, 2000; Winfield, 2007). The number of course offerings at these institutions that integrated eugenics within the curriculum increased from 44 to 376 across multiple content areas and enrolled more than 20,000 students (Lombardo et al., 2006). Eugenics was integral in many aspects of education including teacher training, curriculum development, and school organization. These practices were espoused and upheld by top scholars as foundational institutional practices.

According to Winfield (2007), the legacy that was "informed and created by eugenics defined our thinking about race, ability, and human worth" (p. 3). Eugenics teachings were taught and practiced publicly among educators, medical and health practitioners, researchers, and were used to shape medical policies until after World War II when eugenics enthusiasts were forced underground and out of mainstream society. Ideology related to eugenics following the war was ruled as poor science and rejected on scientific grounds of extreme race and class biases which led to the use of discretion by institutions, researchers, and practicing professionals (Byrd

& Clayton, 2000). Eugenics was evident in the ideas and theories of students and scientists who were inspired by and continued to support the work of race medicine. For example, those who conducted the Tuskegee study of untreated syphilis among Black males between 1932-1972 and those who carried out the sterilization studies of Black women in North Carolina post-WWII were trained using the teachings of eugenics (Lombardo et al., 2006). Though eugenics was no longer explicitly endorsed, the beliefs associated with race medicine or biological or genetic differences based on race continued to show up as foundational ways for understanding disease.

Past Perspectives in Modern Society

The racial ideologies used to shape medicine and science in the past are just as prevalent in research, medical practices, and learning today as it was then. In a recent study on racial bias in pain assessment and treatment, researchers conducted two studies on pain to examine the difference between how medical professional students versus nonmedical students interpret a person's pain based on race (Hoffman et al., 2016). The first study assessed individuals without medical backgrounds and the second study assessed medical and health professional students (Hoffman et al., 2016). The findings reported that both groups believed Black people exhibited biological differences that created in them a higher tolerance for pain (Hoffman et al., 2016). For individuals without medical backgrounds, these false beliefs about race-based pain only resulted in bias (Hoffman et al., 2016). However, for medical students, these beliefs resulted in racial bias that would guide how they would treat pain in their Black patients (Hoffman et al., 2016). A similar study recommended that academic programs for health and medical professionals' must increase student knowledge and care for appropriate methods of treatment while acknowledging how pain is treated by professionals as an ethical issue (Shavers et al., 2010). Thus, race-based beliefs about biological differences in pain in Blacks date as far back as slavery and contribute to

racial and ethnic health disparities (Hoffman et al., 2016; Shavers et al., 2010; Villarosa, 2019). The difference in pain is not the only area where biological differences based on race exist.

The historical perspectives about race and ethnicity continue to be perpetuated in health and medical institutions and practices via hidden and sometimes explicit curriculums. The ideas are not explicitly written into medical school training nor are they present in informal course curriculums or lectures, yet they are deeply embedded and supported by institutions, instructors, board exams, and research journals (Yudell et al., 2016; Gaufberg et al., 2010). Institutions tend to embody ideas that are openly hidden, such as race as biological, and neglect social implications on health, which have major implications on students becoming professionals (Olsen, 2019; Tsai, 2016). For example, in one study students discussed areas in the curriculum where race was labeled as a biological risk, such as in board exams (Ripp & Braun, 2017). The article noted that questions about genetics and disease on the board exams disproportionately favored Blacks or African Americans as a racial group more than any other group in the U.S. When preparing for the exam, students were advised by older classmates to embrace racial stereotypes in order to achieve success (Swetliz, 2016). For example, " if you see the term African American just automatically select sickle cell anemia" (Swetliz, 2016). These are examples of how dominant social ideologies like disease being biological or genetic are upheld in dominant settings. Therefore, teaching students to observe social determinants as a proxy for health is even more important.

Another way students experience hidden curriculums is through interactions with those in positions of power. Students that experienced their instructors or mentors expressing racial bias adopted similar attitudes (Burke et al., 2017). In other cases, students who enter their programs with an open mind about race are coerced to assume biased and discriminatory perspectives (Byrd & Clayton, 2000). Students are informed about the hidden curriculum through long-held

ideologies about race and disease, daily interaction, and exam prep all of which serve to perpetuate health disparities.

Researchers highlighting a different perspective on medical education suggested eliminating the hidden curriculum in educational institutions and to re-shape the curriculums to be more effective (Chuang et al., 2010). However, what researchers failed to take into consideration is that other institutions work in agreement to reinforce social ideologies such as the church, family, and school. All of these institutional ideologies work together and "play a critical role in shaping one's professional identity" (p. 316). The hidden or explicit ways of learning embedded in these institutions will continue to be perpetuated if left untouched or never addressed. However, outcomes become more harmful when used in medical education, where the impact of racial distinctions for disease and diagnostic expectations result in disproportionate death rates (Lombardo et al., 2006). The ideological beliefs linked to biased and stereotypical social beliefs reproduced in institutions of learning have contributed to the increasing health disparities in the U.S.

Health Disparities for Teaching and Learning

Health disparities education has been recently included in teaching and learning to improve learning around health practices and behaviors known to impact BIPOC. While this may be considered a good approach, researchers suggest that informing health and pre-health professionals through teaching and learning is beneficial for eliminating differences in health outcomes. Education for health disparities is also an approach not only designed to address the communities impacted by health inequities but to inform the health and medical practices. In the

following section, I discuss research focused on the practices and outcomes of teaching and learning used to explicitly confront ideologies that inform curriculums that contribute to health disparities.

Educating Communities

One of the most common approaches used for addressing health disparities has focused on educating BIPOC communities for eliminating health disparities. A study by Israel et al. (2010) highlighted a series of workshops for training BIPOC communities in strategies for eliminating disparities. The researchers suggested that more community-based teaching and learning for health professionals as being more important for helping build partnerships between communities and medical professionals. Their research concluded that community participatory research was promising for solving relevant problems and fostering community partnerships but not for minimizing disparities. In a similar study on community-based teaching, Cené (2009) used teaching to build community relationships, increasing institutional trust among communities of color, shaping the physician's cultural competency, communication, and commitment to health advocacy. Cené's (2009) research highlighted multiple challenges for teaching disparities that instructors should take into consideration and be willing to confront the stereotypes and biases that emerged within interactions between BIPOC. Instructors should also understand the subconscious or implicit biases they hold about the communities they serve because their attitudes and behaviors influence how they provide care (Cené, 2009).

Other instructional challenges associated with training programs designed to send health professionals into BIPOC communities to create partnerships to eliminate health disparities include the time spent self-reflecting on their own biases. It was concluded that when professionals had not spent time learning, discussing, and reflecting on their biases and

stereotypes, or understanding shifts in power, interaction with BIPOC communities resulted in harm (Cené, 2009). Discriminatory behaviors and implicit biases increase community members' skepticism about working with health professionals (Cené, 2009). Health disparities continue to increase despite the communities impacted by disparities, increasing knowledge and awareness about behavioral changes, collaborations with health professionals, and access to services. Improving educational efforts in communities impacted by health disparities is useful for informing BIPOC communities especially if done collaboratively.

Educating Health Professionals

Educating health professionals about the social and economic factors that contribute to disproportionate disease outcomes experienced by BIPOC is vital for eliminating health disparities (Gollust et al., 2018). Educational training programs used to inform professionals about social inequities prepare them to acknowledge and confront discrimination and biases and to engage in practices for improving care (Gollust et al., 2018). There has always been an assumption that because health professionals were trained to promote core values of honesty, compassion, and empathy that they were somehow exempt from biased and discriminatory practices. When in reality, their ways of knowing had been shaped by dominant social ideologies that did not ensure ethical and unbiased training.

In their report, "*Unequal Treatment*", the Institution of Medicines reported racial and ethnic disparities in health and medicine positioned within the context of historical and contemporary social and economic inequalities (Betancourt & Maina, 2004). The report noted that professionals were under the assumption that these differences in health were more related to SES and equal access to health services (Smedley, et al., 2003). According to Smedley, et al., (2003) the health outcomes of Black people did not improve when provided equal access to

treatment and resources accounting for all areas of SES. (Betancourt & Maina, 2004; Smedley, et al., 2003). However, the researchers reported findings that suggested all professional stakeholders (i.e. systems, providers, patients, etc.) were contributors to racial and ethnic health disparities. The findings also reported clinical uncertainties among professionals that were influenced by bias, stereotyping, and prejudice which also contributes to disparities (Betancourt & Maina, 2004; Smedley, et al., 2003). The report recommended additional educational training for professionals that promoted and increased awareness of racial and ethnic treatment disparities, the recruitment and retention of BIPOC into all levels of academia, and required professionals to explore cross-cultural perspectives. At its most basic level, the report recommended that educational programs design learning opportunities that address health disparities by acknowledging its existence and prioritize training (Awosogba et al, 2013; Ross et al., 2010; Tsai, et al., 2016).

Health Disparities in Health and Medicine Education

For many institutions of education, curriculum design for health disparities work is still in its infancy and implementation is a slow and tedious process whereby, many health professionals are unaware of the extent or severity that health disparities have on various BIPOC communities engaging in teaching and learning that address health disparity, bias, or discrimination (Smith et al., 2015; Ross et al., 2010; Wieland et al., 2010). Wieland et al. (2010) stated that the medical professional's knowledge about racial and ethnic disparities was limited compared to knowledge about other medical topics. Therefore, to address disparities educational institutions and organizations needed to focus attention on the types of training equipped to tackle them.

Ross et al. (2010) designed a study where learning modules were used to promote the elimination of health disparities through education and training. The learning modules trained

small groups using a framework known as “Train-the-Trainer” (p. S162). To effectively implement this process, Ross et al. (2010) recommended that instructors gain experience facilitating discussions centered on issues around race, bias, and disparities. The goal of this curriculum was to provide educators the training to address historic racial and ethnic disparities produced in educational settings (Ross, et.al, 2010; Tsai, 2016). Many of the newer curriculum designs were created to assist health and medical instructors in integrating teaching and learning about health disparities into medical curriculums for eliminating health disparities (Smith et al. (2015; Wieland et al., 2010). For example, Smith et al. (2015) designed guidelines for medical education curriculums centering racial and ethnic health disparities in health and healthcare for teaching medical students, residents, and practitioners. Although the design of current medical curriculums has expanded to include health disparities, curriculums also affect attitudes, knowledge, and skills (Smith et al., 2015). However, this curriculum like so many others suggests that the approach must be “similar to other aspects of medical education that…valued parts of training” (Smith et al., 2015, p. 660). By standardizing curriculums, medical education training programs are at risk of perpetuating the same dominant traditional forms mentioned earlier, while expecting transformative outcomes.

Wieland et al. (2010) assessed the knowledge of resident physicians for issues that impact underserved communities. They found that the majority of the residents were somewhat or not at all confident about topics related to patient access, socioeconomic status, or racial and ethnic health disparities (Wieland et al., 2010). When measuring actual knowledge, white female residents were more confident than their white male counterparts, and African Americans, male and female, were more confident than all other racial, ethnic, or gender groups. The research team found that the critical work for eliminating health disparities required adequate physician knowledge about those impacted by health disparities. This study revealed the importance of

physician engagement in curriculums that inform knowledge about histories and topics centering BIPOC. The limited awareness of BIPOC groups reflected an educational structure that has traditionally focused on cognitive and disease topics and completely ignored how race is used to operationalize treatment and care. (Tsai, 2016; Wieland et al., 2010). For health disparities to be eliminated, institutions of education must better inform and equip health and medical professionals about these issues. Institutions must also train them to confront and acknowledge the harm BIPOC communities have experienced at the hands of professionals by integrating various topics into course curriculums and creating opportunities for ongoing dialogue about how these practices show up in teaching and learning.

According to Burgess (2011), health organizations like the NIH and the AMA committed to "shifting the focus from the race of the patient to societal racism" (p. 829). Before this shift, medical and health professionals perceived BIPOC patients through a racial lens which oftentimes led to negative outcomes related to poor treatment (Burgess, 2011; Hoffman et al., 2016). These racialized practices freed medical and health professionals from the accountability of poor health outcomes among BIPOC communities. Those outcomes included confirmed biases or ideologies that support biological or genetic differences as mentioned earlier (Byrd & Clayton, 2000; Hoffman et al., 2016). The initial training was used to address the narratives that professionals were adopting to blame or justify poor health outcomes in their patients (Burgess, 2011). Thus, the role of education and training was to shift the focus from racial factors and individual behaviors as the primary cause of disparities to include the role of institutions and social structures. The shift from focusing on patients to providers in learning institutions are typically accompanied by curriculums that embed topics on health disparities, inequities, racial bias, and discrimination (Burgess, 2011). The curriculums were designed to highlight broader societal attitudes about race and racism for targeting provider bias as it exists to endorse

dominant ideals that perpetuate health disparities (Cohn 2019; Burgess, 2011). The implementation of bias tests has become a primary tool and individual assessment for measuring the level of bias.

The Harvard Implicit Bias Test has become a popular measure for understanding unconscious bias. Unconscious biases are deep-seated beliefs or feelings that impact responses, reactions, actions, and practices by the individuals but they are not intentional (Wieland, 2010). Teaching and learning about the link between provider bias and health disparities have resulted in varying learning outcomes. Negative learning outcomes were reported by Burgess (2011) that suggested racial implicit bias testing resulted in providers and others feeling "threatened by the existence of racial inequality and white privilege" (p. 829). These types of responses are designed to minimize or deny one's contribution to health disparities and are used to ensure a positive view of oneself. These types of responses were defined by DiAngelo (2018) as white fragility or "responses that work to reinstate white equilibrium as they repel and challenge, racial comfort, and maintain domination in a racial hierarchy" (p. 2). According to DiAngelo (2018) training that directly addressed racism and privilege tended to result in responses of "anger, withdrawal, emotional incapacitation, guilt, argumentation, and cognitive dissonance" (p. 101). The outcome of these types of training tends to negatively impact provider interactions with patients and learning. Cohan (2019) stated that fragility keeps professionals weighed down by their unwillingness to examine how they contribute to and perpetuate racial health disparities. The negative outcomes from these biased training have greater consequences and risks for the communities being served because they result in increased provider bias, distancing and avoidance behaviors by providers, and feelings of fear by providers for patients of different races (Burgess, 2011).

Poor communication and nonverbal interactions also contributed to negative outcomes that resulted in BIPOC feeling ignored and unsafe (Williams, et al., 2019). To address these negative outcomes associated with implicit bias testing, researchers recommended effective training that included self-reflection or "humility and respect for patients as a revolutionary act against racism" (Cohan, 2019, p. 805). Burgess (2011) suggested that using self-affirming theories to communicate bias as it guides participants in maintaining a positive view of themselves may possibly avoid "backlash or resistance" (p. 829). Teaching and learning that minimize the importance of health disparities by pampering or seeking ways to alleviate negative outcomes limit professional growth. According to Cohan (2019), health and medical professionals cannot afford to approach health disparities based on feelings of threat because when they do it is at the expense of others. The researcher goes on to suggest that dwelling on shame is counterproductive to positive learning outcomes but self-reflection promotes a deeper understanding of privilege and the system that benefits some and causes others to suffer (Cohan, 2019, p.806). Teaching and learning that focuses on biases are most impactful if it is designed to guide participants through feelings of helplessness that emerge from addressing structural inequalities (Metzl, et al., 2018). Teaching for effective learning outcomes is designed to expose social dominant ideologies and improve students' ability to create strategies for responding (Gaufberg, et al., 2010). The goal of implementing these practices that focus on the provider is to improve the provider's ability to understand, communicate with, and provide equitable care for individuals from diverse backgrounds (Betancourt & Maina, 2004). Therefore, in this research for confronting health inequities, educational training was extended beyond awareness of health disparities and bias.

Health Disparities in Undergraduate Education

Implementing teaching and learning about health disparities earlier in the academic journey has powerful implications for producing equitable outcomes. Learning that occurs in undergraduate education helps students increase their knowledge and awareness of health disparities (Njoku, 2018; Vazquez et al., 2017). However, little has been done to connect health education to justice and social change (Metzl et al., 2018). Integrating health disparities topics into undergraduate teaching and learning curriculums are beneficial for increasing student awareness and possibly inspire future careers in health and medicine that target disparities. The initial part of the educational process is to integrate the topic into course curriculums that link health disparities awareness to knowledge development and attitudes about disparities (Njoku, 2018; Benabentos, et al., 2014).

There have been studies that integrate health disparities into undergraduate courses but those that have, focus on various outcomes. In her research, Njoku (2018) explored how instructors designed two undergraduate public health courses that included a health promotion course and a rural public health course to promote understanding of the existence, contribution, and consequences of health disparities in the U.S. In their study, they described how materials designed to increase health disparities awareness were incorporated into learning outcomes, assessment methods, lecture topics, and lecture objectives for the course. The methods used to implement and access data for learning were case studies, quizzes, presentations, discussion board postings, reflective writing assignments, and brainstorming activities for learning to become familiar with participating in peer collaborations. These ideas were based on a learner-centered approach for adopting effective strategies for promoting increases in student learning, critical thinking, problem-solving, collaboration, and active learning (Weimer, 2013). The findings showed a significant increase in student understanding of the term health disparities, the

ability to discuss strategies for reducing health disparities, and attitudes about disparities related knowledge. Njoku (2018) concluded that offering health disparities courses in undergraduate curriculums could encourage interdisciplinary collaborations among undergraduate departments.

In a similar study, Vazquez et al. (2017) discussed the implementation of health disparity topics in undergraduate biomedical engineering courses. The study was a four-year educational project introducing students to the impact of health disparities through educational training, undergraduate research, and independent design projects to increase awareness. The researchers took a slightly different approach to integrate health disparities than Njoku (2018). They assessed the integration of health disparities modules into the required core curriculum for four consecutive years. Their data collection methods included lectures, case studies, assignments, and provided collaborative research opportunities for students to include the impacts and disparity-based challenges into their final capstone or research projects. Although the previous researchers discussed strategies to inform students about health disparity topics, only Njoku and Wakeel (2019) described student participation in collaborative learning activities or what was described as visual illustrations used to promote deeper student learning and understanding of complex concepts associated with health disparities. The studies used different approaches for integrating health disparities into undergraduate curriculums, but raised student awareness and knowledge of health disparities.

Increased awareness and long-term engagement are linked to the idea that exposure to health disparities would inspire future professionals to engage with the work on a deeper and permanent level. Vela et al. (2010) suggested exposure could promote a level of awareness that causes the student to contextualize societal impacts in a way that affects health and encouraged students to engage in health disparities work in their education, research, and practice. To add, Benabentos et al. (2014) used similar language to express how increasing the awareness of health

disparities can potentially inspire a health workforce that could help close the gap in health outcomes. It is true that improving undergraduate interest in health disparities is determined through increased awareness or exposure to teaching and learning about socially relevant topics that can be integrated within course work and exemplified within student projects (Vazquez et al., 2017). Incorporating health disparities competencies into undergraduate teaching and learning can help prepare, engage, and perhaps motivate students to eliminate health disparities as they pursue career paths in health and medicine. Vazquez et al. (2017) suggested including health disparities learning modules within undergraduate curriculum to help broaden how students make decisions, especially students that are racially and ethnically diverse and who may be associated with communities that are disproportionately impacted (Benabentos et al., 2014).

Undergraduate programs that implemented health disparities into their curriculums are recognized as true pioneers of the work. According to Benabentos et al., (2014) there are not many institutional departments with undergraduate courses that have integrated health disparities (Benabentos et al., 2014). The researchers conducted a literature review to assess the number of undergraduate courses and programs that use the term health disparities within the course title or course description. A randomized selection of 100 schools and course catalogs were identified. Then, the research team reviewed course descriptions and catalog titles for content on health disparities. The team searched course titles and descriptions of any discipline for substantial content on health disparities and found that the majority of the programs assessed contained little to no courses or curriculum with a focus on health disparities. However, 40% of the schools offered topics on health disparities as a significant aspect of the courses, they were interdisciplinary and housed in the social sciences (26%), public health (28%), and nursing (23%) departments. Undergraduate courses that incorporated health disparity topics into their curriculums, demonstrated a connection between motivation for student engagement,

interdisciplinary collaborations across majors, and increased interest in serving racially diverse communities (Benabentos et al., 2014; Njoku, 2018; Vazquez et al., 2017).

Programs that integrated health disparities into the curriculum earlier provided resources, tools, and opportunities that grappled with personal ideals and beliefs for tackling disparities. Faculty maintain the disciplinary range to foster critical discussions about racial and ethnic disparities (Braun & Sanders, 2017). For the instructors, departments, and institutions that implement topics about health disparities into teaching and learning, they focused on increasing awareness and the outcomes associated with future engagement. According to Burgess (2007), an increase in student awareness on topics that address racial bias and white privilege resulted in the use of "modern racism" (p. 829). Modern racism in this research was defined as the denial that racial inequality due to discrimination exists and is used to justify white privilege (Sensoy & DiAngelo, 2017; Burgess, 2011). Researchers that focus on health disparities in undergraduate courses focused on various curriculums to increase student awareness. For this study, I viewed student learning through the lens of critical pedagogy as a way to expand and deepen the teaching and learning about health disparities beyond awareness.

A Critical Perspective

Critical Pedagogies are based on critical educational theories and practices that encourage an understanding of the interlocking nature of ideology, power, and culture (Stommel, 2014; Jemal, 2017). Inspired by the works of Paulo Freire, bell hooks, and Henry Giroux, the goal of critical pedagogy is to provide students with analytical tools for opposing oppressive and widely accepted dominant traditions of learning. Critical consciousness is also used to guide individuals through various levels of consciousness where they can freely recognize their identities and human potential to resist and transform practices (Jemal, 2017). Unlike other ways of knowing,

critical pedagogy is more concerned with an ongoing process of discovery where knowledge emerges within a community or it extends from multiple people in dialogue making meaning through “kind friction” (Strommel, 2014, p. 1). According to Cammarota (2011), critical pedagogy encourages the development of engaged, active students ready to participate in a democratic society and contribute to its overall health and progress.

In this study, critical pedagogy will be foundational in the construction of the health disparity learning curriculum. Critical pedagogy will provide students the space to recognize, acknowledge, challenge, and push back against dominant social norms both individually and collectively. Some of the common practices of critical pedagogical practices and actions include but are not limited to authentic dialogue, shared stories, questioning the status quo, and challenging power hierarchies (Halman, et al., 2017).

Each of these strategies embraces the idea that all knowledge can be examined or questioned. Especially when considering that all knowledge is shaped within the social context and by the individuals that produce knowledge, for this reason, it becomes that much more imperative to question all knowledge with the understanding that it does not transcend culture or history (McLaren, 2018). Critical pedagogies are designed to uncover historic forces in educational discourses and practices that are hidden in traditional and virtual spaces. In this research, the term critical pedagogy means the philosophy of education and practice of teaching informed by critical consciousness.

Critical Digital Pedagogy

Critical digital pedagogy (CDP) is a critical pedagogy that happens in digital spaces. There are shared interests between CDP and critical pedagogy that recognizes social justice, inclusion, and diversity issues and places them at the center of learning (Stommel, 2014).

Another resemblance between the two is a commitment to the critique of oppression and emancipation (Papendieck, 2018). However, CDP and critical pedagogy share a primary interest in critically understanding who the students are, the experiences they bring, the communities they come from, and how they engage with the world (Stommel, 2014). When digital technologies are not used to challenge inequitable systems, they continue to reproduce and uphold the oppressive status quo (Papendieck, 2018). Critical digital pedagogy was used for reimagining how communication and collaboration happen across boundaries (i.e. cultural and political) in a digital space which was instrumental in designing and implementing the health disparity curriculum for online learning platforms and discussion boards (Stommel, 2014). CDP also broadened the ways students interacted with topics for critiquing oppression. Moreover, CDP provided an online space for collaborating across the course and reflecting on health disparity topics. Ultimately, CDP was instrumental in placing health disparities at the center of learning and within a digital environment.

Cultural Competence vs Critical Consciousness Pedagogies

The use of critical pedagogies has become very popular for getting students to think deeply about health disparities and how it impacts them, others, and the spaces they occupy in the world (Brommelsiek et al., 2018; Burgess, 2011). There are multiple ways that critical pedagogies are currently being used to guide curriculums for advancing student learning. I will discuss two of the most frequently used critical pedagogies for teaching health disparities: cultural competence and critical consciousness.

Cultural Competence

Cultural competence is a framework designed to address existing differences related to cultural needs and beliefs between professionals and patients (Brommelsiek et al., 2018; Marzilli, 2016). The term cultural competence was coined by Cross (1989) and defined as a set of appropriate behaviors, attitudes, and policies that assist people within organizations to function within cross-cultural situations. The continual reworking of the definition by various researchers included establishing effective interpersonal and working relationships where individuals recognized cultural differences, social and cultural influences on patients, the provision of quality care, and considered the role of culture (Burgess, 2011; Sharifi, 2019).

Competency is one of the primary cornerstones of medicine specifically as it relates to the treatment and care of patients. The call for cultural competence was recommended to highlight the need for patient involvement, improved care, and a decrease in provider bias (Brommelsiek, et al, 2018). Significant differences in health outcomes are attributed to the level of competency, treatment, and care reserved for treating specific communities/populations. According to Brommelsiek et al. (2018) to be competent in the health profession without understanding various cultures becomes a "detached mastery of a discrete skill because there are no values considered and no human behind the understanding" (p. 158). Cultural competence as a pedagogical approach became more significant for addressing health disparities as racially and culturally diverse populations began to increase in the U.S. The approach was designed to increase understanding and provide adequate and informed care to the growing population.

Implementing Cultural Competence. Integrating cultural competence into curriculum is based on the understanding that "nontechnical humanistic skills such as empathy and willingness to be open" is required when seeking to understand the culture and cultural beliefs of

others (Brommelsiek et al., 2018, p. 158). According to Luquis and Perez (2014) becoming culturally competent is a complex and lifelong journey, not something that occurs after one training or course. To be culturally competent requires a continual commitment on the part of health and medical professionals to evolve. Cultural concepts were designed to train providers to respect and value other's beliefs and behaviors so others can experience "feelings of respect and empowerment" (Sharifi, et al., 2019; p. 6). Cultural concepts are also being implemented in student learning programs.

In a study by Brommelsiek et al. (2018) cultural competency was used to measure the attitudes of professional students enrolled in graduate health programs from various departments such as nutrition, pharmacy, social work, and clinical psychology following their participation in immersive teaching and learning experiences. The researchers reported, culturally proficient students became culturally proficient professionals with skills crucial for addressing student confidence and patient needs (Brommelsiek et al., 2018). Despite these ideas, students taking these courses often reported mixed reviews on their understanding of how to implement and provide cultural competency. Student reviews were based on how instructors implemented the curriculum. For example, if the instructors' comfort level was low, their style of teaching was more theoretical, or their strategies lacked opportunities to practice cultural competency (Sumpter & Carthon, 2011). Concerning other conversations on health disparities, Sumpter and Carthon (2011) suggested that the earlier in academia (i.e. undergraduate) and more frequent cultural competencies are taught, the greater the student's understanding. Despite student participation in understanding competency, their understanding is never based on their own life experiences which could prevent them from deeply understanding and accepting another person's culture along with the associated complexities (Sandell et al., 2015).

Cultural competency does little for helping students challenge their own attitudes, behaviors, beliefs, and practices of students.

Cultural competency training has been used to prepare students to increase their learning or awareness of other cultures by promoting personal and humanistic interactions for improving health outcomes across all racial and ethnic groups (Marzilli, 2016; Brommelsiek et al., 2018). Nonetheless, these behaviors and interactions are only part of the teaching and learning needed for improving care and eliminating health disparities. Challenging bias and discrimination is also a requisite but cultural competence training on its own is not capable of guiding students through processes that focus on critical awareness, reflection, and action.

Critical Consciousness

Critical consciousness is a process where learners become conscious about the ways they think about themselves, make meaning of the world, and how they use new perspectives to transform their thinking (Freire, 2005). The objective of critical consciousness addresses multi-systemic oppression and enables the oppressed to gain an understanding of oppressive forces (Freire, 2005; Freire, 2008). Freire's (2005) work ascribed to the belief that oppressive forces are not part of the natural order, but are attributed to historic, political, and socially constructed dominant human forces that are transformed by those who are conscious of them (Diemer et al., 2016; Jemal, 2018). Consciousness according to Freire (2005) does not exist apart from knowledge which includes individual and collective searching and trying to make sense of the world.

Freire (2005) discussed two aspects of education that are used in classrooms and one guides towards consciousness through curiosity while the other minimizes both consciousness and curiosity. The dominant knowledge perspective associated with what's referenced as

banking education is viewed as "neutral, value-free, and objective, existing totally outside of human consciousness…and separate from how people use it" (Frankenstein, 2019). Banking education is one of the educational approaches used by Freire (2005) to ascribe meaning to how institutions approach learning. For example, teachers in this model serve as the depositor of knowledge and students receive, memorize, and repeat the content provided (Freire, 2005). In the banking model of education, student growth is limited to what is deposited and received. However, as students work to store deposited information, their creativity, curiosity, and ability to develop critical consciousness declines (Freire, 2005; Lewis, 2012). Banking education is viewed as oppressive because it conceals facts or takes away one's rights to consciousness awareness that explains how or the ways people exist in the world (Freire, 2005; Lewis, 2012). The preferred method of education designed for critical consciousness embraces liberatory and emancipatory pedagogies (Freire, 2005; Freire, 2008).

Implementing Critical Consciousness. Critical consciousness pedagogy centers around the ideas that students and teachers can perceive their personal and social realities, perceive contradictions within that reality, become conscious of their perceptions of that reality, and use a critical approach to tackle it (Freire, 2008). These interactions with the world and those that occupy it are cultivated through problem-posing education and dialogue.

Problem-Posing Education. Problem-posing education presumes that knowledge is not neutral, it can be used to inform and educate people in ways that humanize and increase consciousness. This form of education assumes neither a fixed nor static reality, because if either is true "there is nothing humans could do to transform or change it" (Au, 2007 p.183). The whole idea behind critical consciousness is to critically and consciously engage with the world to

change it. This work positions problem-posing education as learning that emerges through a constant unveiling or process of problematizing reality (Freire, 2005). The work does not differ when reviewed in health and medical education.

Halman, et al. (2017) conducted a review of the literature to explore how critical consciousness is defined and discussed in health professional education and how it could be applied in teaching and learning for fostering compassionate and socially conscious professionals. Based on the work of Freire, Halman et al. (2017) highlighted five themes or core attributes of critical consciousness. The first theme, appreciating the context in education and practice highlighted where learning and practice occur such as the impact of the lived experience, the learner's lens for new knowledge, and the value of immersive experiences. The second theme illuminating power structures was an exploration of power relations that explicitly discuss the need to challenge accepted norms and power structures. The third theme moving beyond the procedural was identified as a way to critique the status quo and push to overcome limited and procedural curriculum (i.e. banking). The fourth theme, enacting reflection was viewed in two ways, to bring about various forms of action and create awareness by linking knowledge to personal, social, and political interests for promoting action. The last theme, promoting equity and social justice was viewed as core for connecting health education to wider SES and political systems. Each of these themes represents how researchers used critical consciousness to challenge positions of power and privilege for improving producing medical professionals that act as change agents. These themes are used to highlight how dialogue may be the most essential tool for cultivating critical consciousness. They are also ways to assess how these themes are represented in this research.

Dialogue. According to Freire (2005), dialogue is the encounter or "a moment where people meet to reflect on the reality as they make and remake it" (p. 137). For Freire (2008), dialogue represents a key strategy for the development of critical consciousness because it encourages students to "discuss courageously the problem of their context" (Freire, 2008, p.33). People are also able to "perceive themselves in a dialectical relationship with their social reality" rather than being passive recipients of others' perspectives (Freire, 2008, p.34). Students who engage in dialogue play an active role in analyzing and generating solutions for the problem.

There are multiple ways dialogue can be accomplished that include personal reflective dialogue or group dialogue. According to research by Gay and Kirkland (2003), both forms of dialogue are necessary but reflective dialogue must be followed up by having dialogues of similar content with other people. Dialogue ensures guidance and support in critiquing thoughts, beliefs, and behaviors. These researchers also highlight two barriers that interfere with student dialogue for developing critical consciousness. First, students attempt to shift the focus from target topics such as race to focus on gender or class. Second, students adopt silence or plead ignorance stating a lack of exposure or close contact with racial and ethnic groups. Despite the possible barriers, dialogic pedagogy is capable of reawakening curiosity and knowledge by directing the focus towards the world and social relations in the world (Freire, 2005; Lewis, 2012)

Strategies for promoting dialogue for overcoming resistance to critical consciousness focused on creating different forms of discourse. One of the strategies for instructors was to recognize dialogue as a space or opportunity for modeling. For example, teachers in this work are positioned as problem-posers who ask thought-provoking questions, and through modeling, they can encourage students to ask their own questions or talk about useful principles (Gay & Kirkland, 2003). Critical consciousness is developed by teachers and students that are curious or

searching for ideas and experiences that give meaning to their lives and power to perceive the ways they exist in the world (Freire, 2008).

Another strategy for promoting dialogue is through debriefing and co-learning. Debriefings typically begin individually as reflections or can be openly shared through dialogue (Gay & Kirkland, 2003). Participation in the debriefing process begins with students being asked a series of critical reflective questions then they are directed to do their own unprompted analysis (Gay & Kirkland, 2003). Debriefings are opportunities for students to name, communicate, and express personal feelings, share their thoughts, and question insight provoked by discussion. They are also opportunities to learn, build camaraderie, and grow in confidence for confronting issues of inequity.

Critical consciousness in teaching and learning is more than knowledge attainment, but designed to get students to think deeply about themselves and the spaces they occupy in the world. This problem-posing process allows participants to name and discuss personal experiences to create social connectedness and mutual responsibility (Freire, 2008). Though under-examined in undergraduate education, critical consciousness pedagogy is valuable for promoting a more humanistic and emancipatory curriculum (Benabentos et al., 2014; Halman, 2017). However, when used in an applied way, critical consciousness is a process for interrogation, inquiry, and action (Jemal, 2018). Unfortunately, research for linking teaching and learning to disproportionate health outcomes has been underutilized in preparing health and medical professionals or pre-health professionals. For many students, conscious and unconscious beliefs and attitudes, (regardless of their racial or ethnic background) tend to reflect dominant ideologies (Halman, et al., 2017; Jemal, 2018). Therefore, illuminating health disparities using the critical consciousness frameworks encourage and guide individuals to question, critique, and evaluate a world view with health disparities included. Introducing the critical consciousness

framework and pedagogical strategies earlier in academia will contribute to developing professionals whose focus is on emancipating groups that are greatly impacted by health disparities (Halman, et at., 2017). Medical and health professionals are also better equipped to challenge and critique inequitable dominant ideologies, institutions, and systems to effectively tackle the work of health disparities (Njoku, 2018; Vasquez et al., 2017).

Theoretical Framework

My data collection and analysis are guided by the theoretical framework of critical consciousness. Critical Consciousness (CC) is identified as a philosophical, theoretical, and practice-based framework about a person's understanding of and action against inequity (Freire, 2008). Critical Consciousness is a theory designed by Paulo Freire, a Brazilian researcher who desired to shift education away from knowledge reproduction or dominant ways of thinking that perpetuate inequities and maintain the status quo (Freire, 2008). Critical Consciousness was designed to foster transformative knowledge that is liberating and allows learners to connect with their own personal, cognitive, and emotional experiences through reflection and dialogue with others (Diemer et al., 2017; Halman et al., 2017; Jemal, 2017). Critical Consciousness as a framework is used for more than liberating the oppressed, it is also used to awaken the oppressor from a system of learning that unconsciously positioned them to reproduce inequitable outcomes.

Critical Consciousness was designed to implement learning as a way to assist and guide communities impacted by larger systems of oppression (i.e. health inequities) to question and push back against these systems. The use of this framework has since expanded and is used to guide health and medical professionals, providers, and students. Freire (2005) argued that both the oppressed and the privileged groups are impacted and dehumanized by oppression. Therefore, if eliminating health disparities is to become a reality both groups must work together

as it will take a collaborative effort on the part of each individual, the communities, and all professional stakeholders. A collaborative effort is crucial for transformative actions because “no one liberates himself by his own efforts alone, neither is he liberated by others” (Jemal, 2018; Freire, 2008). Eliminating health disparities is not the work of BIPOC communities alone but a collaborative effort between them and all health and medical professionals to work towards transformative action. According to Diemer et al. (2017), Critical Consciousness provides an “antidote” to the deleterious effects of structural oppression via critical analysis of societal inequalities and participation in activities that unlocks the individual and collective human agency (p. 462). Despite this, Freire (2005) did not create a conceptual model to serve as a step by step guide for CC.

Conceptualization of Critical Consciousness

Critical consciousness research has been conceptualized as issues of social inequity, social-political development, and skills that can be taught through identity development (Diemer 2006; Thomas et al., 2014; Watts, 1999). Critical Consciousness has been conceptualized as a process or developmental stages that are ongoing and continuous. The way researchers have conceptualized critical consciousness has varied among and with the work of quantitative and qualitative researchers who designed them using the constructs of Freire. For example, Thomas et al. (2017) a critical consciousness development scale known as the Critical Conscious Inventory. The scale was useful in measuring a change in critical consciousness using pre- and post-tests. Thomas et al. (2017) along with other quantitative researchers designed developmental critical conscious scales to operationalize associated constructs of critical consciousness such as awareness, but not specifically assess it (Shin et al., 2016). According to Diemer et al. (2017), many of the quantitative studies are new and in the early stages of

development and validation. In this research, the focus of the assessment was on qualitative measures of critical consciousness.

Qualitative measures are more frequently used when measuring for consciousness. Critical consciousness has been used by many scholars for analyzing how individuals perceive social, political, and economic contradictions to take action against oppressive elements of reality (Freire, 2005; Watts et al., 2011). The theory is also criticized for its conceptual inconsistencies and the framework for being incomplete which results in researchers identifying its concepts in various ways. For example, when assessing critical consciousness in the health of marginalized youth, the constructs used were critical reflection, political efficacy, and critical action. However, other researchers have used other constructs.

Jemal (2017) noted that inconsistencies in the conceptual framework resulted in researchers using constructs that ranged between various approaches. In a literature review for critical consciousness, the author noted that centering the use of a unidimensional approach was viewed as inadequate because the focus on critical awareness and action was limited or not considered. According to Jemal (2017) using only one approach requires individuals to already possess an awareness of their own assumptions or it assumes that action is simply an intellectual process that connects awareness directly to action. For those that used two components for consciousness, the work was found to be inconsistent because the same two components were not always represented across researchers (Jemal, 2017). In critical consciousness work, to overlook any one component does not serve Freire's purpose for increasing consciousness. For the researchers that use three components, they were typically represented by awareness, reflection, and action in one way or another (Figure 1). The three constructs are conceptualized as a continuous and ongoing process that can shift through different stages of consciousness (Jemal, 2017).

For this research, I used the three constructs for understanding how students were conceptualizing their learning of health disparities through critical consciousness. These constructs included awareness, reflection, and action (Figure 1).

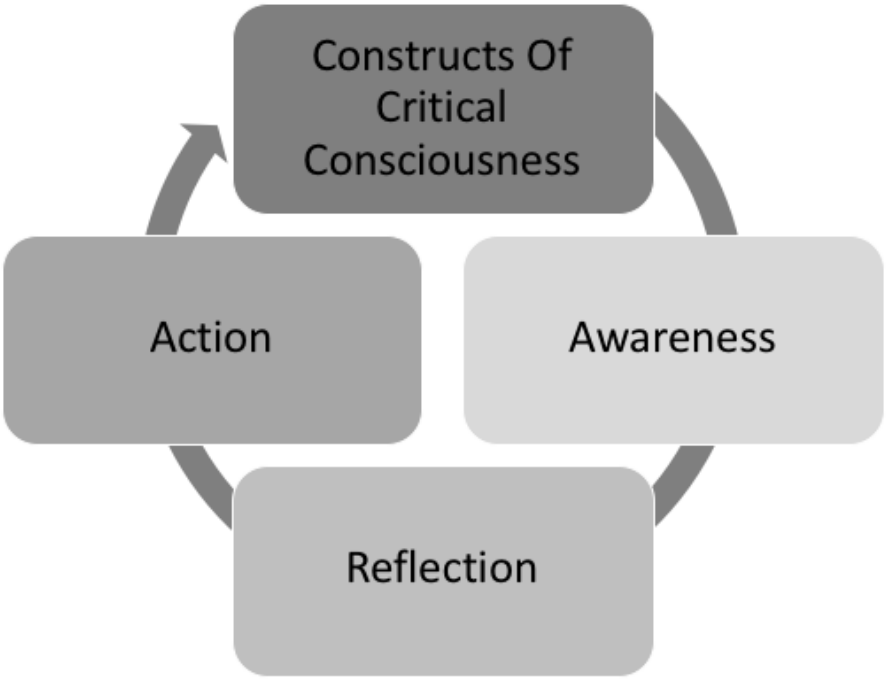


Figure 1 Freire's Constructs of Critical Consciousness

Awareness was defined as causal understanding or reasoning that addresses knowledge of one's political, social, and cultural conditions and the role of history (Jemal 2016; Watt et al. 2011). Reflection was defined as an analysis of social inequalities on race, gender, and SES (Jemal, 2018; Watts et al. 2011). According to Freire (2008) "the more accurately men grasp true causality, the more critical their understanding of reality will be" (p. 44). Action was viewed as participating in individual or collective action to produce social change to transform it (Freire, 2008; Jemal, 2018). According to Jemal (2018) when health disparities and social determinants

of health are informed by critical consciousness it becomes a model for achieving health equity. Whereby, individuals both those that are impacted by disparities (i.e. the oppressed) and those that perpetuate disparities (i.e. the oppressor) develop critical consciousness and work collaboratively to eliminate them (Freire, 2005; Jemal, 2017).

Freire's (2005) work highlights three stages of consciousness that are intended to guide learners towards critical consciousness. The stages of consciousness (Figure 2) are present in each construct of consciousness and represented by magical consciousness or lack of critical thought and insight of social forces (i.e. denial), naïve consciousness or recognize powerful forces and submit to them (i.e. blame), and the final destination critical consciousness is represented by gradual consciousness of perceptions of reality (Jemal, 2018). The intent of these stages is to reach the critical stage within each construct in order to perceive oppressive realities and change them. These stages are a ways to engage reality.

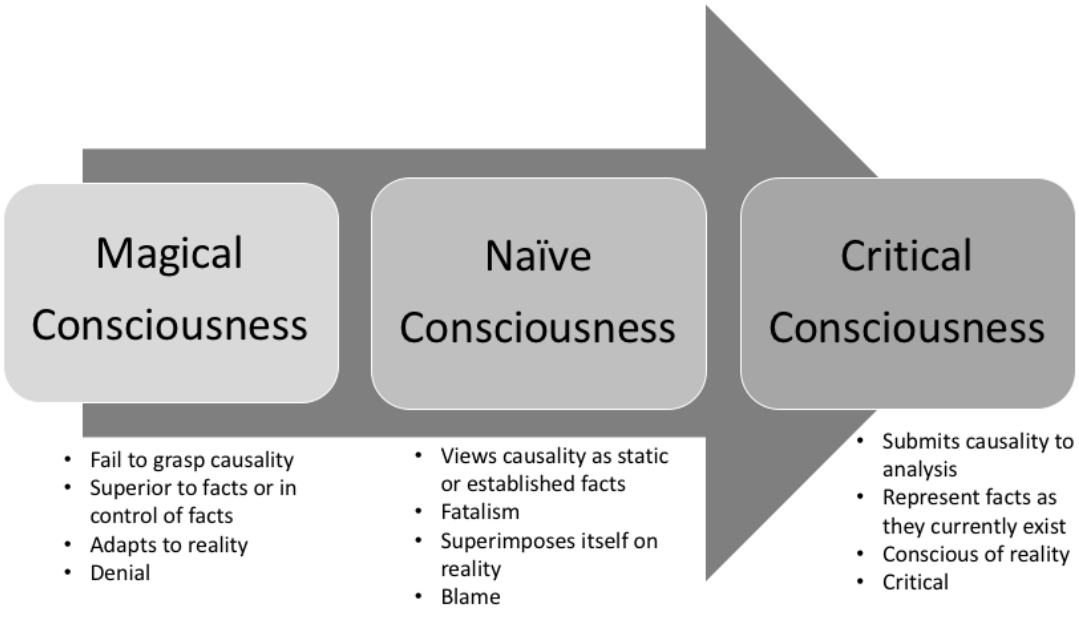


Figure 2 Freire's Stages of Critical Consciousness

According the Freire (2008) engaging the world gives us the right to participate in the transforming of the world in a ways that is not abstract or magical. The intent is to develop critical consciousness through the stages. Development through stages is essentially the same when used within the constructs where the learning process shifts from awareness based on magical consciousness to critical awareness which is based on being critically conscious. These constructs and stages are part of a dynamic process based on awareness of inequality, reflection on individual, collective, and institutional practices of inequality, that are designed to guide individuals towards actions that transform inequality. In this form of research, some interactions and experiences guide how individuals view their social context while confronting the underlying cause of health disparities to change it (Jemal, 2018; Halman, et al., 2017). These stages also assist in assessing overall group development. For this study, the critical conscious framework was appropriate for assessing how the curriculum guided pre-health professionals in the development of critical consciousness.

CHAPTER 3. RESEARCH DESIGN AND METHODS

In this chapter, I present my research design and methods for helping answer the questions of how students navigate topics on health disparities in their human disease course. I will address the epistemological assumptions guiding my work, provide an overview of the methods, participants, research context, data collection, data analysis, my positionality, and measures taken to ensure trustworthiness.

Epistemology Statement

This study is informed by critical inquiry. Critical researchers operate from the understanding that a) all thought is fundamentally mediated by power relations that are socially and historically constructed; b) facts are not isolated from the dominant values or removed from the ideological inscription; c) power or oppression relationships are stable, fixed, or mediated by social interactions; d) language is central to conscious and unconscious awareness; e) certain groups in society are privileged over others and although the forms of privilege may vary in contemporary societies, it is reproduced when individuals accept their social status as natural and necessary; f) inequitable mainstream practices are generally reproduced through systems of class, race, and gender oppression (Kincheloe, McLaren & Steinberg, 2011). Oppression has many faces but typically the focus is placed on one area of oppression (e.g., class or race) at a time and ignores the impact of the intersectional experience (Crenshaw, 1991). For example, the impact of oppression related to health disparities tend to impact women of all racial and ethnic groups at higher rates than men, but within that group, women that are BIPOC are impacted at higher rates and ignored often because their experiences occur at the intersection of multiple marginalized identities (i.e. gender and race) (Crenshaw, 1991).

Karl Marx shaped principles for critical inquiry and his modern research hold on the idea of individuals as thinkers and activists (Kincheloe, 2008). His thoughts about research extended beyond his ideas for interpreting the world, including his thoughts on changing the world through collective action. The suggested action required to produce change were not viewed as abstract ideas about the world but were based on concrete social realities that challenged the notions of oppression and privilege (Freire, 2005). These two positions were connected to social class and socioeconomic status in ways that touched all aspects of human life and human affairs such as where people live, work and play. Marx's ideas were advanced by critical scholars like Paulo Freire who moved the work beyond social class to include communities and groups that have historically been recipients of systematic oppression based on race and gender (Cannella & Lincoln, 2012).

Freire's work on critical consciousness has been used as a framework and methodology to guide individuals through a continuous process of overcoming false consciousness and increasing awareness and critical reflection about structures of injustice for inspiring transformative action (Jemal, 2018). Critical consciousness was used to guide students on how to read the world. Freire (2005) believed that humans did not exist apart from their world, therefore, the start of a movement for a more just reality begins with the relationship one has with the world.

Positionality Statement

In my role as an educator, I hold on to the idea that in order for all health and pre-health professionals to become informed about health disparities it is equally imperative for them to become conscious of how they are complicit to or resistant to inequitable systems and structures that contribute to disparities. Teaching and learning at both the graduate and undergraduate

levels about health disparities are primary methods for eliminating disparities. However, the structures used to prepare health and medical professionals are far from fair and impartial. Most institutions of learning serve to reproduce dominant social ideologies that find deep roots in every aspect including the curriculum. For this reason, I created and designed curriculum for undergraduate students to engage in health disparities learning modules, described later in the section.

Eliminating health disparities are important to me because they affect the very fiber of an individual's livelihood. The interesting aspect of health disparities is that BIPOC and poor communities are oftentimes unaware of all the ways (i.e. health policy) they show up in their day to day. Health inequities are unjust and for many communities they are impacting their well-being in both obvious and not so obvious ways. The impact of disproportionate death and disease outcomes on communities by institutions that reproduce health inequities can be summarized most effectively by Collins' (2008) character Effie Trinket in the book Hunger Games "May the odds forever be in your favor" (p. 46). Benabentos et.al (2014) estimates that informing health professionals early about disparities can impact the work of health disparities in research, health policy, health care, and community programs. According to Williams (2018) the majority of health professionals that have contributed to the increases in health disparities, participated unconsciously. Unconscious participants are those that are most complicit in contributing to health disparities via the ways dominant ideologies are embedded within learning and institutional practices. Introducing health disparities through teaching and learning in ways that guide students in becoming aware of historic inequities are beneficial in minimizing health disparities.

Engaging in this area of research is personal for me, I completed my bachelor's degree in the Kinesiology department and later returned as a lecturer for a human disease course and other

undergraduate courses. Courses that include curriculum or topics that inform and raise global and national health disparity awareness are rare and when taught, they are from a deficit perspective. For this research, students were provided the space to critically and consciously reflect on how individuals, groups, and systems may be complicit in contributing to health disparities and action for transforming them.

Researchers have shown that health disparities disproportionally affect BIPOC that have been historically marginalized against (Braveman, 2006; Vazquez et al., 2017), and as a Black woman navigating the persistent, historic, and embedded inequities that exist in health is challenging. However, when dominant social ideologies about race and disease collide with health professionals, researchers, and instructors that perceive health outcomes from a deficit perspective, the outcomes have proven to be catastrophic. Therefore in my role as a researcher, it is important to highlight ethical forms of research as a major aspect of the work along with learning to resist dominant perspectives. My purpose in doing this research is fueled by the personal and the professional.

According to Freire (2005), critical qualitative inquiry minimizes unethical practices that are harmful and dehumanize the people and communities impacted. When participating in ethnographic research, a researcher's cultural and experiential background contains biases, values, and ideologies that can affect the interpretation of a study (Fusch et al., 2017). As a qualitative researcher, I have acknowledged my position and background entering into this study. I also acknowledge that for this work I am an outsider within. An outsider within occupies a special place, they become different people, and their differences sensitize them to patterns that may be more difficult for established insiders (Collins, 2000). As an outsider, I designed this research to make it possible for students to get a better view of the world by guiding them to challenge and critique their ways of knowing when necessary. My insider status is legitimized by

the fact that I am a health professional that previously taught the course and familiar with the culture of the class. As an outsider within I seek to guide students that are accustomed to viewing health disparities through ideological and practical perspectives to observing them critically and consciously in order to transform them.

Qualitative Ethnographic Case Study As Methodology

Qualitative research makes the world more visible by situating activities that locate the observer in the world, it observes the "how" within the research process and seeks meaning that is defined not examined, or measured (Denzin & Lincoln, 2011). Qualitative research involves an interpretive and naturalistic approach to the world that is based on observing and interpreting the meaning of one's social reality (Brown & Strega, 2015; Denzin & Lincoln, 2011). The qualitative researcher provides the interpretation and analysis of that reality. A qualitative researcher's interests are in understanding how people interpret or give meaning to their experiences or construct their world (Merriam & Tisdell, 2016). They are interested in ways of knowing that comprise actions, response, attitudes, and embrace the opportunity for ways to express the participant's voice (Denzin & Lincoln, 2011). The data collection processes used by qualitative researchers are vast. The interconnected and interpretative practices include information from fieldnotes (observation), interviews, dialogue, documents, artifacts, audiovisual, and memos to bring understanding to the topic (Creswell & Poth, 2018; Denzin & Lincoln, 2011). I collected and used multiple data sources to gain clarity, understand how students engage with, process, and reflect on health disparities topics.

Qualitative research is not specific to any set of methods or practices but can draw from multiple methodological approaches (Denzin & Lincoln, 2011). For my research design, I used a qualitative ethnographic case study. Case studies and ethnographies are two different approaches

that complement each other and lend themselves to different qualities whereby I used to interpret and analyze data. The ethnographic case study positions me as a researcher to draw from an approach that provided a full and rich description of the research, classroom environment, the culture of the classroom, and those enrolled in the class. In the coming sections, I will briefly discuss both approaches and how they are used in research.

Case Study

Case study research is designed to generate knowledge of single or multiple cases. Creswell (2013) defined a case study as a qualitative approach where "a real-life, contemporary bounded system (a case) is explored over time, through detailed, in-depth data collection" (p. 97). A case study is viewed as either a research process or a unit of study that characterizes the study (Merriam & Tisdell, 2016; Yin, 2018). Case studies are preferred when examining events that are contemporary in nature and behaviors are not manipulated (Yin, 2017). There are three types of case studies intrinsic, instrumental, and collective. The intrinsic case study will be used for this study because it seeks specific interest in a case and for advancing the knowledge base of that case (Yin, 2018). My interest is in understanding how students in a human disease course explore and engage with the health disparities curriculum.

Case studies do not occur in isolation, they require researchers to get as close to the subject of interest as they possibly can. Observations for research are used to provide meaning, thick description, and tactical knowledge, or "subjective factors via thoughts, feelings, and desires" are communicated (Merriam & Tisdell, 2016, Yin, 2018, p. 51). For this study, I used my physical presence (i.e. lecture), bi-weekly lectures, attendance at student presentations, and communication about module graded or technology concerns as attempts to establish closeness to students. Case studies have proven useful for studying education, evaluating programs, and

informing policy (Merriam & Tisdell, 2016). Though some case studies will not have a significant impact on broader health policies, they do have implications for health professionals (Hyett, Kenny, & Dickson-Swift, 2014).

Case studies are also useful in education research that assess classroom culture of student attitudes towards learning and implementation of various curriculums. In these case studies, the depth of the case is informed by the information shared by the participant. The most straightforward example of case studies is those in which boundaries have a common-sense obviousness, such as an individual teacher, a single school, or perhaps an inventory program (Merriam & Tisdell, 2016). For this research, I focused on a single case that integrates health disparities into an undergraduate course. The data for this study was bound within the courses' self-paced online learning modules, online discussion board, and course observations.

Ethnography

Ethnographies originated from the field of anthropology and are used to describe, interpret, and reveal cultural groups and their shared patterns of values, behaviors, language, and beliefs (Creswell & Poth, 2018; Merriam & Tisdell, 2016; Sohn, 2015). They have since been adopted and used by many fields and disciplines. For example, Sohn (2015) discussed the use of the ethnographic approach in education and classrooms. The focus of ethnographic research centers on culture and human society. The work of an ethnographer is to make meaning of a cultural group through beliefs, perceptions, and their behaviors. Ethnographies are more than descriptions, they are designed to study the meaning of or "to convey the meaning participants make of their lives with some interpretation" (Merriam & Tisdell, 2016, pp. 28). They must also reflect a true representation of the culture through spending extended amounts of time getting to know participants. According to Nader (2011) researchers are specifically responsible for

learning about the specific group or culture during the data collection process in order to interpret the culture of the participant and not the researcher. In this study, I collected multiple forms of data and coded the information to ensure the voices of the students took priority.

Ethnographies reveal human complexity that may not otherwise be available through other methodologies. According to Sohn (2015), ethnography is a process of discovery that reveals an in-depth understanding. For example, it can be used as a platform for asking deeper questions like How? Why? Or What If? (Sohn, 2015). They are used to identify and interpret power and oppression and to understand patterns, social behaviors, and culture (Creswell & Poth, 2018). In ethnographic studies, culture or cultural experiences can be viewed by how people make meaning from their experiences and are not bound by a single place or uniform behavior. The setting becomes any space where meaning-making through social interactions occurs including communities, homes, and classrooms (Anderson-Levitt, 2006). Understanding student responses from this perspective, allowed me to draw from self-reflective experiences outside of the classroom, curriculum, or learning spaces that influenced how they came to understand the world. Ethnographies are unique in that they are informed by meaning-making within a particular space and can be easily blended with other methodologies.

Ethnographic Case Study

An ethnographic case study design allows researchers to study theory in a real-world application and use data collection methods from both designs but bounds them in a specific space or time (Fusch, Fusch, & Ness, 2017). Blending the designs allowed me to obtain the best outcomes for my research while highlighting my participants in a way that best represented their voices. Additionally, the qualitative ethnographic case study allowed me to utilize and provide opportunities to highlight the culture of the classroom and students as they engaged in topics of

health disparities in their human disease course. I used ethnography to capture the experiences of a student's culture that took place within and outside the context and setting of the course (Anderson-Levitt, 2006). I used the course context to capture student engagement with the various forms of learning and provided a space to draw from experiences that occurred outside of the space that influenced how they were making meaning of health disparity topics.

The case study provided the framework or structure for bounding the study within a single case. My study is ethnographic because it looked at learning as both critical and cultural (Freire, 2008) process that seeks to highlight and describe the beliefs, values, and attitudes that structure the behaviors of the group. Additionally, my research is a case study because it is an in-depth description and analysis of a single functioning unit (i.e., one human disease course) that encircles the study (Merriam & Tisdell, 2016). This qualitative ethnographic case study took place within the space of an undergraduate human disease course. The course was designed using the tools and resources of a hybrid course, where students participate in face to face large classroom lectures, online learning modules, and participation in an online discussion board. Using an ethnographic case study provided me an opportunity to view the co-teachers and students became as part of the cultural sharing group that provided the data for the group experience. I utilized ethnographic case study as my research design to guide the data collection and analysis for answering my research questions.

Context of Research

The study took place at a large midwestern research one educational institution. The institution houses seven colleges and enrolls a total of 34,000 students with over 29,600 enrolling as undergraduate students. Students can enroll in more than 100 majors where 14 of those areas can be used as majors or minors where requirements for pre-professional courses can be met.

Students desiring to enter into pre-medicine or pre-health fields are required to declare a major in one of the colleges because these areas are not specific majors but a set of requirements.

The colleges with the highest enrollment of pre-medical students are the College of Liberal Arts and Sciences and the College of Human Sciences. For this research, I selected pre-medicine and pre-health professional majors enrolled in the College of Human Sciences and the Department of Kinesiology. The Department of Kinesiology is home to pre-health professionals preparing for various fields including; medicine, occupational therapy, physical therapy, dentistry, chiropractic care, nutrition, exercise and physical activity researchers, and physical educators. The Department of Kinesiology also offers a Human Disease course that is required for all pre-health professionals. The course includes materials and topics that address the epidemiology of health and disease outcomes, both of which are great for integrating teaching and learning topics on health disparities. This course reaches broadly across pre-health and pre-medicine majors which is one of the primary reasons it was selected for this study.

This study is centered within a large lecture Human Disease course that enrolled 140 undergraduate students. The course, according to the course syllabus, was designed to provide teaching and learning opportunities about the disease process and ill health for the 20th & 21st centuries with an emphasis on epidemiology, prevention, treatment, and understanding of the etiology of communicable and non-communicable disease. The course was designed to address four instructional objectives such as communication, life learning, knowledge discovery, and social justice, as well as additional learning outcomes specific to the department and college. The course syllabus and objectives for learning outcomes were revised to include information about health disparity, online modules, and reflections. The syllabus is located in Appendix B.

The objectives for the online learning materials were integrated into the learning outcomes, assignments, and student reflection prompts. The topics for this research focused on

embedding health disparity topics into the instructional methods for etiology, pathophysiology, epidemiology, and prevention of diseases including understanding the individuals, communities, and environments most impacted, as well as the historical significance, and current social practices. The learning materials included for health disparities aligned with each of the instructional objectives of the course. They also highlighted health practices and social outcomes that contribute(s) to disparities in incidence, prevalence, and burden of disease.

Participants

The participants for this study included students enrolled in all sections of the Health Studies 350 Human Disease course for the Fall of 2019. The HS 350 course was selected for this research because instructors showed interest in integrating teaching and learning about health disparities into their course. The study was also an opportunity to embed learning modules for students to increase their awareness about disproportionate outcomes in disease prevalence and mortality. The human disease course curriculum was divided into two sections: chronic disease and infectious disease. The course was co-taught by Kinesiology faculty members, a full professor- Dr. Thomas, who has been teaching the course for 12+ semesters, and an assistant professor- Dr. Goodwin who has been teaching for 3 semesters. The instructors designed the curriculum for this course with the understanding that students completed all prerequisites before enrolling.

All students that enrolled in the Health Studies (HS) 350 - Human Disease course for the Fall 2019 academic semester had the opportunity to participate in this study. A large majority of the students enrolled in the course were listed at the junior and senior status although there were some sophomores enrolled. There were approximately140 students enrolled in the course at the start of the semester and all were invited to participate and none opted out of the study. Over the

course of the semester, 16 students dropped or withdrew from the course resulting in 124 enrolled students. The study participants were mostly in Kinesiology majors because this course was required for those enrolled as pre-health and pre-medical professionals that aspired in areas of medicine, dentistry, public health, physical therapy, corporate wellness, etc. Pseudonyms were provided for 140 participants, one graduate student, and two instructors for this research (**Error! Reference source not found.**).

Table 1 Participant and Instructor Pseudonyms

Pseudonyms	Identifiers
Dr. Thomas	Co-instructor, course designer
Dr. Goodwin	Co-instructor
Deanna	Dr. Goodwin's graduate student
AA-FJ	Participant Initials

Note. The first and last initials list for the 140 students are pseudonyms

Participants were informed of the purpose of the research during the first week of classes through an email that provided confirmation of IRB approval and included an introduction of the study. The email included: (1) a statement that the completed online learning modules will be used for research and students have the opportunity to opt-out of having their data used for research but modules must be completed as they are part of their course grade; (2) a statement that participation in pre-survey and post-survey is voluntary and participants can skip questions they don't feel comfortable answering; (3) a statement highlighting the measures taken to ensure confidentiality of data; (4) a statement that classroom observations will occur during weekly lectures; and (5) research contact information. A print out of the same information was made available the first week of classes that included the option for students to add their signature for opting out of having their data used for research. For this study, students did not choose to opt

and were automatically enrolled them as participants. Participants were encouraged to successfully complete all exams, assignments including the online learning modules, and poster presentations. The primary source of data collection and analysis for the study was taken from completed student assignments. IRB approval was obtained for this research and is located in Appendix B.

Data Collection

Data collection for the course occurred across the 16-week semester. The primary method of data collection was acquired from four online learning modules. Reflections were the most effective means for collecting data because they provided students with space and opportunity to think about their position and experiences concerning the teaching and learning that occurred in the course. Reflection prompts were included within the online learning modules (Table 2). Other aspects of the data collection process included pre-post surveys, online discussion boards, and classroom observations. The university's large online management system (Canvas) was used to assign and collect all student demographic data.

Online Learning Modules. The online learning modules were designed, infused, and aligned to accommodate topics specifically taught in the human disease course. I designed the online curriculum with an emphasis on epidemiology, prevention, and treatment of disease that included impact on BIPOC communities. As well illuminating the relationship between historical and current social practices that contribute to health disparities. There were four modules embedded into the curriculum (Table 2). Modules one and two were completed during the first half of the course (weeks 2 & 4) and during the time Dr. Goodwin was the lead course instructor. also designed to raise student consciousness by guiding them through constructs that

Table 2 Health Disparity Curriculum Outline

Learning Modules	Topic Titles	Reflection Prompts
Module 1 (Week 2)	Introduction to Health Disparities	What did you take away from this this lesson? or Want to learn more about? What did you struggle to understand? Where do you go from here?
Module 2 (Week 4)	Root Causes of Health Disparities	Take 5 minutes to reflect on your implicit bias test. Take into account your social identities (race, gender, SES, etc.) as you discuss your findings.
Module 3 (Week 10)	Health Disparities: A Global Perspective	Take some time to reflect on today's topic (readings, video, activities). Discuss ideas or a theme that was particularly powerful to you, something that you disagree with, a question you have, a reaction you had during the module, or something you need to think more about.
Module 4 (Week 12)	Health Disparities: Medicine, Science, & Tuskegee	What were some of your top take away? What did you struggle to understand? How do you plan to move forward to advance your personal learning?

Modules three and four were completed in the second half of the semester (Weeks 10 & 12) when Dr. Thomas was the lead instructor. The modules were designed using resources, tools, and strategies for informing students about topics on the historic and current context of health disparities. For teaching and learning the modules included readings, videos, polls, activities, collaborative activities, Twitter pages, and self-reflection assignments. The modules were provided the space for them to think about their learning, reflect on their learning, and think about ways to take action against inequity. I graded the modules and any questions or issues concerning student grades were directed to me.

Self-reflections. The primary source of data collection was student self-reflections. I assigned self-reflective activities within each of the four online learning modules. For some of the reflection exercises, I asked students to respond to prompts specifically about health disparities, those impacted, and their own social identities (race, gender, SES, etc.). Other options I provided students were to reflect on course content with prompts (**Table 2**) that would assist in guiding way to share their thoughts about the health disparity topics. I encouraged student participants to engage with content and reflect on experiences and ideas that were sparked by learning modules and online dialogue with classmates. I designed the reflection pages as space for students to share personal, safe, private thoughts about the topics being learned.

Surveys. Students participated in an anonymous and voluntary pre-survey and post-survey. I used the pre-survey to assess student social demographic information and questions that addressed background experiences, knowledge, and awareness of health disparities. I administered the pre-survey online through the Qualtrics survey platform during weeks 2-3 of the semester. A total of 75 students completed the pre-survey. I administered the post-survey during weeks 14-16 prior to the conclusion of the Fall 2019 semester. The survey included demographic information, scale questions about online learning modules, and to gauge participant ideas and engagement with health disparities moving forward. A total of 65 participants completed the post-survey and 2 noted that they were not part of the group that completed the pre-survey. All students that consented to participate in the study (the entire class) were asked to complete the surveys. However, as noted not all choose to participate in this voluntary and anonymous opportunity. A copy of both the pre-survey and post-survey is located in Appendix D.

Packback. The Packback online discussion platform is designed for students to ask questions about the course content as a way to develop curiosity and critical thinking. The platform was established to create a foundation for asking great questions to improve student curiosity, provide an inspiring and constructive feedback loop to increase communication skills among peers, and to fuel purpose and curiosity for the subject matter by promoting critical thinking. This was the instructor's first time implementing this platform into their course. The platform provided a way to challenge and improve the depth of writing and improve critical thinking skills (McMurtrie, 2018; West, 2019).

The Packback digital platform was used to promote student discussion and engagement in the subject matter by having them ask or post one open-ended question. Then, students were asked to respond to two or more questions by adding either a counter or supporting point with an explanation to support their position. Students were encouraged to attach resources that further support their points through the use of online resources that include articles, videos, images.

Students participated in Packback questions throughout the course of the semester. They posed questions that centered the topics on human disease, health disparities, or other relevant topics that were addressed for each week. Packback questions were reviewed weekly for the research. The questions and responses that focused on health disparities, inequalities, inequities, and disproportionate disease outcomes were marked to be used as research data.

Observation procedures. I collected observation data for both course preparation with the instructors and during the scheduled class for the entire semester. According to Creswell (2013), observations are key tools that are based on research questions and provide "physical or virtual locations, where meetings occur, the agenda, conversations, and researchers behaviors" including perceptions and feelings (p.166). The locations for course preparation and planning

included two face to face meetings with one of the instructors and all other communication took place virtually via zoom or email with myself and both course instructors. I took the observational role of participant-observer. As a participant-observer, I helped revise the course syllabus and designed the online learning modules. At the start of the study, my role as a participant was more dominant. According to Creswell (2013), some observational roles become more prevalent than others which was the case for this study, especially during the planning cycle. My role as a participant was more salient than my role as an observer (researcher) during the early course preparation and became more of an observer for classroom observations.

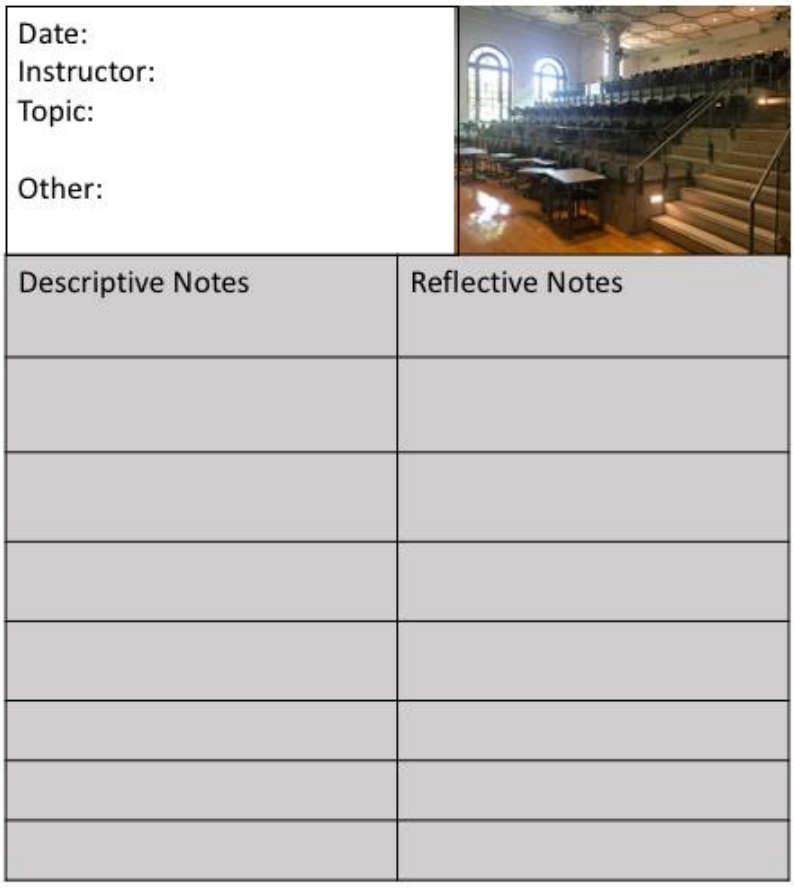


Figure 3 Classroom Observation Form

Classroom observations provided me the opportunity to observe student learning in the classroom over the course of the semester. In this setting, I was able to observe interactions, conversations, and various topics introduced to students that are relevant to my research questions. In the first week of the semester, I was invited to provide a twenty-minute lecture providing the background of health disparities. Following this, I assumed the role of a non-participant or observer as a participant within the classroom setting. The researcher in this role is seen as an outsider but will be watching and taking notes from a distance (Creswell & Poth, 2018). My role changed to a participant on a few occasions during the semester as students invited me to take part in classroom activities or small group discussions. To avoid being invited to participate, I would sit in spaces that attracted the fewest number of students–the rear of the lecture hall.

I used the observation protocol modeled after the version provided by Creswell (2013) in Figure 7.5. The observation form (Figure 3) encompassed an image of the classroom space to document my weekly seating location which changed frequently, a space for descriptive and reflective notes, and additional space for summary notes. One of the initial components of the observational plan was to sit in a different location in the classroom each week to gauge student conversations. However, once the semester began I needed to be cautious to not sit in a student's preferred seat.

Data Analysis

The primary sources of data analysis for this research included four online learning modules (reflections and activities), online discussions, and observations. After the data was transcribed, it was coded by hand to look deeply at the ways in which students engaged with the health disparities learning topics. To better understand how 140 students explored the

curriculum, I worked through multiple cycles of coding as recommended by Saldaña (2015). In the first cycle, initial coding assisted me in breaking down data into separate and discrete parts using descriptive codes (knowledge, questions, privilege) and Invivo coding ("powerful", "advocate") for using their words for closely examining student learning. These codes were also used for comparing data across the entire semester. Initial coding was used as an "open-ended approach to coding and a method for giving attention to participant language, perspectives, and worldviews" (Saldaña, 2015, p.100). Descriptive and Invivo codes were also used to express student perceptions (e.g., emotional tone, feelings, attitude), and health disparities learning (e.g., understanding, questions, more learning) that emerged across the modules. I performed the same coding process for the observations and online discussions to detail and explore specific examples of student experiences or emerging themes. I used the pre/post surveys to extend the ethnographic case study by including descriptions of student demographics and perspectives about the curriculum.

Additionally, priori coding or beforehand determined codes adopted from the critical consciousness framework was used to look deeper at the data in order to get a sense of how students were developing across the modules as a cultural group. The list of predetermined priori codes was represented by the constructs: awareness, reflection, and action. Highlighting these codes assisted me in maintaining focus on my research questions and goals. For example, reflections typically encompassed student ideas that centered on deeper thinking, making connections to previous experiences or grappling with ideas. Taking this approach created harmony with the study's theoretical framework and helped drive the analysis for answering my research questions (Saldaña, 2015). Although I used the previous list of words to provide guidance during the initial coding process, I remained open to explore the data fully through each

cycle. Lastly, I explored the data between and across the modules for assessing the growth and development of student consciousness (Figure 4).

The second cycle of coding analysis involved reading across the initial coding schemes to identify major overarching themes. I first coded for broad themes addressing student experiences engaging with the modules then highlighted the themes that repeatedly appeared in the data (e.g. eye-opening). Coding then involved aggregating data into smaller categories of information and assigning labels to it (Creswell & Poth, 2018). The emergent codes that centered their identities and perceptions about the learning were used to create categories that aligned with the themes for the final stage of my process.

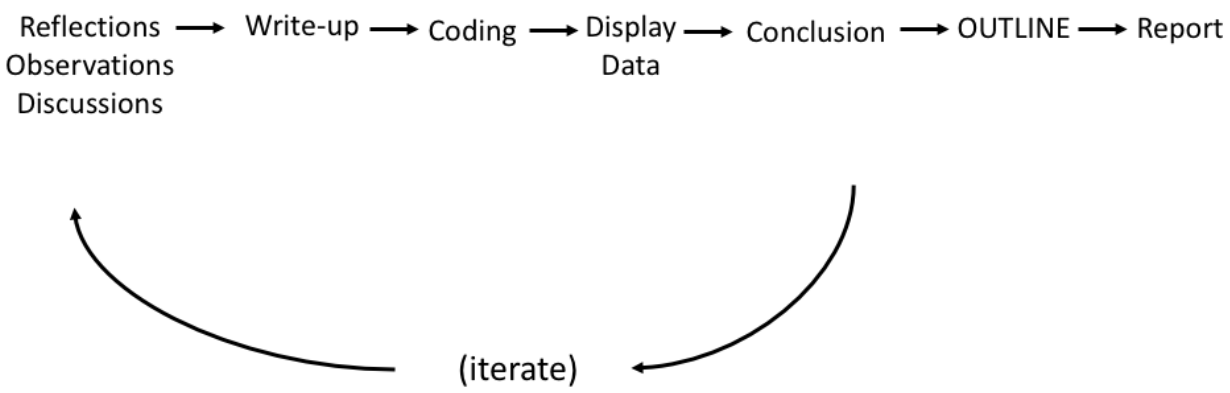


Figure 4 Traditional Analysis Sequence

The coding process was not a linear process, for categorizing the final themes I moved back and forth within and across the data to capture the experiences of the students as a cultural group (Figure 4). The matrix by Miles, et al., (2014) is a visual representation of how this analytical process is not linear but iterative and cyclical. Analyzing and interpreting the data as a reiterative process assisted me in making sense of the data, seeing patterns, and highlighting new ideas.

After cycling through multiple rounds of coding cycles, I created this qualitative ethnographic case study to determine how students were exploring the health disparities topics. I reviewed all data but I did not use all the data for this study unless it helped answer and bring clarity for answering my research questions.

Trustworthiness

For this research, I adopted and implemented various strategies throughout the study as well as during each stage of data collection and analysis to ensure trustworthiness. According to (Guba & Lincoln, 1985) trustworthiness measures qualitative research for the quality of goodness or whether it is "worth paying attention to" (p.46). I implemented the following measures to ensure trustworthiness: prolonged engagement, persistent observation, audit trail, and peer debriefing. For prolonged engagement, I spent a considerable amount of time (2 months) with the two instructors prior to the start of the Fall semester proposing ideas for the research and the integration into selected topics. I used these meetings to revise the previous syllabus (i.e. course prep, grading), to review the online discussion platform, and review health disparity learning modules. Last, I also used these extended moments to "establish rapport, build trust, and understand the context and culture" (Guba & Lincoln, 1985, p. 87) of the course.

I used persistent observations as an opportunity to document and reflect on the ideas instructors and participants were communicating in relation to the characteristics and elements of the study that they found to be most relevant (Guba & Lincoln, 1985). These observations included capturing the interactions between instructors and students, students and students, and researcher reflections both in and outside of the classroom in a non-obtrusive way. I used an audit trail to document my ongoing actions as a researcher to provide evidence "of a clear rationale for the decisions and choices made throughout the study" (Nowell, et al., 2017, p. 3).

The final method of ensuring trustworthiness is through peer debriefing. I used peer debriefing to engage individuals with no relations to the study in extensive discussions about the analysis, findings, and conclusions of the study (Guba & Lincoln, 1985). I used a bi-monthly graduate student writing group as my peer debriefing site. Using these steps in my research from start to finish ensured levels of trustworthiness.

Trustworthiness was enhanced by approach to establish credibility through triangulation for data collection (Lincoln & Guba, 1985). Triangulation is the use of multiple methods to study the same phenomenon (Patton, 2015). Triangulation was used in this study by using primary data sources such as observations, modules (reflections), and online dialogue to cross check student views and attitudes (**Figure 5** Triangulation of Data Methods). Other points of data collection such as student activities and assignments and pre/post surveys were collected but were used to compliment the stories that were unfolding and directly contributed the primary data sources.

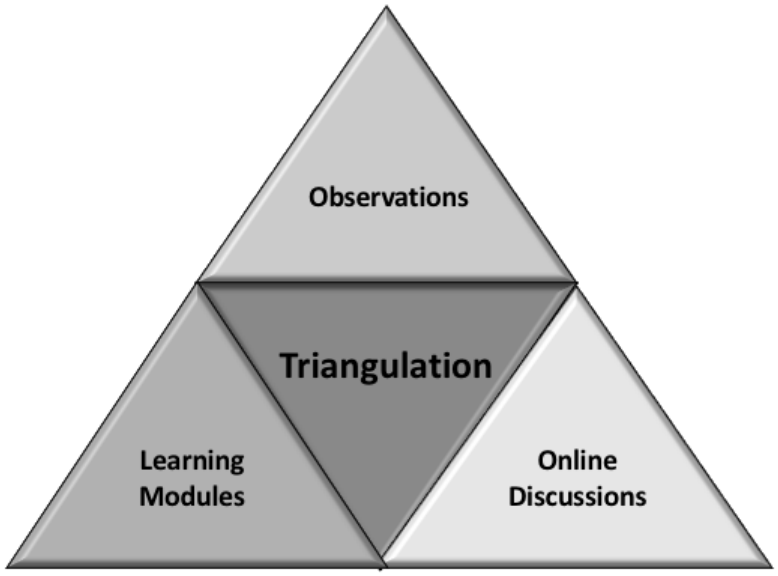


Figure 5 Triangulation of Data Methods

Collectively, these different data methods provided different avenues used to assess how students were exploring the health disparities curriculum. The use of multiple methods or triangulation added credibility to findings. For example, students discussed their views about race and disease in their reflections and through triangulation with observations and online discussions I was able to gain a deeper understanding and more context for how perspectives were shared in private reflections and public discussion. As well as how deficit ideologies were being challenged by peers. The use of multiple methods enhance trustworthiness.

CHAPTER 4. RESULTS

In this section, I present a qualitative ethnographic case study where I explore the ways undergraduate, pre-health professional students engage in teaching and learning about health disparities. This ethnographic case study was designed to 1) Introduce undergraduate pre-health professionals to topics on health disparities; 2) Create opportunities for students to engage in and document their learning through written reflections and activity participation; 3) Analyze and interpret critical consciousness development using constructs that centered awareness, reflection, and action. This research offers deep descriptive detail, quotations, and assertions for examining student interactions with the learning modules using their own words, language, and ideas. From the analysis of this ethnographic case study, three salient themes emerged: 1. Eye Opening Experience, 2. Lived Experiences, and 3. Learning in Motion.

The first theme, Eye Opening Experience, focused on the students' initial understanding of health disparities, which included learning new terms, acknowledging different realities, and initiating discussions on race and disease. The second theme, lived experiences, examined how students reflected on their personal identities and the people and institutions that have influenced them. This theme also represented the analysis of student responses to the implicit bias test. The third and final theme, Learning in Motion, highlighted the impact of collaborative learning opportunities, the shift from questioning to critical questioning, and ideas for how students planned to personally take action (or not) as they moved forward.

The themes and categories that emerged from this research chronicle the overall journey of students as they navigated the learning modules. The layout of this chapter will include a narrative description and brief introduction, the presentation of the themes and sub-themes,

and two examples of student participation (i.e. activity interchanges). All participants and instructors were assigned pseudonyms to limit any opportunity for deductive disclosure.

The Start

> I started my day full of excitement and anticipation. Today, I am meeting the students with whom I will share classroom space for the next 16 weeks. The last few nights I spent meticulously organizing my thoughts and properly placing words and phrases together to introduce my research on health disparities to the students. I practiced each line carefully capitalizing on moments that benefited from vocal rises and falls, comedic tones, and even the pauses that were adopted to provide space and opportunity for students to think and for me to take that necessary deep breath. (Researcher Observational Journal, Aug. 29)

This twenty-minute lecture was not an ordinary moment. It was an opportunity to create and inspire a teachable moment or moments that could only be captured by an insider like myself. By insider, I mean someone who is attached to or knows the inner practices and principles associated with promoting healthy living through physical activity. For this group, I am someone who has walked the halls of academia that these pre-health/medical professionals now occupy. This was also "a personal moment" to weigh and consider the impact of health disparities on individuals that look like me." At that moment, I needed to passionately relay information to students highlighting that this burden is not mine alone to carry, neither is it the work of the communities most impacted, but "it is the work of the collective to eliminate health disparities" (ROJ, Aug. 29).

I entered the lecture hall as students began to pile in. I quickly met with Dr. Thomas and Deanna to discuss the agenda for the day. Deanna is Dr. Goodwin's graduate student and we provided the lectures for the day. I was selected to present my lecture on health disparities first.

"I was excited to take the first shift" (ROJ, Aug. 29). Whether the students were hearing this topic for the first time or advanced in learning, I knew my lecture would provide a historical dive into health disparities. Dr. Thomas kicked off the lecture by introducing me and Deanna to the class. After this, the two of them took their seats and I began to speak. I jumped right in and started by introducing myself, my educational background, my teaching background, and my current role as a graduate student. I highlighted our shared experience as undergraduate Kinesiology majors and our desire to create a healthy and well world through physical activity and exercise. I discussed my teaching experiences with the department of Kinesiology and specifically my experience teaching the human disease course for which they were currently enrolled. My primary goal was to highlight the collaboration between the instructors and myself for embedding health disparities into the course. Given my experience teaching this course, I knew the topic of health disparities would naturally complement the course content. Because the topic was a natural fit, the learning topics would present learning opportunities and dialogues that would flow seamlessly with the course content.

After sharing my background and how the topic of health disparities correlates to the course materials, I decided to ask the students a provoking questions and give them an opportunity to discuss it. So class, "what comes to mind when you hear the term health disparities?" This is where my story begins.

Study Introduction

Students were asked to assemble into groups of 4-5 to discuss "what comes to mind when they hear the term health disparities." The groups were instructed to come up with two words or phrases that they thought adequately described the term and enter them into the Poll Everywhere link provided on the screen. As students entered their words, each word was used to construct a

single word cloud (Figure 4). The word cloud offered a glimpse into the conversations of these 25+ small groups. The word cloud provided a visible baseline of how these small groups interpreted and understood the term health disparities.

The words listed in the cloud included a broad range of ideas that were either closely associated with the term or had little to no association with it. As students entered words into the program, they were immediately displayed on the screen for all to view. The more times a single word was entered, the larger it grew in size. The words that were larger in size just happen to be words that could be used to accurately describe health disparities or the groups (i.e. gender, poor, race, ethnicity) disproportionately impacted by them. For example, words such as health, differences, disadvantage, disorders, medicine, unequal, and inequalities were entered the most.

The words that appeared smaller in size were a result of the entered less frequently by the represented groups. These words could also be used to describe health disparities. Some of these words included unhealthy, lack, disease, unfairness, access, inequity, and various diseases (i.e. obesity, cancer, diabetes). However, the present of these smaller words clearly indicated that some students lacked an understanding of the term health disparities. For example, these words were random and occupied the majority of the outer spaces on the word cloud and included terms such as bride, princess, activity, connotations, and standing. The cloud exercise served as an introductory activity to increase student participation and interest before launching into the full lecture on health disparities.

The lecture and activity were designed to introduce students to the topic of health disparities, provide a framework for the research, and guide them through the use of the online modules. The goal of the lecture was to highlight the past and present work implemented to address inequities in health and eliminate health disparities and connect them to the role of pre-

health/medical professionals as a call for transforming the overall systems of health and healthcare. The lecture also challenged students to view both the individual behavioral outcomes that are attributed to health and the social inequities that contribute to health disparities. At the conclusion of the lecture, the students were encouraged to participate in a pre-survey.

Note. Description of Health Disparities.

Figure 6 Health Disparities Word Cloud

Pre-Survey

In order to collect demographic information on the students enrolled in the course, I administered a pre-survey (Appendix C). Participation in the pre-survey was voluntary and the survey data was collected between weeks 1-3 of the semester. The pre-survey similar to the word cloud was used as a tool to collect preliminary data on the students enrolled in the course such as student demographic data and academic major (Figure 7). Sixty-five percent (N = 75) of all students completed the pre-survey. Of those who completed the survey, 95% were kinesiology majors. Based on the pre-survey, 77% of the participants were female and 21% were male.

There was a higher percentage of white (81%) participants than other racial or ethnic groups. Approximately 42% of the participants were from suburban areas compared to 41% from rural areas. The pre-survey demographics data paralleled the overall makeup of the entire class despite only 65% of the students completing the pre-survey.

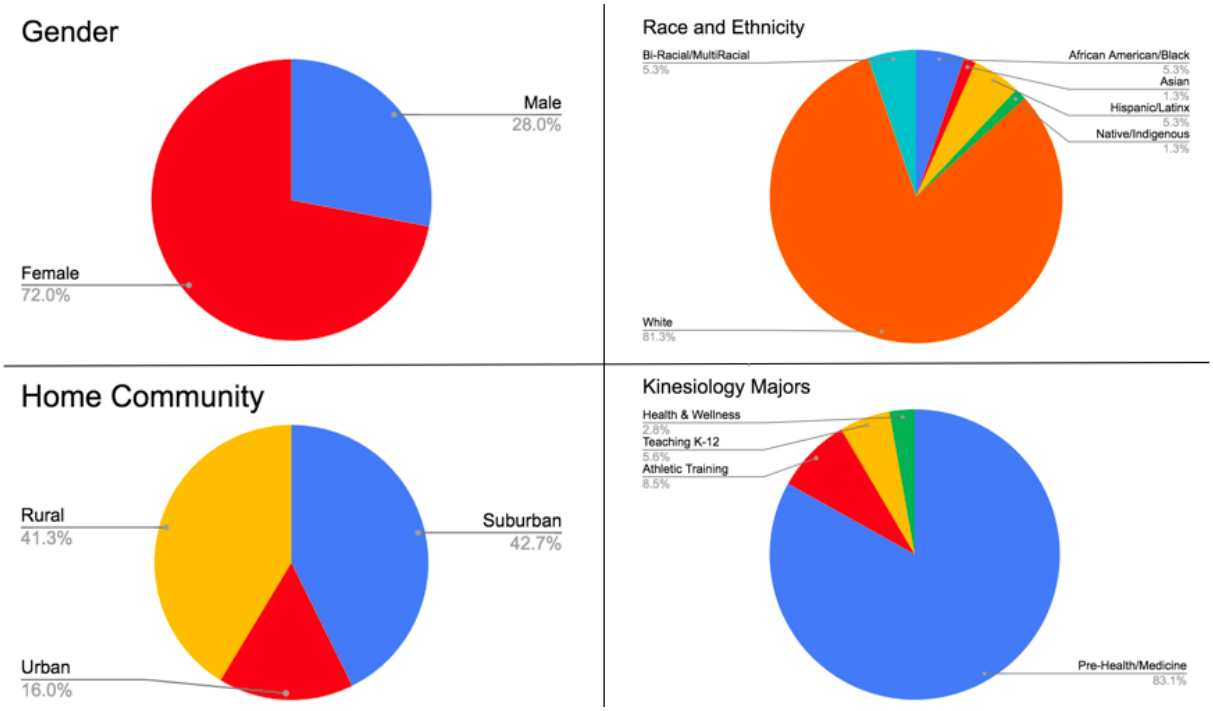


Figure 7 Pre-Survey Demographics

Next, the pre-survey provided a baseline measure of each student's previous understanding and experiences of health disparities. For example, participants were asked if they had any "previous learning experiences that centered health disparities?" The majority reported no (51%), some reported yes (29%), and others were unsure (20%). For those that reported yes, they indicated prior learning experiences that were associated with volunteer and research opportunities, speakers for student groups and clubs, and academic courses such as cultural

anthropology and learning from their current enrollment in this human disease course. Each of these experiences informed prior learning about disparities.

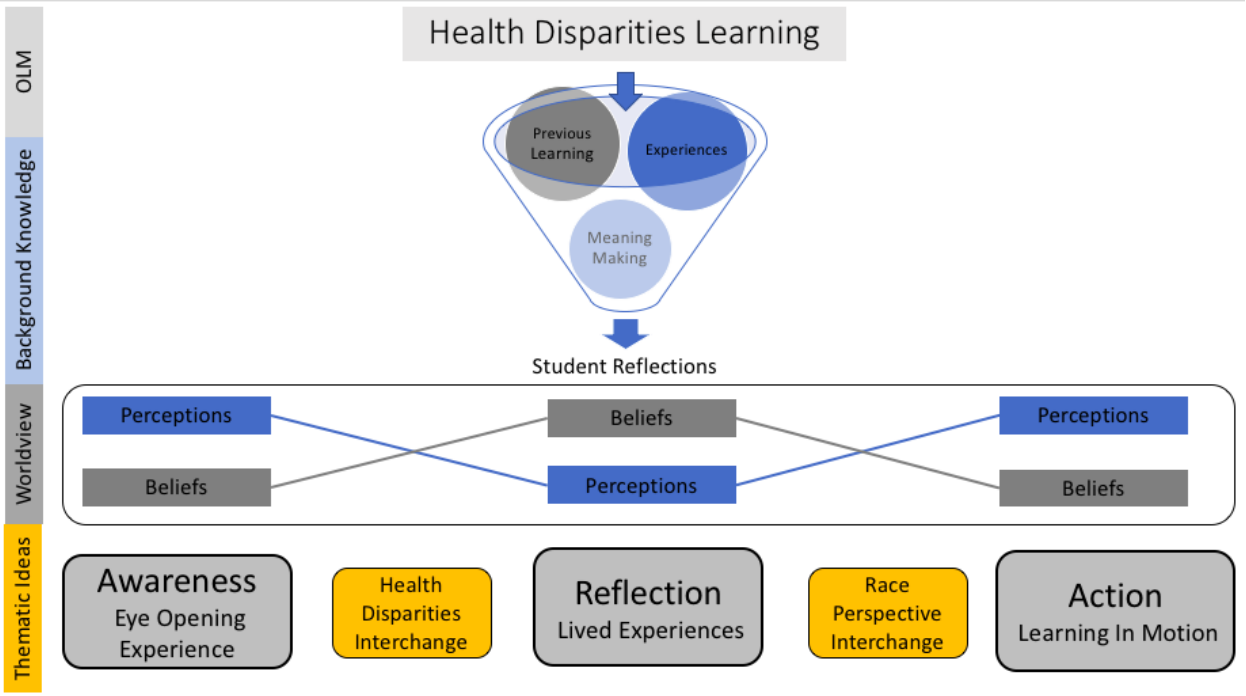
Lastly, study participants addressed their learning and understanding of the health disparities in the pre-survey. There were students who reported having a high (75%) understanding of the meaning of the term. Students (78%) also reported having an interest in increasing their awareness and learning about disparities. As well as reports of students (73%) interested in further exploring issues and topics about health disparities throughout their education and future professions. The pre-survey offered a high-level overview of the students enrolled in the human disease course.

Health Disparity Learning Figure

I designed a health disparities learning figure (Figure 8) as a visual representation of how I synthesized the findings during the data analysis process. The figure was designed using theoretical and practical ideas for mapping the collective journey of 140 students and how they conceptualized their learning via activities, discussions, and written reflections. I designed figure 2 using ideas adopted from Freire's (1974) work on critical consciousness that suggests students who participate in learning enter into that learning with previous knowledge and experiences that guide how they intellectually and emotionally engage with the current learning. The content highlighted in the figure included: 1. student engagement in online learning modules (OLM's), 2. background knowledge and experiences, 3. worldview, and 4. themes and interchanges. In this figure, the OLM's represents student participation in the assigned health disparity curriculum.

The next section, background knowledge, was adopted to highlight how learners filter new knowledge through previous learning and experiences in order to make sense of the world around them. It is also used to represent the idea that students did not enter into these courses as

empty vessels waiting to be filled but were viewed as individuals who already possess certain knowledge about the world and the way it works. Therefore, when they engaged in learning, it was filtered through previous learning and experiences that were not limited to formal (i.e. schools) learning environments.



Note: This figure represents a conceptual understanding of student engagement in

Figure 8 Initial Health Disparity Learning Figure

The worldview section represented the position or posture the students assumed when presenting their reflections. They were positioned as either belief statements or student perception statements and detailed in their written reflections. Beliefs are generally referred to as a set of ways for guiding how students interpret the world, which is relatively stable over time and across academic courses (Vereijken et al., 2018). However, beliefs are not stagnant and have

the capacity to undergo change (Freire, 2008). For this study, beliefs were viewed as strong positions or statements that were in some ways connected to lived experiences. Beliefs were sometimes viewed as strong opposition to an idea (i.e. test outcomes) or positioned as non-negotiable (Table 3). Student beliefs and perceptions about learning are sometimes related (Vereijken et al., 2018).

Table 3 Making A Statement: Statements of Perceptions and Beliefs

Student Statements of Perceptions	Student Statements of Beliefs
I [want to] work on changing my subconscious reactions to better conscious ones. -BC	I don't necessarily believe this [test] to be true because I have many friends who are African-American and I love them as much as I do my friends who are of the same race as me. -EX
I learned the difference in language to use …[we] can get a whole population of people to use the language the correct way. -AN	I think every single person should be treated equally, no matter the race, gender, income, or literally anything. -FC
I think it's important to try and find one goal, whether that's looking at a particular disease and trying to eliminate the inequality associated with that disease or looking at a community and providing more and better health services. -DK	I would never ever imagine of judging someone or liking someone more because of their skin color, ethnicity or anything else. I have a brother adopted from West Africa and I love him just as much as my biological brothers. -CW

Perceptions are viewed as ideas expressed or they are ways of seeing and knowing based on the current reality (Freire, 2005). In this research, perceptions were viewed as descriptions and interpretations of behaviors, use of language, or actions (i.e. openness or willingness to learn new material) that result from awareness. Beliefs and perceptions about the topics were written in student reflections and based on the health disparity topics. One typically became more salient than the other (Figure 8). For example, in the reflections for the first theme, Eye Opening Experience, students expressed their perceptions about the new learning content more than their

beliefs (i.e. strong statements or opposition). The way students expressed the ideas in their reflections were reversed for the second theme - Lived Experiences.

The final concept highlighted in figure 8 is represented by themes and interchanges. The interchanges are assessment activities that were integrated within the learning modules that evaluated how students made connections between theory (learning) and practice (doing). According to Freire (2005) both practice and theory are important in learning and "we must not negate one for the other" (p. 83). The interchanges allowed me to observe how students responded to learning activities for challenging social inequalities. The interchanges were also used to highlight that students do not exist apart from the world in which they live. The themes were directly derived from the data after careful coding and analysis. This information will be extensively detailed in the coming sections. Overall, Figure 8 was used to help me think through the analysis of this ethnographic case study. The ideas discussed were essential in illuminating how students communicated their understanding and growth for thinking critically and consciously about health disparities across the learning modules.

Eye Opening Experience – Theme 1

The moment had finally come; students would participate in their first self-paced learning module. I wanted everything to run as smoothly as possible and my focus was not specifically on the content but rather how students would use the online platform to access the learning resources and content. Despite the fact that I provided specific instructions for use and outlined multiple steps for how to access the learning modules, there is always a possibility that something might go awry when students use a new technology for the first time. I began to question the process. Would students be able to access the content? Would they remember to

press submit following each activity to ensure their responses were saved? As the week progressed and students began submitting their responses, my worries slowly dissipated.

Each student's reflection varied in length and depth as some students briefly addressed the reflection prompts while others answered the prompts and provided additional information such as their ideas, thoughts, and related experiences. The student reflections contributed value information which helped to frame the Eye Opening Experience theme through different categories. The categories were the multiple ways students discussed the theme which included: No… never have, Language of inequality, It's avoidable, Ignite curiosity, and Which is it?

No… Never Have. The term health disparities were not as common among students as the pre-survey suggested. While a high percentage of students reported they had an understanding of health disparities, as we will see in these coming sections, their understanding was without depth. As a matter of fact, the majority of the students that participated in the study had little to no knowledge about health disparities, neither did they have an understanding of the communities, groups, and individuals impacted by them. The baseline data I collected from the word cloud and pre-survey only slightly captured these trends. The data collected from student reflections captured and provided the understanding that clarified how or the ways in which students were understanding health disparities. In light of this, the early reflections became mini confession sessions that described student engagement with the learning modules. One reflection read "When we got introduced to health disparities in class last week, I was unaware of what it was" (AL, September 5). Another student explained the differences between their understanding of health disparities both before and after engaging in the learning module:

> When asked in class what a health disparity was, I didn't have an answer that I felt comfortable with stating. After reviewing this module, I understand what a health

disparity is and why health is so important to us and those among us. (CF, Sept. 5)

It was important to note that these early reflections highlighted that students were unfamiliar with the term health disparities and many were being introduced to the concept for the first time. It was an introduction to concepts that some have never had to think about.

The initial health disparities learning topics were designed to inform students about BIPOC communities who are impacted most by disproportionate outcomes. Although some acknowledged that they don't typically think about those impacted by health disparities, they did write about the challenges for those who experienced them. One student wrote, "I never have thought much about the restrictions others face and how challenging it can be for them to receive good health" (FF, Sept. 5). While their classmates described having little understanding of how disparities impact BIPOC, especially since it didn't impact them and their health experiences have always been "normal" or consist of "good fortune." They wrote:

> I had never really thought about how just growing up differently could have affected my health. I also learned that I have had a lot of information about health given to me while growing up. It just seems normal to me to live a healthy lifestyle but without this pushed into me while growing up I would have never known to do that. (DM, Sept.5)

> I don't think about the health disparities felt by minorities because I have been lucky enough to have medical access and the chance to enhance my health through physical activity and healthy foods among other resources. In fact, before this module, I wasn't entirely sure what health disparities even were. (EA, Sept. 5)

In each of these reflections, the student's level of awareness for "never having to think about" health disparities was their way of acknowledging and in some cases, demonstrating their

privilege. For others, coming into this new understanding meant grappling with previous perspectives for why BIPOC are impacted as well as seeking solutions to lessen the impact. For example, students wrote, “I learned about the differences between people/groups and healthcare they have access to … how can make things fairer for those who are burdened by health disparities?” (DL, Sept. 5) or

> I learned a lot about health disparities which I think is good knowledge to have when pursuing a career in the healthcare field. We should all be very aware of every person's situations and how that might affect their overall health both positively and negatively. (BF, Sept 5)

As noted in the statement above, not all students dismissed health disparities as other people’s problems. There were examples of one student that found the context of this learning difficult to take in. They wrote,

> It was hard for me to open my eyes to the idea of health disparities… A person’s race, geographical region, or sexual orientation should not be the determinate towards what kind of care they receive…Every person going to see a professional care provider should be treated with the utmost care and respect. (AD. Sept. 5)

For this student, the mere fact that health disparities existed was disheartening in light of how they perceived the responsibility of health professionals. Many of these students for the first time were engaging in teaching and learning modules that explicitly presented health disparities and the various groups impacted by them.

Language of Inequality. The modules were also designed to acquaint students with language that is prevalent when discussing ideas and topics centering disproportionate health

outcomes. Each of the modules was designed using learning resources that included articles and videos to introduce definitions and terms, technical uses of the language, and context to bridge social inequalities and differences in health outcomes. As students reflected on this aspect of their learning, they discussed their struggles to understand the terms and the similarities between their meanings. They wrote,

> I struggled with the difference in all of the terms. (ES, Sept. 6)

> I struggled to keep the vocab and their definitions straight because they are all related. (DL, Sept. 6)

> A lot of the definitions seem quite similar to me, but the more I broke them apart, the more it started to make sense ... now I know more of the broad definitions. (DI, Sept. 6)

While some students were sought to figure out the differences between the words, others considered it a review. Some of these words were introduced to students in other courses but the learning modules provided increased clarity around the meaning and uses of the language. One student stated,

> I got introduced to the terms "Health Disparity" and "Health Equity" in prior health study classes [it was there]... I heard of the term, but now I have a clearer understanding of what they are and why it is important to our society. (CM, Sept. 6)

The language used to address inequalities in health is paramount in helping illuminate its complexities. Some students appreciated how the terms were conceptualized and clearly defined by researchers to provide in-depth clarity between the concepts and stated, “I felt as if I had a general understanding of every concept, but what I appreciated was learning the dictionary

definitions of concepts and terms. This allowed me to better differentiate" (EM, Sept.6). Another student posted a related statement saying, "I learned the correct definition and use of the terms health equity and health differences as well as factors that may play into their presence in a community or population" (EQ, Sept. 6). The concepts for health disparities encompassed language associated with inequalities and promoting social justice.

The language used to address inequalities are not used broadly across academia. Many programs typically address the differences in health outcomes, but not the social inequities that contribute to those differences. Therefore, it came as no surprise when a student described their interaction with the new words or words associated with social inequities as unfamiliar. One student wrote, "the social aspect of this module... felt like a lot of foreign words to me" (DW, Sept. 6). Another student didn't explicitly label the associated terminology as foreign but did describe it as a language that should possibly be adopted by all. For example, "I learned the difference in language to use when describing health disparities, inequalities, etc… can [we] get a whole population of people to use the language the correct way? Maybe we start with all stakeholders in health and medicine.

Others discussed how the language used to describe these terms could only usher in the necessary changes for improving outcomes by writing, "I learned the important distinctions between health disparities and inequalities and how the language used can affect resources allocated to disadvantaged groups and impacts how governing bodies respond. I also have a much clearer picture" (BX, Sept. 6) or "Learning the meaning of health disparities, and the importance of defining it in concrete terms advances the agenda of those working towards health equality" (CE, Sept. 6). Early in the health disparity learning modules, students recognized that there's a specific language for understanding health inequities and other inequalities that were

unfamiliar to some while increasing the understanding of others. For students, the words and ideas that centered health disparities seemed foreign because up until this point the majority of these junior and senior level students had not participated in curriculum that focused on health disparities. Students were navigating their degree programs as pre-health professionals and health disparities education was absent from their core, required, and elective undergraduate courses.

It's Avoidable. In week two of the semester, a student posted the following question to the discussion board (Packback) with the title "If health disparities are avoidable, then why do they exist?" (FD, Sept. 6). The word "avoidable" was one of the words used to describe health disparities by researchers then later refuted in the same required readings for lack of clarity. However, this term was heavily discussed by students as they attempted to conceptualize the correct use of the term. In student reflections, the word avoidable was viewed in two ways whereby they concluded it was avoidable by the individual or by those within the health practitioners and institutions (i.e. professionals, access). These ideas were fully addressed in the article as the writer argued the term leaves too much room for interpretation when identifying - "avoidable by whom" (Braveman, 2014). This idea did not go overlooked as one student wrote,

> One thing I learned was that defining health disparities is difficult to do because of the various perceptions individuals can have when using terms such as "avoidable" … achieving [disparities] is going to have to encompass many solutions beyond just establishing secure, quality health care systems. (BP, Sept. 5)

The previous post highlighted that avoiding health disparities is not the work of one individual but the work of many. The post also showed that students were making sense of the word avoidable but for many, the lingering question was "if avoidable, why do they exist"?

The question posted by FD to classmates on the discussion board was not a random thought, but an idea they wrote about in their reflection at the conclusion of the learning module. In the reflection, they noted, " I learned more about health disparities and how it is vaguely defined. I always knew what the concept of it was but never knew the actual name and how it could be avoidable" (FD, Sept.5). FD was not the only student to discuss this topic in their reflection, another student wrote, " I learned about the multiple, varying definitions of health disparities... What was particularly interesting was learning that health disparities are avoidable" (DE, Sept. 5). Health disparities as avoidable was initially discussed in the reflective assignments of students. However, by the end of the week, they were no longer limiting their ideas to this space but transitioned to a public discussion and inviting classmates to respond to their questions through dialogue.

The discussion post began with a question, but FD also provided in-depth inquiry writing "Health disparities are defined as avoidable, but even in developed countries, this continues to be a big problem. We allow this to happen and not many people notice. Moving on, people are working on reducing disparities but is it enough?" (FD, Sept.6). Two classmates responded to the post and one identified that they also discussed this topic within their personal reflection prior to posting online. The first comment to the post provided two points for how disparities could be avoided that included individuals doing their part and the country doing its part;

> I totally see where you are coming from. I wrote upon a similar idea for my post. I said that while health disparities are avoidable, do we as humans do our best to avoid it? Even more specifically, does this country do a good job of trying to reduce health disparities? I would say no. I wrote that we as humans live a busy, busy life and exercising or work out after a long hard day of class, homework, and exams, etc. are probably the last thing on

> our minds. But as Kinesiology majors which most of us are, we should be better than that. We should want to be active and be the small change in society [and] this generation. Hopefully, our actions will help others change as well. (CS, Sept. 6)

In the post, CS continuously centered the phrase "as humans" in the discussion of health disparities as avoidable. The phrase initially disconnected disparities from the communities and people affected by them and generalized it as something that impacts everyone equally. The writer varied slightly from the "all humans" statement for a moment but immediately returned to it in order to identify disparities as the work of "all humans." The term "avoidable" was then translated as a problem that could easily be solved by making time to workout and helping others do the same. Health disparities as "avoidable" in this statement was positioned as a problem that existed on a level (social and economic) playing field and they could be eliminated if all individuals make the time to be healthy. CS was not the only student to associate health disparities to individual behaviors; it was present in other reflections though presented in slightly different ways and within different topics that will be discussed in later sections.

The previous post highlighted the role of government when discussing whose responsible for eliminating health disparities. There were other statements made where students questioned the role of the U.S. government for eliminating disparities. One student went so far as to accuse the country's healthcare system of neglect for contributing to the inequitable treatment and access of BIPOC groups. They noted this response in their reflection.

> I learned that health and healthcare across the country are not equal. While one may have access to healthcare, the spectrum of coverage does differ based on the individual. The healthcare system has failed many individuals in the United States and eliminating health disparities is [the] one step to take to prevent it from happening further. (AO, Sept.5)

In another reflection, a student discussed why health disparities are still an issue if the country can eliminate them. Despite this, the student had little hope of completely erasing disparities for all writing,

> I struggled to understand how this still has such a huge impact even in a developed country such as the US. I feel that policies and programs could be made or changed to attempt to resolve this problem, but I don't feel confident that even if things change the problem will ever completely be solved. (AH, Sept. 5)

Two of the three students made statements that evidenced belief in the U.S. ability to eliminate health disparities, but they also doubted that the issue would be completely resolved. The students concluded that there is so much more that could be done. Avoiding health disparities was positioned in the next comment as being the work of health professionals and those who hold positions of power to make decisions in health and medicine. These individuals are responsible for the change.

> Who starts the change? As a society, I believe we all realize health disparities are prevalent but few know how to change it. I believe it starts with the higher-ups in the healthcare field. They need to realize these problems exist and find ways on a large scale level to make a change. And if these problems are avoidable then they need to make the right moves so it never happens again. (FA, Sept. 8)

The writer concluded that the necessary changes to be made must begin with those that are currently in positions of power and already making decisions. The writer then states that changes have not been made because professionals are somehow unaware that the problems exist. Not all students viewed necessary changes for avoiding disparities as someone else's problem to fix.

In fact, some asked questions to better understand what they could do. For them, if health disparities are avoidable then how could they help fix them? For example:

> The concept of "health disparities" is very interesting to me and I would like to learn if there is anything I can do (as a pre-dental student) to possibly make a difference in the field. (AC, Sept. 5)

> I would like to know what we can do to help close the gap with health disparities. (DU, Sept. 5)

> I would like to learn more about the communities that are being impacted the most, and what can be done to help. (CF, Sept. 5)

> I'd want to learn more about what types of actions are being taken to eliminate many of those disparities and how my future career in physical therapy can aid in that process. (DE, Sept. 5)

> I learned about what health disparities are and how we can overcome these avoidable differences … Health disparities are AVOIDABLE, meaning we can work together to make health care and being healthy as a whole more available to everyone. (AZ, Sept. 5)

One of the main takeaways from these student perspectives was the idea “avoidable by who.” This was the first time the writers provided a glimpse into their beliefs on this idea of good and poor health as being either the responsibility of the individual versus a structural and

systemic issue of disparities. The dialogue was beneficial to the development of student learning and growth as they grappled with the idea that the elimination of health disparities is beyond an individual effort but should be tackled by the profession together.

Ignite Curiosity. Just before the lecture was to begin, "I rushed into the lecture hall to meet Dr. Goodwin face to face for the first time. I discussed with Dr. Goodwin the progress students were making after completing the first online learning module (Observation Journal, Sept. 3).During week two, Dr. Goodwin delivered an introductory lecture on epidemiology and cancer. Midway through the lecture, Dr. Goodwin informed students how research practices, inadequate treatment, and access to immediate healthcare contribute to health disparities. Dr. Goodwin cited two research studies to highlight how researchers for "medical studies tend to recruit college-aged, white males as participants without considering the outcomes of their findings on others (gender, race/ethnicity)." This narrow sightedness could become a problem for those with varying identities. For example, the research points out the disparities in disease outcomes related to cancer diagnosis and mortality rates between Black and white women. Dr. Goodwin noted that both groups of "women showed a similar percent of diagnosed cases but the mortality rate for Black women was 49% higher than that of white women." These differences in mortality rate were attributed to primary risks such as diet, activity level, and environmental factors. The use of these examples "implementing health disparities into the lectures occurred the same week students were scheduled to complete their first health disparities module and was a great way to ignite student curiosity about the topics" (Observation Journal, Sept. 3).

Which is it? The examples of disparities used in Dr. Goodwin's lecture centered on the minimal differences between groups in cancer diagnosis vs the disproportionate mortality rates for Black women. Dr. Goodwin provided these examples as points of discussion and students were left to individually reflect upon them. The students' curiosity bled into the online discussion board. There was one conversation, in particular, between five students that addressed the underlying but ongoing discussion about disease, genetics, and biology in Black women. In the initial post, the student wrote three questions seeking clarity on cancer outcomes for Black women. The student asked, "Is there a reason why black women may have more aggressive breast cancers developing at earlier ages? If there isn't unequal access to improvement in cancer treatment is this still true? Also, what can cause the genetic differences in the tumors?" (ED, Sept. 13). The students that commented to the post all provided their perspective on a specific part of the question along with a link to a scholarly articles, reports, or websites to bring some level of validity to the answers they provided.

The first reply addressed the latter part of the question that discussed ideologies that supported genetic differences based on race. They wrote,

> There are a few genetic differences that may be the cause of the early onset of breast cancer in black women" that includes triple-negative diagnosis, different cell biology of the breast, and lifestyle choices (i.e., lower rates of breastfeeding). (AJ, Sept. 13)

At the conclusion of the post, the writer noted that the findings were adapted from a cancer site and the link was provided. They then provided final thought on the topic stating, "I would definitely say that the differences in African American biology play an important factor in how early they are diagnosed" (AJ, Sept. 13). From the start of the post, the writer was upfront about their position on the issue stating aggressive breast cancer in Black women is the result of

genetic and personal causes - without directly using the language “genetic.” The writer proceeded by linking XYZ website as support for her comments.

There was little thought given to the role of systemic or structural inequities. Structural and institutional practices in health are one of the largest contributors to differences in disease outcomes. The second person who replied to the initial post addressed some of the structural differences resulting from health insurance coverage. The student noted that there is a correlation between insurance coverage and the aggressive rate of breast cancer diagnosis in Black women:

> So according to the article...even after the Affordable Care Act was passed, black women were still the lowest in health care coverage...this coverage goes hand in hand with the lacking of information that is needed to be able to know the signs that accompany common/dangerous illnesses, such as breast cancer. (BW, Sept.13)

Another student shared their thoughts on the initial questions posed. The student’s comment spoke to structural inequities and social impact on disparities. The student also noted there is not one simple cause because it's a complex problem and even within the complexities inequities for Black women are still at the forefront.

> The reason why could have more than one reason. From what I know, it could be due to the fact that most black people will overlook symptoms until things get worse before seeking help. So it could be due to late diagnosis and care. Which you can’t overlook that [in] diagnosis and care, there are also health disparities. But I don’t think there is an actual cause in “genetic differences in tumors” [when] comparing black and white women. (BV, Sept. 13)

The final response to the initial post seemed to directly respond to the above reply more than to the original post. The writer seemed to carefully craft his response to address some of the other points previously made and to clearly point out that Black women have a higher risk for breast cancer because of cultural behaviors and genetics while completely disregarding all other factors.

> Black women are more susceptible to aggressive breast cancer at earlier stages in their life. Cancer affects different races of people and has different outcomes. For example, black women are more susceptible to die from breast cancer. They are more susceptible to more aggressive breast cancer than any other race. There are many reasons that black women are more susceptible. The factors include lifestyle [diet, activity, alcohol use, sexual practices, and behaviors], SES, and medical services. Genes also play a role… people are able to inherit genes linked to disease and culture plays a role. They follow certain beliefs and practices which can lead to distrust of medical services and are not able to talk to doctors and help with their sicknesses and disease. All these play a role in their susceptibility and other races are more susceptible to certain [other] cancers. Black women are more susceptible to breast cancer. (EB, Sept.13)

This discussion thread illuminated the century long debate among health and medical professionals about health disparities that confront whether they are due to genetic and biological, cultural behaviors, or due to structural inequities. In times past, the primary factors associated with disproportionate differences in disease outcomes were said to be genetics and biology while completely ignoring institutional and structural inequities. The back and forth dialogue was on the one side based on stereotypes and deficit perspectives that are rooted in age-old ideologies while the other side acknowledged the complexities of disparities that leaned

towards the structural implications. These ideas are more complex than what was discussed in this thread and could best be summarized by a student who stated, " I learned that there is an entire body of research devoted to understanding the epidemiology behind these disparities. Many factors are completely outside of one's control to achieve health equality" (DE, Sept. 5).

Eye Opening Experience – Theme 1 Summary

The first theme emerged as a result of the students completing their first learning module and in essence, "their eyes were opened" to the disparities that exist in health care. These students actively participated in the learning modules and dialogue both of which informed their knowledge on the subject. The students gained new logic and inquiry about health disparities. Noted in their reflections, students discussed a desire to increase their understanding of disparities and this new desire directly correlated to them realizing their own learning gaps.

In the categories outlined for this theme, two learning gaps emerged. The first was the reflections on language and terms used for understanding the social and structural aspects of health. Students discussed terms and associated ideas such as health equality, health equity, and social determinants of health as foreign. They noted that these terms and ideas were difficult to understand. These senior and junior level undergraduate students were frustrated and wrote about their dissatisfaction for the limited exposure to these words in previous courses. It was also interesting that some students had little understanding of health disparities but were able to easily identify the communities as "them" and "they" which was interpreted by other classmates as people that are poor and/or Black as those most impacted. Their understanding of those impacted could be related to the idea that BIPOC groups are most affected by other inequities such as social and economic.

The second gap in learning focused on the impact of disproportionate health outcomes in groups that did not identify as BIPOC but those that included gender (women or non-binary), SES (low or poor), and environment (rural or urban). A large majority of the students occupied one or more of these categories and expressed surprise at the idea that they could be impacted by disparities. In their reflections, they described their experiences with health access and treatment not as inequitable but as normal, lucky, or as having good fortune. Social researchers would however refer to these experiences as a built-in advantage that's separate from income or effort but related to unearned power and privilege (Sensoy & DiAngelo, 2017; McIntosh, 2003). In this category, privilege was also expressed as not having to think about health disparities or making the conscious choice to tackle SES based disparities because you personally are not affected by them.

The ideas that guided student's understanding of disparities were initially displayed as they privately reflected on their beliefs about race and disease. For example, topics for health disparities as avoidable were used to position responsibility as either falling on the individual or health professionals and institutions of health. These types of beliefs later transitioned from private thoughts to public online conversations with classmates for the "which is it" category as one student's curiosity ignited a public and fiery dialogue that centered Black women, cancer, and genetics.

In the dialogue, it became very evident that dominant ideologies associated with race and disease informed how students engage in dialogue about the role of social institutions and structures on health disparities. It also highlighted how students used resources such as articles, reports, and websites to assist in reproducing disproportionate death and disease outcomes.

Regardless of those ideas, student reflections and dialogues were prompted by the learning topics and increased curiosity for health disparities. Dialogue as a process of learning and knowing requires having a curiosity about the topic that leads to developing better comprehension (Freire, 2005, 2002). Curiosity is the place where new learning is informed.

Health Disparity Interchange

The start of the second module was designed to provide an overview of the communities and groups impacted by health disparities along with root causes. Following the learning, I created a mini case study and poll (i.e. HDI) to assess theory vs practice related to how students were thinking about the approach or the position they would assume for making health disparity decisions as pre-health professionals. The case asked students to respond to the following prompt "As the lead health professional, you are responsible for establishing new practices and policies for eliminating health disparities in your community. Which root cause of disparities would you tackle first?" There were four root causes listed for them to select from that include: racial and ethnic inequities, gender inequities, socioeconomic inequities, and environmental inequities. A total of 127 students participated in the poll. Three of the 127 did not provide responses to the poll. Of 124 responses 42% of the class noted that they would tackle socioeconomic inequities as a first step in eliminating health disparities (Figure 9).

Racial and ethnic disparities ranked the second at 27% followed by environmental at 19% and 10% voted to tackle gender inequities. The purpose of the poll was to evaluate the types of actions students would take following the initial health disparities learning modules. This poll was their opportunity to reflect on their newly acquired knowledge. From the findings shown above, students gravitated towards tackling SES to minimize health disparities in the community.

On the surface, it appeared that to tackle SES as a first step towards minimizing disparities was equivalent to the desire to minimize disparities across all communities. However, in their reflections, there were reported differences in how they approached topics of race and

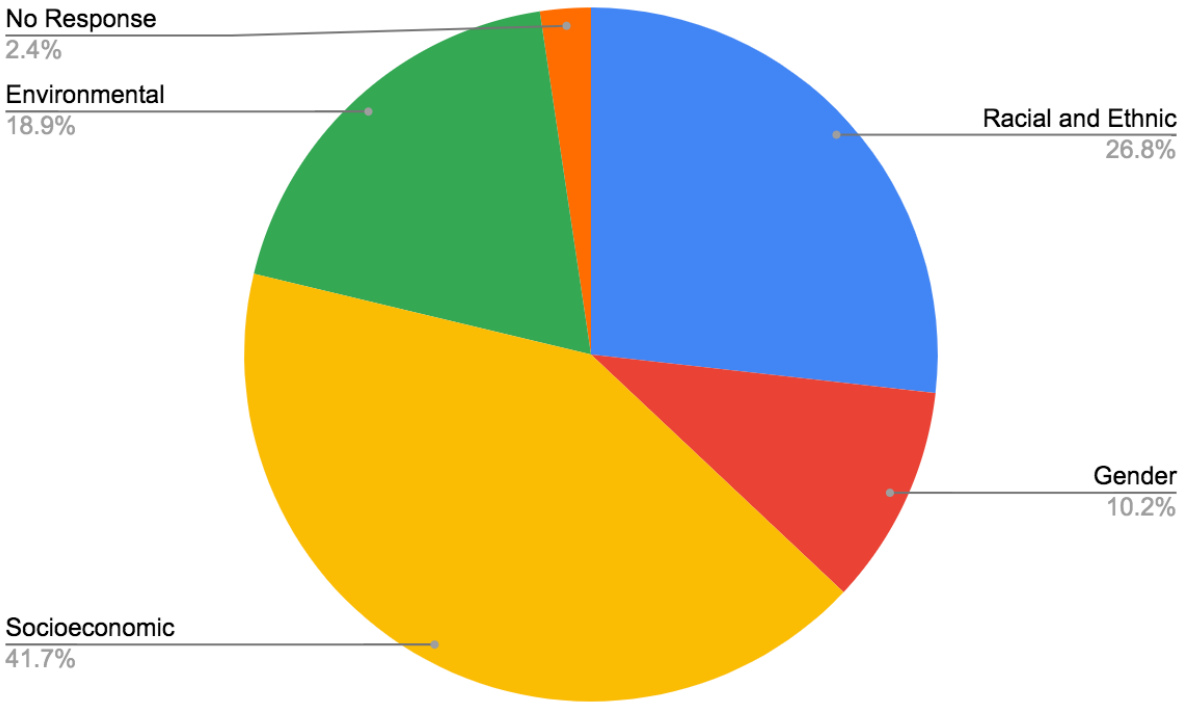


Figure 9 Health Disparities Interchange

SES based on their understanding of social inequities and how they identified (white, upper or middle class). For example, the impact of social inequalities was typically ascribed to Black and impoverished communities in student reflections - as if the two identities were synonymous with each other. One student wrote,

> I think I learned a lot and gained a higher level of understanding of health disparities. I have always had a basic idea that people who live in low-income neighborhoods and

> people who experience discrimination are more susceptible to health problems, and they struggle to find health care. (CN, Sept. 5)

The words Black and impoverished were not explicitly stated in the above quote, it was used to replace other descriptors that the student was possibly not comfortable or ready to write, but they were able to describe and name those impacted by inequalities not as something particularly taught in school, but as something that is just known (i.e. common knowledge). Another student exemplified their understanding of social inequities by describing how identities were historically positioned as markers for treating disease by writing,

> Tuberculosis was known as a "poor person's disease" at the turn of the century due to the inequality of whites and people of color. The whites were given more cleanly living quarters and not many others were and that allowed for the disease to spread far more easily between those in crowded living quarters than the whites. (DQ, Sept, 5)

The student highlighted two very interesting points about health disparities and identities that oftentimes go overlooked. The first suggested health disparities impact all communities that live in poverty. The second point addressed the practices used by health professionals to slow the spread of disease in white communities. The student highlighted that disease in this example was not a poor people's disease, but it was a poor Black people's disease. The differences in treatment or intentionally ignoring and allowing disease to go untreated in Black communities contributed to the disproportionate health outcomes. There were other students who discussed the assumed impact of SES and race, as well as other areas that were unfamiliar to them. For example,

> I learned that health disparities affect more communities than the ones I had originally envisioned which were race and income. I also learned that geographical location,

> gender, and even migration play a role in health disparities… Although I understood how the given factors alone affect health disparities, I don't really understand how they connect. (FB, Sept. 5)

Two students discussed areas of gender and environmental (rural) disparities in their reflections. The learning that centered these areas was viewed as new knowledge and therefore brought different perspectives as some students were able to recognize themselves as people who were impacted by disparities. One stated, " I am a person that struggled with health disparities growing up… [although] I will never know what a woman goes through when dealing with health disparities" (AE. Sept. 5). The reflection addressed the lack of understanding for gender inequities without addressing their own disparities. Each of the disparities listed on the assessment poll are rooted in structural inequalities that typically affect other areas. One student wrote it this way,

> I recognized that structural determinants are basically a domino effect. It affects your socioeconomic and political context which also affects the socioeconomic position of a person, and that too affects the material circumstances. So if a person is at a disadvantage at the beginning of the chain then their health is most likely at risk which causes health inequality in our society. (BN, Sept. 5)

This student pointed out a connection they made between SES and politics associated with a person's identity (race, gender, etc.) are in place at the start they will determine the impact at the end. The problems associated with health disparities are complex, they are socioeconomic, genetic, and based on behaviors as stated in this reflection:

> Health disparities are not as simple as their definition. What I mean is that you can look at it strictly as a socioeconomic problem, and that holds significant validity in terms of

> transparency. However, there are numerous variables that influence one's own disparity. This could be not as readily visible such as genetic factors, undiscovered health issues, or even one's attitude/choices toward their own health. The point I am trying to make is, health disparities are issues that cannot be simply solved by fixing one area. (AY, Sept. 5)

The impact of health disparities became more confusing as this student became more informed about the topic and their grappling with ideas could clearly be perceived. Despite their awareness, the undue burden for eliminating disparities was still placed on the individual to solve. The interchange was designed to evaluate the action students would take to minimize disparities in their communities. A large majority of the students selected SES as the identity and group they would initially tackle for eliminating health disparities. Many of the students discussed their awareness of the disproportionate health outcomes among the poor, while simultaneously discussing the impact on race and ethnicity. Although gender and environment were discussed and selected by some because they could identify with groups that reflected their identities which included SES (poor), gender (woman), and environment (rural communities).

There are multiple ideas for why the majority of students selected SES as the first category to tackle for eliminating health disparities that centered on shared identity and those that have a presence or not within the communities in which they live. In the coming section, students overwhelmingly self-reported their identities as middle/upper-middle class and white (pre-survey) and reported having few to no BIPOC living in their communities, which provides some justification for why low SES or specifically low SES and white (community) was the most selected identity group to help first when eliminating health disparities. The community members represented by SES may not share income levels, but they do share racial identities which possibly plays a factor.

Lived Experience - Theme 2

For the second module, the central learning outcomes were designed for students to explore the people, groups, and communities that are disproportionately impacted by health disparities and the underlying causes that contributed to them. One of the root causes of health disparities is the impact of race and racism. Therefore as part of the learning, students explored their own biases by participating in the Harvard implicit bias project and completing the Race Implicit Association Test (IAT). Students were informed that they could explore other tests after completing the Race IAT. They were also informed that they would be provided an opportunity to reflect on their findings and explore them with curiosity and with a critical lens at the conclusion of the module.

In my analysis of the reflections, I noted how students focused primarily on their social identities (race, gender, SES) as they discussed the outcome of their implicit bias test. The test proved to be both informing and challenging for students as they discussed how previous experiences possibly influenced the reported outcomes of the test. The lived experiences typically included the impact of people and institutions that were influential in their lives such as family and friends, community, school, politics, or religion. The reflections contributed to the theme and four categories discussed in this section which included: Taking the test; I am; Is this a game?; and Implicit bias test - instructors response. Each of the categories will be discussed in the coming sections.

Taking the Test

Of the 140 students enrolled in the course 133 participated in the learning module for this activity. The majority of the class, 97 of the 133 students, completed the Race IAT test. The remaining 36 students opted to complete a different set of bias tests that were not assigned by the

instructor without providing any clarity as to why they made this choice. These 36 students completed one of the following bias tests: Weight IAT, Gender-Career IAT, Skin Tone IAT, Disability IAT, Age IAT, and Presidents IAT. Following the test, students were asked to Take 5-minutes (timed) to discuss their implicit bias test while taking into account their personal and social identities (race/ethnicity, gender, SES, etc.) as they reflected on their findings.

Students used various words to describe their responses to the test. Some were descriptive words such as roller coasters which were used to illustrate the twists and turns of emotions caused by worry, anxiety, anger, and frustration all from taking the test. One student simply stated, "I did not know what to expect when I took the implicit bias test" (CM, Sept. 20). It was unpredictable and the outcomes unfathomable. The process of measuring their biases left many students feeling unsettled. One student noted,

> It was uncomfortable to take this test. I was worried about what my natural response would be in relation to my filtered responses in everyday life… I do not believe I have any racial preference; however, I was worried that the test would portray the opposite. (BZ, Sept. 20)

The discomfort was even present for students who intentionally made efforts towards creating multicultural friend groups since being in college. They worried about what the results would reveal stating, "I've come to college and interacted with more people of different ethnicities, I've sometimes worried if I have some bias I'm not recognizing. This assessment is kind of reassuring in that" (EO, Sept. 20). For this student, the test confirmed their unconscious bias, but for another the test outcomes were viewed as a surprise because it did not align with their perceived level of personal growth. They wrote,

> I think that a lot of times I don't even realize that I do have biases against other groups of people, but that they are deeply ingrained in my brain because of years and years of stereotypes being presented to me regarding other races. When I talk to my parents, I sometimes realize how far I have come in regards to social inequalities, however. My parents would never identify as racist and have always taught me to treat others with kindness and respect. (EC, Sept. 20)

The recognition of implicit bias was accompanied by stereotypical perceptions of BIPOC men. Thoughts that were inherited from the society around them that students are unconscious to and goes undetected. For example,

> As a young woman, society screams in my ear to be apprehensive around a black man. Likewise, because I haven't been exposed to discrimination myself personally, I'm less likely to notice it occurring around me. My test results aligned with my lifestyle. Carrying implicit bias isn't something I'm proud of. (DE, Sept. 20)

> Growing up in this city, I was exposed to a lot of diversity in school and never felt like I was biased towards people [of color] at all. In a college town, unlike small-town Iowa, I thought I would be more immune to any racial bias. I don't currently think I have any conscious bias, so the results from this test must be a product of my environment. As a white, middle-class female, I think the messages I receive from society and those around me have impacted me more than I expected. Subconsciously, perhaps I am internalizing the discriminatory beliefs that circulate [in] America. (BX, Sept. 20)

Students in these reflections are contributing their implicit bias to home environments, communities, and the larger society that have influenced them over the years.

The implicit bias test or recognizing social impact was not limited to highlighting the individuals that have influenced students by were accompanied by student descriptions of their own emotional responses to the test. They wrote,

> My results on the implicit bias test were a little overwhelming… I am a white male from the middle class and taking this test made me feel kind of awful. (CP, Sept. 20)

> I find [the test] to be very untrue and kind of upsetting. (CW, Sept. 20)

The word interesting was also used to describe their experience. However, the description was often followed by an explanation that positioned the word interest in a way that hinted at a slightly negative perception of it. For example, this student highlighted the word when describing test analysis, that was followed by a critique of the test,

> When taking the bias tests found it interesting to see the automatic assumptions between completely opposing words and subjects. I'm not sure if I feel that having someone respond "as quickly as possible" makes the data accurate as the categories to letter switched throughout the test so it was a bit confusing. (CH, Sept. 20)

For this student, the test was both interesting and confusing. Another student discussed their interest in the test as something that was thought-provoking and odd but also having the power to reveal potentially embarrassing outcomes stating,

> I think the test was very interesting and also just a little weird to take… I think it is shocking to even see those questions and think of people [are] answering them in a way that shows they would feel uncomfortable around those of color. (AP, Sept. 20)

Another student's reflection echoed a similar response as the above, only they associated

it with also being fun writing, “I thought the test was interesting to take and enjoy. It is interesting how choosing good and bad words, and identifying black and white people can show our race preferences” (EY, Sept. 20). One just blatantly considered the test to be interesting and uncommon but having little value stating, “I think that this test was kind of interesting and unique, but I don't really know if I received any benefit from it” (CI, Sept. 20). The test was interesting in ways that could be appreciated, provocative, confusing, and uncommon without value. The test was also described as an experience that increased student awareness and curiosity. The test was viewed as an experience that opened their understanding and placed a spotlight on how individuals are negatively associated based on race. The reflection stated,

> I was slightly shocked… The tests did make sense and it makes sense where the overall result came from. It does make me think harder about how I act and the decisions that go into everyone else's mind when comparing the two races in day to day living. (AU, Sept. 20)

The test was viewed by students as a way to increase awareness by bringing to light who they are, not who they thought themselves to be. “I think the implicit bias test was definitely eye-opening considering it gave me a result that I was not expecting” (BX, Sept. 20). Many descriptive words were aimed at helping explain how students were experiencing or emotionally responding to the results of their bias test. In light of this, many were very dissatisfied with the test in general.

I Am

Bias testing provided an opportunity for students to think about and reflect on their personal experiences and background in light of the test outcomes. In this section, students wrote

about various ideas that connected their lived experiences and the impact of their families and communities. The topics that students focused on reflected on who they believed themselves to be which included self as empathic or not racists.

I Am Empathetic. Empathy was defined by some as having an understanding of another's experience by viewing it through the lens of one's own personal experience. For example, one student highlights her identities and experiences while at the same time acknowledging the discrimination of others by stating,

> As a straight white female, I face some discrimination in my everyday life, yet I know it is nothing compared to the roadblocks that black people face daily. I try to be conscious of my intentions toward people and never make judgments based on anything other than their character. (CR, Sept. 20)

For this student to make an assumption based on character alone was to ignore how implicit biases play out in the decision making or character judging process. However, a better measure of their intentions would be to ask if the same criticism or assumption would be made if the person was of a different race or ethnicity (i.e. white). Another student communicated similar sentiments where they attempted to rationalize BIPOC experiences through the lens of their own experiences. There was one exception, they were still in the process of learning how to be more empathetic. They wrote,

> I have recently been trying to be empathetic to what the African American community faces as part of their lives, but it cannot make up for their experience and how they feel affected by racism in America. I think I can slightly empathize with the stigmas and stereotypes they face as a female, since there are a lot of barriers for me in the world,

> although not in the same ways as the Black community. (AX, Sept. 20)

Empathy is learning to place yourself in someone else's shoes, but this student attempted to perceive the experiences, thoughts, feelings, and attitudes of BIPOC while standing in their own shoes. This was not true for the next student, who grew up in an all-white community and viewed gender bias as a gateway for understanding racial bias. They wrote,

> I grew up in a community where there were almost all white people so although we were taught what was wrong and right, I believe that we were never immersed in that setting ... I am a female, so I [also] think this helps me see things a little different and think of myself as more emotional and very empathic putting myself in other shoes. (DM, Sept. 20)

The sentiments of empathy were not only interpreted by white women as addressed in the previous reflections, but it was also shared by POC that did not identify as Black. For these students, empathy moved beyond connecting through an associated experience to connecting because of a shared experience. The reflection stated,

> I grew up in a predominantly white neighborhood and predominantly white schools. I know the good and bad that can come from it because I have experienced both as a person of color as well. I know how to deal with prejudice and discrimination from white people and I also empathize with black people because we go through similar things (DH, Sept. 20).

The previous reflection discussed the experiences of racial discrimination while highlighting the demographics of the community and school all while expressing empathy towards Black people. Another reflection echoed a similar experience growing up – it stated,

> Living amongst solely white individuals for a large majority of my life, my image of black individuals was more molded by [the] media. But because I am Indian I do have much more compassion for other races because I understand what it is like to be discriminated against in the United States. (DS, Sept. 20)

There were two groups of students that discussed empathy. One group discussed empathy as an idea perceived through their experiences and identities as white women. Utilizing empathy in this way equates to feeling sorry for another, which tends to downplay and minimize the reality of the experience. This perspective does not adequately compare to putting yourself in the shoes of a Black person because although a form of empathy may be present, the perspective could also exacerbate the impact of racial discrimination. For example, making a conscious choice to identify with the inequities associated with gender while ignoring the implications of race. To truly empathize, one must place themselves in the shoes of another by trying to see it and understand it from their perspective. The other group interpreted empathy from a space of having shared experiences of racial discrimination as people of color (i.e. not Black). These students highlighted their lived experiences of growing up and attending school in white communities but specifically discussed their choice to be in solidarity with Black people because of the shared experiences of discrimination. Two ideas of empathy co-existed in the same space but differed based on a shared experience versus an associated experience. However, empathy was not the only idea students used to frame the outcome of their bias tests.

I Am Not "Racists." The implicit bias test was designed to measure unconscious racial bias. In the reflections reported by students, measures of bias were perceived as racism and the two words were used interchangeably. The first student reflected on their findings and concluded

the test outcomes reported them as racist, not the idea of being or feeling racist. They proceeded to explain the reason for the possible report.

> I never really viewed myself as a racist person, but I did not grow up around many people of color or around many people of lower SES. This created an uncomfortable feeling in encountering these individuals because I was not used to their differences growing up in a predominantly white and middle-class culture (BE, Sept.20).

Growing up in a white community was viewed as a drawback in this reflection because it minimized opportunities to interact with BIPOC or the individuals with low SES. For other students who were raised in more diverse communities, similar conclusions were made about not being racist. One student wrote,

> I have grown up around black people in my life, and I know that we are all the same. I have never felt that I am racist, and I truly believe I treat every human being the same, regardless of race … One of my better friends in elementary school was a black girl, and this was long before I even knew that there was a racism problem. I [also] work with black people in my daily life. (CN, Sept. 20)

In the reflection, the student highlighted the community, friendship, and employment relationships as a way to explain away the idea of racism. The statement was equivalent to the often quoted statement 'I can't be racist because I have Black friends.' Another student provided reasons for how and why this test was a misrepresentation of them by creating a list of their multi-ethnic friend group. They wrote,

> My closest friend group is very diverse. They are Polish, German, Indian, Jordanian, Mexican, American, Filipino, and more. By no means, I am saying I'm not a racist. Everyone is racist at some point in time … In my area outside Chicago, there [were] all

> types of races/ethnicity and [it] were normal for me to be involved with many different people. (EB, Sept. 20)

The two reflections are centered on the idea that close proximity to BIPOC groups somehow exempts students from racism. For example, several racial and ethnic groups were highlighted as friends and listed as Polish, German, and American (i.e., white). In a dominant society, the term American is typically used to refer to white Americans. The people of color groups in the reflection were identified - Southeast Asian American, Latinx, etc., but Black or African American or the group indicated on the bias test was not listed in the reflection. For this student, being racist was also perceived as an action that everyone has at some point participated in but having friends from various ethnic backgrounds and environments minimize it. The next reflection, that student began by differentiating between the idea of being racist and the role and presence of implicit bias in friendships, work relationships, etc. The student wrote,

> As a white person … group bias and racism in general in the United States is absolutely a problem, and no matter how much the majority of us say "I'm not racist", there will always be an implicit bias there ... I work primarily with black people and the majority of people who played on my basketball team throughout my adolescent years were black. Even that unusual amount of exposure seemingly did little to hedge my development of implicit bias. (EQ, Sept. 20)

In these reflections, the idea of not being or feeling racists was for many students dependent upon community demographics and interactions. For example, if the community was too white, the lack of diversity served as the reason for test outcomes (i.e. the feeling of racism).

However, if a student had friends from varying racial and ethnic groups, they perceived being racist as impossible and subscribed to the idea that having Black friends exempts one from racism.

Is This A Game?

Many of the students that used their reflection writing as an opportunity to vent their frustrations about the implicit bias test. The frustrations were caused by the test design, response time, and student interpretation of test results. Students pointed out what they thought were flaws in the speed of the test by stating, “I don't think this test correctly reflects true feelings or how you really feel towards a race based on [the] speed of clicking or incorrect clicks. I can say I mainly messed up due to getting categories mixed up and don't think that should distinctively measure racial bias (CD, Sept. 20). Other students had a similar response “I do not agree with my answers to the implicit bias test… I feel like the only reason I got this was because I was trying to figure out which scenario lined up with which key to press, and it happened to be that the ones that took longer ended up making the end result being that I'm racist” (BK, Sept. 20).

Others referred to the test as a game designed to trick participants into specific responses. For this student, every aspect of this testing process was flawed and will not impact their perceptions and interactions with others stating:

> Honestly, it was a game. I was playing a button pressing game correlating categories to buttons. They swapped later from bad, white good, black to the opposite. This was after I was used to seeing the same images and practiced, so of course, [if] I’m going to score "better" in a word [then] maybe better is "quicker.” The data is so flawed because of this swap… Yeah, I am going to prefer my own race because I grew up only seeing 95%

> white people around me, and I have developed this sub-conscious preference supposedly. I'll buy into that, sure. Psychology stuff. This "preference" still holds little sway on how I feel about people. (AY, Sept. 20)

With very little positivity to report about the test and the suspicion surrounding the intentions of the test “Psychology Stuff,” this student displayed clear disregard for the test, but was adamant that the test results would not influence his relationship with people moving forward. This student was not alone in their level of frustration with the test. Another discussed their confusion and frustration by including even stronger use of language to clarify dissatisfaction by writing,

> I strongly disagree with the implicit bias test because questions were directed to confuse and drive people toward a conclusion which they may not have had an interest in. Traits the test were asking was blatant racism instead of systemic racism. Like calling someone a derogatory term vs examining how they would treat a customer of a different race. I BELIEVE THE EXAMINATION NO MATTER THE DIFFICULTY SHOULD BE CONDUCTED IN PERSON instead of a survey. I am a very just and equal [to] African Americans [and] Hispanics. I believe I view justice in the race view equally between colored and white, as well as strongly voice my educated opinion on economically justifying success (EM, Sept. 20).

The students shared their grievances and in this reflection believed an in person test that examined behavior would be a more effective assessment. However, one sentence later the student used the term “colored” to reference to African Americans and Hispanic people. Being informed about one’s bias and how they show up (e.g. language) can heighten awareness instead of declaring the test useless as referenced by one student. “I found these social justice warrior tests to be garbage and a waste of time. Stop trying to tell me how to think” (CJ, Sept. 20). The

language used to describe what students thought about the test was centered around them being forced or deceived into believing outcomes that simply were not present in their everyday lives. Though the criticism appeared to be aimed at overall test design, it was not explicitly stated but the underlying issue was with the results and the perceived interpretation by the students.

Implicit Bias Testing - Instructor Response

Before posting grades for the online learning modules, I sent Dr.'s Thomas and Goodwin an email detailing student performance. I provided them with statistics on student completion or partially recorded responses which had previously been an indication of a technology issue. I also informed them about student participation in activities, assignments, and reflections. For this week, I mentioned that "there was pushback by students as they shared their perspectives about implicit bias and the test" (Observation Journal, Sept 26). I concluded in the message a link inviting them to review student responses. Dr. Goodwin replied that this was a great opportunity for a "teachable moment and asked for guidance on a way to follow-up with students" (Observation Journal, Sept 26). I provided Dr. Goodwin with two articles that discussed the central idea of implicit biases and the correlation between the test students took. The articles also connected the work of health professionals with implicit bias and their role in maintaining health disparities.

During the class immediately following my email exchange with Dr. Goodwin and Thomas, Dr. Goodwin asked students "how many planned to attend professional school for the health profession?" (Observation Journal, Sept. 26) The majority of the class raised their hands. At this point, the instructor began sharing with the students the value of being able to work with all individuals stating "From a professional standpoint, learning to recognize the biases we bring

to our work is necessary. Positive patient interactions are necessary as we interact with those that may be different than us." He went on to conclude that "we all have some level of bias and recognizing our biases become essential in treating patients well. Empathy is not enough" (Observation Journal, Sept 26). Dr. Goodwin spoke about the importance of understanding biases for five minutes. He then transitioned into the introduction of the next topic.

Lived Experiences – Theme 2 Summary

The implicit bias test was for many students an opportunity to focus on their own social identities. This test resulted in students experiencing various emotions and feelings that produced anxiety, worry, frustration, anger, discomfort, and interest. Many of the emotions and ideas presented in the reflections were directly related to the test results. The students were not asked to specifically discuss their results; however, some begin to describe how they viewed themselves in light of the results. Some identified themselves as empathetic but used multiple standpoints for grounding empathy. One group described empathy as a space used where one's gendered experiences are compared to another person's racial experience. To view empathy in this way was to minimize the lived reality associated with different racial experiences. For example, the lack of access to health resources would not be a type of discrimination that white women could identify with, making it difficult to empathize with BIPOC based on the experience. On account that this is not an experience that they are familiar with it there is the possibility that it could easily be minimized or overlooked if perceived through their own experiences. The other empathetic group of students viewed empathy through a shared experience of discrimination. Empathy is putting yourself in someone else's shoes, so even if

the experiences were not shared empathy could occur. Each of the groups viewed their ideas as a form of empathy but only one group understood what it was like to walk in someone's shoes.

The phrase "not racists" was another term adopted by students to explain their test results. The test was not designed to measure the level of racism, but the level of implicit bias or preference of one race over the other. An explanation for why students were not racist rested on the ideas that they had Black friends, worked with Black people, judged everyone fairly, and did not view or notice an individual's skin color. For test results that reported some level of bias, they were explained by distance or proximity to BIPOC people or communities. For example, when estimating distance, students noted that because they grew up in all-white communities that were either absent of BIPOC or whose school had a small group of Black or Latinx students may account for any bias. Contrary, some students noted that close proximity to communities and people of BIPOC meant they were in fact not racist thus the testing data was inaccurate. In both cases, proximity was viewed as a cause for bias. Many of the students did not consider the test results to be a true representation of who they were and how they desired to live which resulted in some students pushing back on the reported outcomes of implicit bias.

Many students used their reflection as an opportunity to vent about the design and layout of the test. Some compared it to a game that used tricks to confuse test-takers. What was more interesting was the idea proposed that stated the implicit bias test results would not be acknowledged or considered moving forward. Because of the strong push back from this test, the instructor, during class, urged students to understand why it's important to be aware of and acknowledge implicit biases and therefore, take action to decrease said biases. The instructor communicated this strong message while also exclaiming that empathy is not enough. For many of these students, recognizing their lived experiences in this module is their starting point. Up

until this point, a student's cultural awareness and understanding has likely been largely dictated by their family, friends, community, etc. However, the implicit bias test and student reflections allowed students to recognize their identities, share their beliefs on how their identities were shaped, and communicate how they perceived the identities of others. For many students, this awareness of how social and cultural identities are perceived became a pivot point in how they would move forward.

Race Definition Interchange

The race definition interchange (RDI) occurred after students were informed about the role of race in health, science, and medicine. The RDI was, similar to the previous interchange. I designed a poll to measure how students individually viewed race based on its definition. The students received two definitions of race and were asked to select how they viewed the term from the lens of pre-health professionals. The first definition positioned race as biological, whereby distinct genetic or hereditary differences accounted for differences in traits such as disease, sexuality, athleticism, or mathematical ability. The second definition positioned race as being socially constructed or as a social system used to classify humans based on phenotypic characteristics such as skin color, hair texture, and bone structure. For the assessment, students were asked to select one of the definitions based on how they perceived the use of the idea.

The poll was used to assess how students were making meaning of the term race. In earlier online discussions, a few students associated disease with race as biological. For example, disease was viewed in association with an individual or group genetics and was the direct result of personal inaction and cultural choices. The goal of the assessment poll was to measure the perspectives of the entire class as a cultural group prior to completing the final online learning

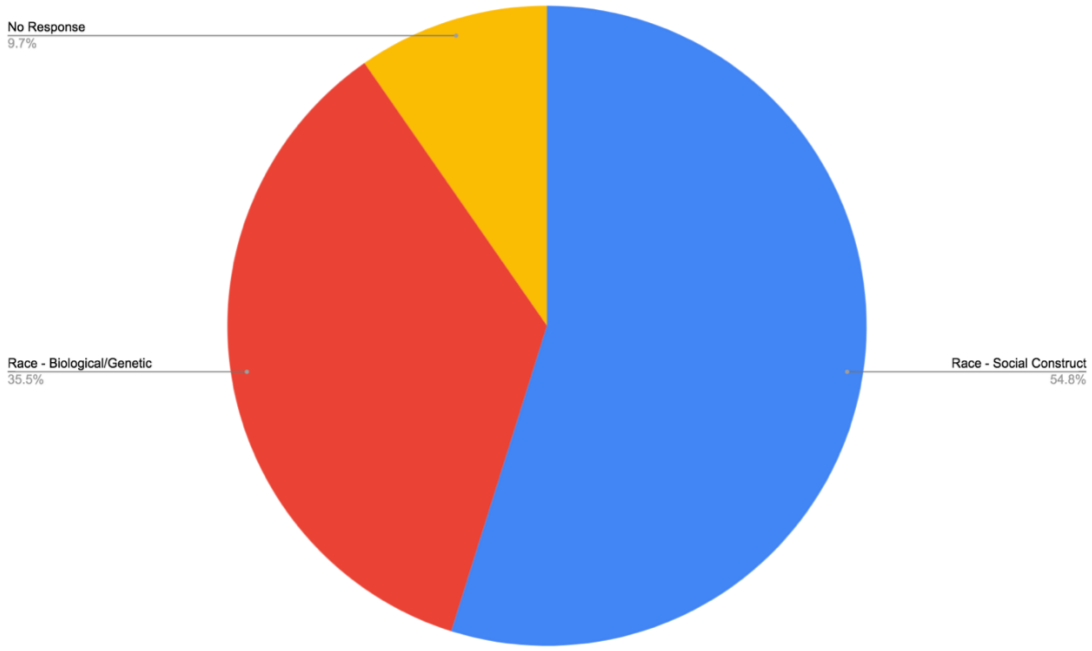


Figure 10 Race Definition Interchange

module. There were 124 students that participated in the module, but only 112 participants responded to the poll. Ten percent (10%), or twelve students, did not record a response nor did the students provide reasoning for not participating in the poll. Overall, the reported data showed that 55% of the students perceived the definition of race as socially constructed, while 36% perceived it as biological (Figure 8). How the definition of race is perceived by health and medical professionals can have negative implications. Race in health and medicine has been driven by genetic models that position race as biological and where the health of a population is determined by biology which has consistently been proven inaccurate (Roberts, 2011; Yudell et al, 2016). The differences in the perceptions of race have the capacity to dictate how race is viewed in relationship to disease and disparities.

Selecting the definition of race was conflicting for some students. Although they selected one of the choices they reflected on the idea that an accurate definition of race would include

both the social and biological because both can impact health. For example, one student said, “Honestly the question/poll on race and how I viewed it really got me thinking of what the right answer is if there is one. I never had viewed race as more of a social construct before today's lesson… learning about health disparities” (AV, November 22). The next student spent time clarifying why both definitions can be considered correct for defining race. This student also included the idea of cultural influences on disease outcomes.

> The difference between biological race vs social race is very interesting to me. I can see the argument both ways. Yes, race is biological. Different races carry different risks and [are] vulnerable to different diseases and illnesses. In the same way, where you live and your culture can look very different even if you share the same biological race. Culture has an impact on disease/illness too. Both views of race carry different perspectives but also affect health in different ways. I think both can define race, it's not either/or. (AN, Nov. 22)

The next reflection is perhaps the most intriguing argument about the definition of race. The student is specifically critical of the work of researchers that continue to push the idea of race as genetic. It was also used to center on resistance to race as a social construct.

> One thing I struggled to understand was why the [biological] construct of "race" continues to be prevalent in scientific publications if it has been established in scientific genetic studies that there are no significant differences between the DNA of various populations. For a field that prides itself on using research to establish certain truths, it seems odd that there appears to be so much resistance to this idea. Perhaps it is due to the way we have described different populations for so long that we no longer think twice

> when we use the word "race." This has been an entrenched idea for a very long time, so it will likely be very hard to correct. (CG, Nov. 22)

The interchange was a great way to assess how students were thinking about race in relationship to health and human disease. The polls data highlighted student understanding of race as a social construction where more than half identified that we are more alike than not alike. However, the true perspective of students was clarified in the reflections. Where student arguments became less about selecting either/or and centered the definitions around selecting both/and. They wanted to have the option to select both definitions because although race as a social construction was communicated well and possibly made sense, it has been long taught and is well known that different races carry different diseases. It was also noted that race as a social construction was viewed as new learning that needed to be further vetted and understood by students. Therefore, students grappled with whether to accept learning that was familiar versus committing to new learning. The interchange also provided a glimpse into how perceiving disease through a biological lens tends to center stereotypical behaviors that are associated with race and culture for justifying disproportionate disease outcomes. Each of these perspectives makes it difficult to recognize the role of systematic racism in perpetuating health disparities

Learning in Motion - Theme 3

Learning in Motion was the final theme and was designed to capture the movements and shifts that were taking shape within the group. These shifts captured the transition in student views of health disparities that extended beyond awareness. It’s a transition from static to progressive ideas and thoughts, that more dynamic in nature. Learning in motion was informed

by actions that were not specifically based on actions performed, but represented ideas, plans, and processes for moving forward. This theme was used to highlight students participation in collaborative learning with their peers.

The reflections in this section highlighted the shift in consciousness represented by the use of critical questions and ideas for eliminating disparities. Reflections were valuable for contributing to the theme and categories discussed in this section. There are four categories used to illuminate student thoughts that were presented with this theme that included: Collaborative learning, Using the language of inequality, A shift toward the critical, and Moving forward.

Collaborative Learning

The stigma board was the first opportunity for students to collaborate with each other for the online learning modules. The activity required students to post two stigmas associated with HIV/AIDS and included words or comments, images, and videos (Figure 9). Each post was uploaded as a 'posted-note' to a collaboration board for the entire class to review and give feedback by liking the post if they desired. At the conclusion of the module, students were prompted to reflect on their learning, discuss themes or content that they wanted to learn more about, discuss ideas that were powerful, or those they disagreed with. Of the many activities assigned across the modules, this collaborative activity was discussed most by students using the word "powerful". The term "powerful" was used to describe the impact of learning and used when writing about the commonalities among the stigmas posted. One student wrote,

> Something particularly powerful to me was the message board where everyone wrote a stigma commonly associated with HIV/AIDS… [that] was shocking to see the overlap in stigmas people wrote down and the common, disheartening themes that emerged. (BX, NOV. 1)

The power of the activity was also represented in the students' openness to share their knowledge for the sake of informing others. For this, a student wrote,

> The thing that was particularly powerful to me was the page of stigmas...it was interesting to read stigmas that I have not even heard of before. I think it is important to be educated, so [I] can fight these stigmas. (AZ, NOV. 1)

Reviewing the stigma board was viewed as enlightening and used as a resource for engaging in learning and teaching. Students reflected on the "powerful" nature of the stigma board as a space for not only sharing thoughts towards increased awareness but perceived it as a wake-up call to confront their own long-held beliefs about the topic. For example, one student stated, "I thought the information displayed on the stigma board was very interesting and powerful. I didn't realize all of the innate stereotypes that I was holding on to about those with HIV" (EC, NOV. 1). While this student interpreted the post as a call to action, other observations were framed as judgments about the ideas that were posted. For example, "something that was powerful to me was seeing the board and how badly people think of people with HIV… I was sad to see all the stigmas people believe" (BF, NOV. 1). The posts were not only a representation of personally held beliefs but ideas that should be talked about publicly. It was suggested that "the theme of stigmas was really powerful to me… there are still a lot of stigmas and bad thoughts associated with this [disease] around the world... that should be more talked about worldwide" (AS, NOV. 1). What made the posts "powerful" rested on the ideas that students felt they were being informed by the views openly shared by their classmates, and for many, the information presented caused them to confront their own stigmas. The collaboration board was a "powerful" resource for some and eye-opening experiences for others.

Figure 11 Collaboration Board

The stigma board was viewed as an opportunity to gain a glimpse of the experiences had by those impacted by the disease. One student wrote,

> I didn't realize how prevalent stigmas were towards HIV/AIDS. My grandfather passed away from AIDS and it hurt to think about the stigmas he had to deal with before passing. This just drives me more to end the stigma towards HIV/AIDS in everyday life. (ET, NOV. 1)

For this student, the mere thought of what their grandfather experienced was helping shape the direction of their future work. During this activity students became aware of the social impact

experienced by those with disease that could affected other areas of well-being. One stated, “The stigmatism board truly showed just how brutal the disease can be if you have it, not necessarily physically, but mentally and socially” (DK, NOV. 1). These experiences of oppression via stigmas challenge more than the physical, they tend to be emotional, psychological, and social attacks on the human spirit. Having an opportunity to observe the types of messages posted forced many students to envision their own verbal disregard for individuals with marginalized identities as stated in this reflection,

> The information on the board really opened my eyes on how ignorant I was, and that it's not okay to say things like that. I understand how difficult it is to be discriminated against because of my race and gender, so I understand that people living with HIV/AIDS go through discrimination as well. (BN, NOV. 1)

The board was perceived as a resource that provided insight, clarity, and highlighted desired growth in students learning as they moved forward. Lastly, the board was found to be “powerful” because it moved students to recognize the necessary actions needed to fight stigmas. One student wrote,

> I really enjoyed the stigma board. I think that was really an eye-opener at all the different stigmas that are out there, and how it is something that we really kind of overlook… but this speaks volumes on how we really need to step up education and advocacy for the issue. (DU, NOV. 1)

Education and advocacy were viewed as important components for eliminating stigmas and students recognized that it is very necessary.

> I didn't realize how many people know false information about this topic including myself… one thing that I think needs to be done is more advocacy for factual information

> about HIV. If more people know the real facts about how it spreads, who it affects, how to live with it, and more, then I think a lot of the stigmas will start to disappear. (CI, NOV. 1)

The board was described by students as being powerful, interesting, eye-opening, and a great visual for understanding all the stigmas individuals are impacted by when navigating disparities that center HIV/AIDS. The board also became the necessary guide for helping students identify the role of education and advocacy in minimizing stereotypes, stigmas, and ultimately disparities.

Using The Language

The learning modules highlighted the new words that were introduced and defined throughout the readings, videos, and activities. In the earlier modules, students described the terms, concepts, and ideas used in learning modules as foreign. In the later sections, students began incorporating the words and language of inequality into their reflections as a way to describe and discuss the various outcomes. There were many concepts and ideas used in the learning and one of the most popular words that students used to describe their desire to help was "advocate." The word was used in a matching activity and defined as 'to call out' or recommend for support. This word was adopted by students to describe how they desire to engage in the work of disparities. The words were represented in the following reflections by students,

> It is shocking to me that there is a stigma against the disease and how people feel negatively about having the disease due to discrimination. I think that it is important to advocate about the disease, educate, and report the facts about HIV/AIDS. (EY, NOV. 1)

> These are systemic factors that might prevent someone in poverty from ever reaching a financial state that allows them to have the proper access to care that they deserve...I aim to be a health professional who is a constant advocate for health and structural change. (DE, NOV. 1)

> It is easy for physicians to simply act if they are providing their best care, when really, they may be withholding life-saving care. I had always thought that doctors put their patients first, as much of society would believe... I am that much more motivated to make myself a better physician … and advocate for my patients and community. (CX, NOV. 1)

> As a healthcare professional, I think it's extremely important to try to advocate for getting rid of stigmas and treating everyone equally. (EW, NOV. 1)

Learning and using the language surrounding these topics of equity can also be interpreted by a student's willingness to recognize and acknowledge how language can contribute to inequalities or prevent taking action against them. For some, an increased understanding of promoting equity typically transitioned from the use of singular ideas to the recognition of self in the process. Students began making statements that represented their understanding of structural implications and their complicity via their attitudes and behaviors. One of the fundamental aspects of doing the work of eliminating disparities is recognizing our part in the work. For example,

> I have always put HIV at the back of my mind as something that was a joke, but after this module, I see that it's a large problem not only in our society but also in the world...I

> think just being more aware and ending these jokes is the first place I need to start in my own life. (DK, NOV. 1).

For many students this means recognizing that the fight may not always be physical or against others, but could literally be an internal struggle that takes consistent work like stated here,

> I found myself having many stigmas and even after going through the information still trying to fight against those thoughts in my head. This is something that is not going to fix itself in one day… I need to make sure that I am working on my mindset to combat these thoughts. (CL, NOV. 1)

A similar response suggested taking time to self-reflect and think about the impact on others by writing, "I need to think more about my own discriminatory tendencies… towards homosexuals and people living in poverty and be more open to people" (AJ, NOV. 1). For these students learning about health, disparities were expressed through words and the use of language acknowledging personal contributions. It was the learning process that led to the centering of the various expressions and ideas required for doing the work.

A Shift Towards The Critical

Students typically asked questions or made statements that represented a strong stance in their reflections, mostly when addressing ideas they struggled to understand. The questions that were presented in this final module tended to lean toward the critical side. One tool that was used to promote critical reflection was the posing of reflective questions. Reflective critical questions direct attention to power dynamics involved in various systems that maintain systemic inequity (Garcia et al., 2009). For example, questions centered on 'why' and 'how' as a reference point for addressing the delay, absence, or presence of learning pertaining to specific groups or historic

topics. The questions in this study referenced timing, intentions, and the institutional structures responsible. They also included space to explore how "knowledge is created and maintained by larger sociopolitical forces" (Garcia et al., 2009, p. 32). Student questions were directed at the educational institution that included when and how they selected certain topics. As students reflected on this topic, it became more and more difficult for them to comprehend the absence of such meaningful and historical content. Students began to question why,

> How is it that I had no idea about the extent of the study or the timeline surrounding it? It is hard to imagine that such a big part of history is not more well-known or discussed previously in school. It was also difficult to hear about. (BX, NOV. 22)

> How have I not heard about the Tuskegee Study before? I have always been aware of ethical decision making, so I was just "cringing" the entire time I was reading about it because it made me feel really bad. (DI, NOV. 22)

For these students, it was unclear as to whether learning these topics later in academia made it difficult to hear and accept or if knowing these topics have been intentionally left out their learning produced the response. Another student displayed feeling or anger as she addressed the magnitude of the topic and questioned the timing. The student was adamant about the idea that this learning should have occurred earlier in their academic journey stating,

> I really struggle with the fact that I hadn't heard about it until now and frankly that makes me angry. My experiences before college should have included learning about Tuskegee since it was such a monumental event that outlined and led to more health disparities. (BC, Nov. 22)

The student suggested the topic should have been learned earlier in their academic journey because it was perceived as a major contributor to the poor health outcomes witnessed today. However, for others, the questions were on centered the absence of historical content about BIPOC from course curriculums and textbooks. One participant wrote, “I wish I had learned about the Tuskegee experiment earlier. I feel like it’s something that can be learned from earlier and should be taught in a curriculum, maybe health class” (ED, NOV. 22). While health was the class of choice for one student, another student suggested a different course asking, “Why is this not in our history textbooks” (BN, NOV. 22)? The absence of this topic from teaching and learning, textbooks, and curriculums was a continuous thread throughout student final reflections, but the critical questioning did not stop here.

However, not all questions were designed to critically challenge the dominant ideas and thoughts underlying curriculums for health disparities but rather used to uphold them. One question was specifically used to target learning that occurred in previous courses which contradicts the learning in the modules that highlighted disproportionate health outcomes in BIPOC communities and the social impact of health disparities. The student wrote,

> My questions are why do we learn in class about how African Americans have a higher predisposition of having a cardiac disease? Why do we learn that Hispanics have a higher likelihood to have diabetes and be obese? Even in Kinesiology classes, this is what is taught, because that is the reality. We cannot take race completely out of the equation when giving a diagnosis because of the background that all races have experienced. These backgrounds could be due to disparities, but they are still true. So where is the line? When is it okay to go into a room with a patient and due to their race and their

> medical history assume they will have a higher disposition to a certain disease, and when is that judgment wrong due to bias. (EL, NOV. 22)

The student was seeking to understand these ideas based on the ideas of what is truth or reality. The student recognized a reality based on a partial truth that previously informed her learning. For example, accepting the idea that the high prevalence in these groups is due to their background (i.e. biological or genetics). This question was not designed to explore health disparities or how the content taught in the courses are used to maintain ideologies about race, genetics, and disease. The question the student asked was a rhetorical question designed to uphold the views inspired by dominant ideologies not challenge them.

Student questions surrounding learning and educational institutions continued to be under fire as expressions of disappointment and commitments to teaching began to surface. The institution's commitment was brought into question as some students insinuated that there was an intentional policing of learning content about specific groups. One student stated,

> I was not even aware of the Tuskegee experiments until I read the articles in this application. I'm highly upset, and I'm going to educate all of my younger siblings and family members because I know for a fact they are not learning this type of history of our people in schools. I'm truly upset...this is heartbreaking. (BN, NOV. 22)

There was a similar response from a student who asked,

> Why didn't I know about the Tuskegee Syphilis Study? … I was glad to learn about it and be educated on things that happened in the past, especially regarding African Americans [whose histories] are always swept under the rug and never brought up. (FD, NOV. 22)

It is very evident that both of the writers experienced the absence of content about the Black experience from educational content in previous courses as exemplified by explicit statements such as, “I know for a fact” and “that is always swept under the rug.” These are not ideas that are old and irrelevant to the work of understanding health disparities as one student wrote, “Issues in race are still a common issue in medicine and science today... learning more about disparities that exist in people's lives and how that intersects with the health disparities that they face” (DE, NOV. 22). These students were very intentional to write about the erasure of the Black experience from curriculums as well as the frustrations and disconnect associated with the unethical issues that have and continue to impact their health.

Moving Forward

Moving forward was used to capture student sentiments for ways they would advance or be guided in the work of health disparities following their learning. Moving forward were the ideas and actions that centered plans to improve their learning, connect with others, and come up with future plans when working as health professionals. Many of the plans discussed were based on what the student thought to be reasonable plans of action. There were students that used their reflections to clarify plans to not move forward in learning about health disparities or propose actions for eliminating them.

Learning. The desire to move forward in learning was well represented in student reflections. There were some who committed to learning the deep cultural impact of health disparities. For example, one stated, “Understanding the core of the disparities is important moving forward and I can gain a better wealth of knowledge to learn how to aid in eliminating

health disparities" (DE, NOV. 22). While another wrote to advance personal learning they would become more informed about "preventative programs and organizations … to realize just how important it is to fully understand the effects of health disparities on our world" (CU, NOV. 22). Moving forward in learning also meant committing to understanding the historical factors that have contributed to disparities and the work of the organizations that have committed to preventing them.

Adopting a critical lens for viewing the world and their work was another perspective that students recommended for moving their learning forward. One stated, "I am interested in looking at things more critically and examining the claims that certain races are more predisposed to illnesses" (BX, NOV. 22). On a similar note, another student suggested that part of being critical is adopting the understanding that all researchers bring a specific world view to their work. They wrote, "I hope to be more critical of scientific publications involving "race" and genetics… as scientists are humans, and they will all have their own biases and preconceived notions" (CG, NOV. 22). Choosing to see the world through a critical lens has the capacity to expand one's commitment towards increasing the level of awareness and consciousness. For example, in this reflection learning was the equivalent of consciousness whereby a student writes, "learning for me is being conscious of the importance and severity of this [health disparity] problem we have today in the medical world" (DY, NOV. 22).

> It was also understood that being conscious also required empathy on their part stating, I had to take a step back and walk in someone else's shoes... to advance my personal learning, understanding and listening fully to a problem [is required] to take the correct steps to act upon it. (CC, NOV. 22)

For these students, being intentional in their efforts to gain an understanding of those impacted by health disparities is needed to help ensure the appropriate actions are taken. Being conscious was the one thing one student felt could be done at this time while taking into account the current environment. They suggested,

> The simple fact that I am a Caucasian male going to school in Iowa, the ethical and moral dilemma of race and social constructions aren't discussed... The only thing that I can do is to learn to be consciously aware of the moral and ethical gray area that [exists]. (CQ, NOV. 22)

The learning modules provided students the space to think about how they would be a part of the change and making commitments to moving forward.

Make Connections. As students advanced in learning, this also increased their desire to make connections and seek mentorship with others as a way to explore topics surrounding health disparities. Students found that engaging in learning with those from different areas of study and racial identities helped to advance learning. One student wrote,

> I hope to continue to advance my personal learning through engaging in conversation with peers both within and outside of my major. This will help expand upon my knowledge, as well as engage and share it with others [and] hopefully learn more about others' experiences from non-white heritages. (AX, NOV. 22)

According to the above student, these interactions are used to increase knowledge and challenge the dominant uses of language and ways of thinking about others. In this reflection, the student used the term “non-white” heritages to describe individuals from races and cultures that do not identify with the dominant white culture. It is a phrase that minimizes the identity of others and it

fails to acknowledge the identities used to marginalize them based on race and culture. The term references these individuals by who they are not instead of who they are. For example, it would be better to say, “Black, Latino, and Native American individuals.” For this student, collaborating with other students could be beneficial for growth and development in becoming consciousness as they move forward in their learning.

The idea of mentorship was another opportunity that students recommended for increasing their understanding of disparities in the different areas of healthcare. One student wrote,

> I absolutely am going to look towards different ways through [social] media and through discussing with different [university] faculty and faculty at my future physician assistant program to explore this topic of racial bias in care. (EQ, NOV. 22)

The student desired to take a deeper dive into health disparity learning by connecting via social media to experts that are advancing the work of health equity. Connecting via social media was introduced in the learning modules. Students were provided twitter pages for various organizations and individuals to easily access up to date information about health disparities. These links were provided as a way to inform students that the organization or professionals they connect with, can impact the type of learning they receive. For example, there are not many faculty and researchers that engage in the work of health disparities using critical consciousness in undergraduate teaching and learning. Therefore, if students connect with faculty that are not engaged in health disparities work it will only reproduce knowledge that perpetuates disparities.

Professional Status. Students addressed using the knowledge gained from the learning modules as a guide or starting point for consciously looking for ways to address health disparities in their work as professionals moving forward. There were not many explicit steps

listed for how it would be implemented. However, they did share ideas and promises about learning as they move forward for eliminating health disparities. One student began by discussing their frustrations with the current state of the profession then addressed their future plans by stating,

> It is frustrating wanting to go into a medical profession knowing how many issues there are in our healthcare system. There is no easy fix and each day we have to struggle to make it a little better. Going forward I just want to keep fighting for those people who face health disparities and make sure that everyone is getting the proper health care they need no matter what. (EW, NOV. 22)

This wasn't the only student desiring to provide equitable health to people. Another student wrote,

> It was hard for me to imagine that people would treat others in the way the African American males were treated by medical professionals. Moving forward, I am going to be extra conscious of how I treat others and make sure that everyone gets the care and attention they deserve equally. (DX, NOV. 22)

The desire to be conscious and provide adequate care was a major idea expressed for helping BIPOC communities. Students also discussed being eager to provide the best treatments and care to all writing,

> There's a lot to take into account from this lesson but the biggest thing for me is to make sure when I am working with patients, to inform them of all available treatment options. Help them decide what to do and what is best for them, regardless of their race. (DK, NOV. 22)

Providing fair health to all was also the desire of the next student, but to do that would mean to understanding how language use can result in perspectives and ideas that are problematic. For example,

> Being an individual going into the medical field, I plan to focus on pushing fair health care for everyone and breaking down the health disparities, and focusing on the job itself in order to help slowly push out the unfair beliefs and treatments against those who may be outside the "norm." (EP, NOV. 22)

The students action plan moving forward was great for acknowledging inequality and doing something to change it. However, there is a need to continually reflect and be in dialogue with others for cultivating these ideas and for learning the ways BIPOC are perceived on a deeper level because to view them as “outside the norm” is very contradictory to their earlier ideas. Lastly, one student discussed the desire to risk their reputation to speak against structural inequities in health writing,

> I think that medical professionals are afraid to speak up about structural health issues because they do not want to face the criticism and have their reputation ruined by people who do not share the same belief… I really thought this was interesting because I think the same thing and I thought I was doing everything I could, but there is so much more I will do in my career. (AK, NOV. 22)

The ideas that students suggested for moving forward in their approach for eliminating health disparities were tended to be prompted by content from the online learning modules. Students were eager to reflect on and share the many ways they were informed about and willing to become active participants in the elimination of health disparities.

In reflections for moving forward, there were many students that found the online learning modules to be useful resources that could easily be adapted for guiding their work as professionals and others that did not. In providing perspective for not moving forward in learning or addressing health disparities one student wrote, “I don't plan on looking too much more into this honestly, because it doesn't affect me, but maybe that is more of the reason why the problem persists” (EZ, NOV.). This student was not ignorant of the consequences that could possibly result from inaction as they continue their learning but decided not to get involved with the issue was the best course of action. Another student took this idea further by suggesting health disparities are far from truth and reality. They wrote,

> People are so sensitive to actual racial differences that they make mountains out of molehills and claim that science and medicine are racist. Just because a certain race is more susceptible to a certain disease, like black people with sickle cell anemia, doesn't mean that medicine is racist. There is no need to learn more [about this topic], medicine is there to treat a disease, that's it. (CJ, NOV. 22)

According to this student health and disease is genetic and a biological construct -not racists. Therefore, the health disparities learning resources are not needed for ensuring equitable access, treatment, or policies for BIPOC. Some students also explicitly expressed that they would not seek to participate in continued learning, despite understanding how the problem is perpetuated by health professionals. Learning was devalued as some was content with ignoring outcomes associated with health disparities or had determined them to be exaggerated realities. Despite this, there were many in the class who thought it was beneficial to move forward in their learning that they might be able to contribute to eliminating disparities in some way.

Learning in Motion Summary

This section of the course modules assisted in moving students forward in their learning. Students were experiencing learning that increased their curiosity over 12 weeks of the semester as they became more aware of health disparities and were provided a significant number of opportunities to reflect on their learning. Participation in the final modules was accompanied by shifts in ideas, tone, and language used while reflecting on issues and topics represented in the modules. The shifts began to take shape as students reflected on their behaviors or in what they do. This was clearly seen as students began to collaborate and construct knowledge together. In these activities, students were able to visually take in and contribute to the activity board as they discussed the reality behind how society thinks about and treats those with certain diseases. The students acknowledged that the activity board was a space where they could observe the harsh realities associated with the physical, emotional, and psychological oppression experienced by people as a result of their own behaviors (i.e. jokes and poor treatment). For many students taking the time to see and understand the experiences positioned them to recognize the impact of oppression. Students began to understand that intentions are not always equivalent to impact, meaning certain words and treatment have the capacity to cause harm despite one's intentions. Learning collaboratively sets them up to learn about inequities caused by various stigmas and to fight by acknowledging and changing their own behaviors and language.

Language use was another shift in student reflections. Here, students began to center their ideas on the actions required of them for ensuring that changes towards the improvements in health disparities would occur. As students addressed these issues in their reflections, they simultaneously began using the terms associated with social aspects of learning and language that were referenced as confusing and foreign in earlier learning modules. This included terms

such as inequities, advocate, or advocacy. In their reflections, students discussed the various ways in which they would advocate for the communities that are overwhelmingly impacted by health disparities. This was for many of them their way of acknowledging that they could do something to minimize the impact as white and middle-class students that do not identify with the groups most impacted by disparities. Taking on this advocacy role could be viewed as an opportunity for students to leverage their privilege by speaking up or taking action to eliminate health disparities. Adopting the language was an important step as students move forward in learning.

Lastly, as a group, the students began to address their ideas and beliefs about the realities that existed in courses and how they could best move forward in ensuring their engagement with health disparities continued. In this work, students highlighted the importance of using a critical approach for digging deeper to understand teaching and learning they ascribed to health disparities because they believed this was a topic that should have been taught earlier in their academic learning. For them, this aspect of learning was an important part of history that could have possibly contributed to the present differences observed in health and disease outcomes. They critically questioned teaching and learning they believed was intentionally hidden, policed, and ignored as related to the history of Black people in the United States. While some students used their questions to critically question and challenge the power structures that determined what should be taught in courses, others used their questions to defend them. Learning for many students was bound by ideas for using approaches that were critical, espoused consciousness, and embraced being intentional to ensure appropriate outcomes. While others were content with ignoring outcomes associated with health disparities or determining them to be exaggerated realities

Post Survey

During weeks 14-16 of the course, students received a link for the post-survey (Appendix D) and was asked to complete by the end of the course. As with the pre-survey, student participation was completely voluntary. There were a total of 65 students that completed the post-survey which was 10 less than those that participated in the pre-survey (Figure 7). Sixty-three of the participants noted that they participated in the pre-survey and only two reported that they did not. For the demographic data, there were 10 fewer white male participants to complete the survey; this information was derived from the race and ethnicity categories on the pre and post surveys. All other categories remained fairly similar to the pre-survey.

In the post-survey students provided views on the health disparities learning modules. The questions addressing teaching and learning about the modules centered on specific concepts associated with critical consciousness. For example, participants were asked if the health disparities learning modules deepened their level of awareness (77%), increased their understanding of contributors and consequences of health disparities (78%), or provided space for self-reflection (74%). The students overwhelmingly perceived the learning modules as space where they were able to increase their understanding of and reflect on health disparities. After comparing the outcomes from the pre-survey, student responses for understanding and interpreting the meaning of the term health disparities increased from 75% to 95% for the post-survey. The post-survey also asked students about their thoughts on the topic of health disparities and their preparation as pre-health professionals. Ninety-five percent of the survey participants implied that learning about health disparities in this course went hand in hand with learning about human disease and 71% stated that the modules increased their level of engagement in the course. According to the survey 87% of the participants suggested health disparities was

definitely a topic that should be learned earlier in their undergraduate programs and a topic that they (77%) will continue to explore as they prepare for their careers in the health and medical professions.

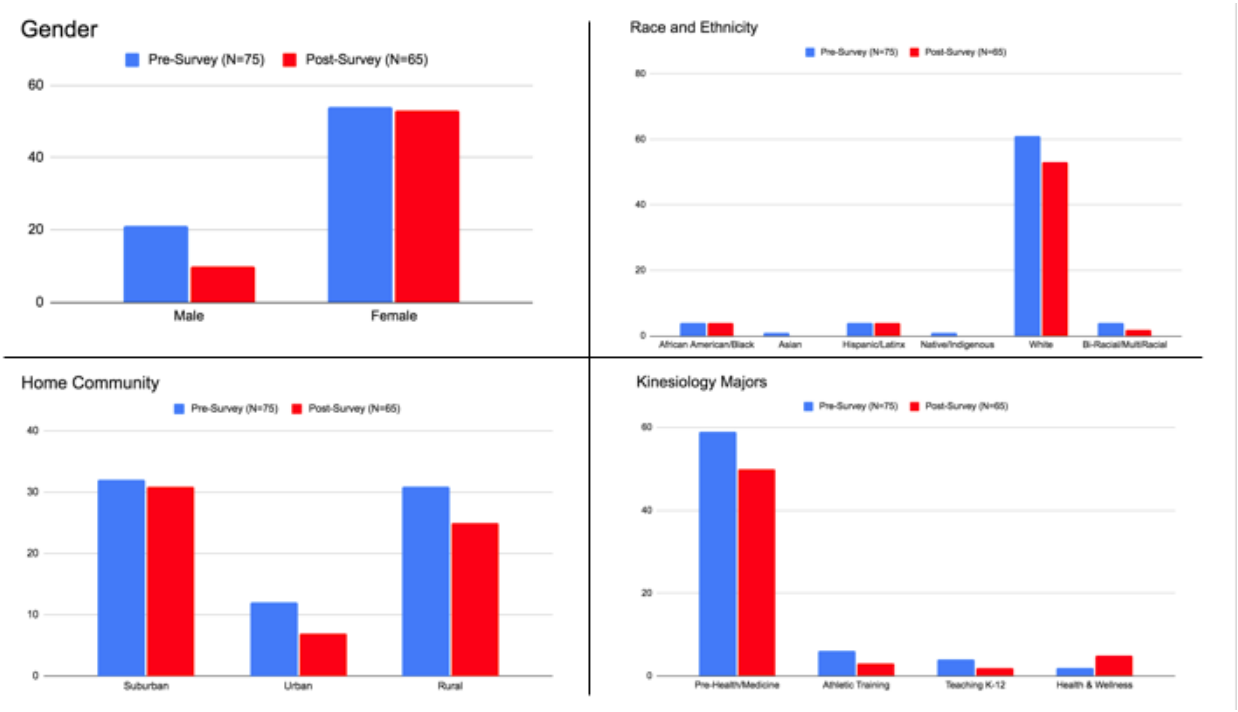


Figure 12 Post-Survey Demographics

Chapter Summary

The data analysis and interpretation presented in this chapter resulted from two research questions presented in chapter 1. In the analysis I clearly revealed that when students are provided the space to learn about health disparities that explore their critical consciousness their level of awareness and understanding of those impacted by health disparities increased. Moving forward students are able to utilize the strategies and the available learning resources to assist them in "reading the world" (Freire, 2005 p. 26). I also analyzed student reflections both

individually and collectively for improvements in critical consciousness development across the learning modules. In the coming chapter, I will provide a detailed discussion of the findings.

CHAPTER 5. GENERAL DISCUSSION

In this chapter, I discuss the findings of this ethnographic case study for embedding health disparity curriculum into an undergraduate human disease course. In doing so, I have highlighted the ways my research connects to the literature for the foundations of education, and health disparities, and critical consciousness. Additionally, I will discuss the three themes and research questions resulting from my investigation. Lastly, I will discuss the implications, limitations, and recommendations for future research.

Theoretical Significance

Health disparities are disproportionate differences in health prevalence, outcomes, and mortality between groups who are socially, economically, and environmentally disadvantaged (Braveman, 2012). The premise for this research was based on the assumption that topics related to health disparities and the populations impacted are scarcely represented in undergraduate curriculums. In previous studies, health disparities curriculums that were implemented into undergraduate courses reported increases in student knowledge and awareness and an increase in student motivation for careers that target disparities (Benabentos, et al., 2014; Njoku, 2018). These studies did not assess student learning beyond awareness, nor did they use the lens of critical theory for addressing the social, economic, and political inequalities surrounding health. In this study, the health disparities curriculum was implemented using critical consciousness as a theoretical framework for assessing development beyond awareness to reflect all forms of inequality and how such learning translated into action or change. Overall, this study explored the various ways students (many for the first time) experienced and engaged with health disparity topics.The study was organized around two research questions:

1. How do pre-health professionals navigate their learning of health disparities through the course curriculum?

2. How do health disparities curriculums guide students in the development of critical consciousness?
    a. How do health disparities curriculums support the development of knowledge and awareness?

    b. How do health disparities curriculums support the development of self-reflection?

The research questions were designed to provide insight into the usefulness of implementing health disparities into the curriculum. From this, the findings revealed that students explored health disparity learning by gaining new perspectives, challenging ideas, and confronting inequality. In the coming section, I will connect my research findings to the literature and highlight how ideas associated with the hidden curriculum showed up in student reflections. I will also discuss how the core attributes for developing critical consciousness were used to enhance the health disparities curriculum. The curriculum design strategies and ideas used in this study could serve as a prototype for embedding health disparity topics into undergraduate courses.

Foundations of Education - Hidden Curriculum

The hidden curriculum as represented in student written reflections clearly highlight how racial ideologies around race and disease are reproduced. They represented ideas or long held assumptions about BIPOC communities that have not been explicitly taught in courses or by instructors but through the hidden curriculum have become knowledge that has been maintained across decades. In health and medicine these ideas are rooted in attributing disease to genetic or biologic predispositions based on race. The hidden curriculum is identified as omissions of learning that are intentionally or unintentionally absent from the student's "intellectual

repertoire" (Milner, 2017; Eisner, 1994, p. 107). In this study, the hidden curriculum was illuminated as students grappled with race and disease as a biologic and genetic factor or social and institutional factor.

The hidden curriculum showed up in three areas: student personal reflections, group discussion board, and learning resources. The students used personal reflections (i.e. debriefings) to formulate and express their own thoughts and ideas (Gay, Kirkland, 2003) about the health disparity learning modules. For example, some students expressed race as a factor for diagnosing and understanding disease. One student wrote, "We cannot take race completely out of the equation when giving a diagnosis [for disease]" (EL, NOV. 22) or "Just because a certain race is more susceptible to a certain disease, like black people with sickle cell anemia, doesn't mean that medicine is racist" (CJ, NOV. 22). These reflections not only highlighted how these students were aligning themselves with dominant social ideologies pushed via the hidden curriculum to defend their ideas but they were also reproducing these ideas. The student statements were in response to the health disparity curriculum and points to how the learning challenged their normal ways of thinking.

The concept of hidden curriculum was also identified in the group discussion board where a question was posted about cancer and death outcomes in Black women. Students that took part in the discussion responded by aligning their stance from a social perspective that centered access, insurance, and treatment. The others argued that disease stems from differences in genetics or a biology. The latter represent ideas that are not uncommon among dominant identity groups preparing for careers in health and medicine (Hoffman, et al, 2016). Racialized medicine and science have been a central part of the health care profession and used to evaluate disease outcomes in BIPOC communities in the U.S. (Byrd & Clayton, 2000; Ripp & Braun, 2017). To add to the discussion, students attached resources from respected journals or websites

that supported their position. For example, the "[XYZ] cancer center reported black women have different biology in the cells of their breast...I would definitely say that the differences in African-American women's biology play an important factor" (AJ, Sept. 13). According to researchers, the hidden curriculum is not explicitly written into the course curriculum, but associated ideas are deeply embedded and supported by institutions, instructors, and research journals (Gaufberg, et.al., 2010; Yudell et al. 2016). The hidden curriculum emerged in multiple ways this study, but they did not go unchallenged.

In this research, student perceptions that aligned with ideological perspectives about race via the hidden curriculum was challenged by the curriculum which led to them publicly expressing these tensions. Then the ideas were confronted and supported on the discussion board by peers. For example, in response to the original post it was stated, "you can't overlook that [in] diagnosis and care, there are also health disparities. But I don't think there is an actual cause in "genetic differences in tumors" [when] comparing black and white women" (BV, Sept. 13). The ideologies associated with BIPOC and disease are reproduced using the hidden curriculum and because they are so deeply rooted in how students view BIPOC communities, seeking to eliminate them cannot be the goal. The aim is to re-shape the curriculums to confront the hidden curriculum which may prove to be more effective (Chaung, et al., 2010). This study was designed to reshape the curriculum to help undergraduate students who are for the first time (about 51%) engaging with learning that addresses the social impact of health disparities.

Strategies For Implementing Health Disparity and Critical Consciousness

The health disparities curriculum using CC was designed to contend with unexamined assumptions, stereotypes, and implicit biases that have been used to foster oppression and inequitable health outcomes. Halman et al. (2017) listed five core attributes for implementing

critical consciousness into learning: appreciating context in education and practice, illuminating power structures, moving beyond the procedural, promoting, enacting reflection, and social justice and equity. I will discuss how two of them - illuminating power structures and moving beyond the procedural showed up in this study.

Illuminating Power Structures

Power structures serve to affirm or impose dominant perspectives that center dominant cultural values and interests as the norm (Sensoy & DiAngelo, 2017; McLaren, 2002). In designing the modules for teaching health disparity, I purposely and explicitly center power. The learning resources were used to highlight how it shows up in the treatment and care of health professionals. Halman et al., (2017) suggests "illuminating power structures by addressing the theoretical and practical aspects of CC. To do this a student activity was selected to emphasize how dominant perspectives for defining race is used to illuminate power and how it is socially and historically constructed. The Race Definition Interchange (Figure 8) was used to evaluate the definition of race and how it is perceived by students. The RDI results for this measure showed a large majority (55%) of the student's defined race as a social construction while the other students (36%) defined it as a biological construct or choose (9%) to not respond. If curriculums fail to challenge the meaning society attributes to race for perpetuating health inequities, they will continue to reproduce these same power structures.

To view race as a biological construct is to suggest different races possess biological traits that determine their appearance, intellect, moral character, and susceptibility to disease. This way of thinking is problematic at best and harmful at worst (Byrd & Clayton, 2000; Lombardo & Dorr 2006; Yudell et al., 2016). Although a large majority of the students defined race as a social construct, some were not completely sold on the idea. For example one student

wrote, “Honestly the question/poll on race and how I viewed it really got me thinking of what the right answer is if there is one. I never had viewed race as more of a social construct before today's lesson” (AV, November 22). In this activity, I highlighted the definition of race as a power structure. Highlighting the differences between the two terms was essential for guiding students towards the present tensions that exist for understanding a definition of race that countered their previously held views. For example, “I never had viewed race as more of a social construct before today's lesson… learning about health disparities” (AV, November 22). Some students discussed the social aspect of race as a new concept while others did not realize race can be viewed in multiple ways.

> The simple fact that I am a Caucasian male going to school in XYZ, the ethical and moral dilemma of race and social constructions aren't discussed... The only thing that I can do is to learn to be consciously aware of the moral and ethical gray area that [exists] (CQ, NOV. 22).

As students grappled with the definitions of race, it was unclear which of the definitions they chose for the activity especially, the students who wanted the option to select both. Illuminating the definition of race as a biological construct holds negative implications that contribute to and reproduce views that result in health disparities as students transition into professional roles (Olsen, 2019; Tsai, 2016). Also, learning to challenge ideological perspectives now “plays a critical role in shaping one’s professional identity” (Chuang, et al., 2010, p.316; Halman et al., 2017). By assessing what students know and what they do can help determine the design of future learning modules, but more importantly illuminating power structures in curriculums increase awareness of inequality and opportunities to fully explore the concepts.

Moving Beyond The Procedural

The idea of using CC for moving beyond the procedural is a representation of Freire's (1970) work for transitioning from banking education (instrument of oppression) to a problem-posing education (instrument of liberation and emancipation). The banking model represents the knowledge that is deposited, received, and repeated by passive learners who have minimal consciousness and curiosity for the learning (Freire, 2005; Halman et al., 2017). This model is commonly used in teaching and learning for depositing information and over the course of this study, I observed glimpses of banking education. For example, as student highlighted the initial interactions for learning topics but they displayed a lack of interest in exploring the content for deeper understanding. For example, "I never have thought much about the restrictions others face and how challenging it can be for them to receive good health" (FF, Sept. 5) or "I don't think about the health disparities felt by minorities" (EA, Sept. 5). These responses support the banking model of education where a student's knowledge is limited by the information that was previously deposited. The more students consume deposited knowledge without questioning, the less they develop consciousness and curiosity.

A negative aspect of banking education is that it never prepared students to critically consider the multiple realities that exist in the world. For example, students were unfamiliar with health disparities but clearly understood the BIPOC groups that were commonly impacted by them. According to Freire (1974), "there is no such thing as absolute ignorance or absolute wisdom" (p. 39). Which means, students understood who was impacted by disparities, but ignored or did not explore how they knew. One student stated, "I have always had a basic idea that people who live in low-income neighborhoods and people who experience discrimination" (CN, Sept. 5) or "I learned that health disparities affect more communities than the ones I had originally envisioned which were race and income" (FB, Sept. 5). Not having the opportunity to

explore knowledge stifles curiosity resulting in limited insight, minimal desire to question, critique, and evaluate learning (Halman et al., 2017; Jemal, 2018). Conversely, when students engage using problem-posing education, it ignites curiosity.

It is curiosity that leads to developing better comprehension and understanding of content (Freire, 2005, 2008). Curiosity makes learning more effective and enjoyable and creates opportunities for students to shape new perspectives. In this study, I challenged students to move away from procedural and transactional learning. I crafted learning modules specifically designed to tap into their curiosities about the content and encourage them to deeply explore and consciously engage with the content. Curiosity is used to guide students beyond banking to problem-posing education (Freire, 2008). My use of strategies from problem-posing education guided students in reflecting more on what they were learning or not understanding. For one student, this strategy proved beneficial. The student noted, “I had to take a step back and walk in someone else's shoes... to advance my personal learning, understanding and listening fully to a problem [is required] to take the correct steps to act upon it” (CC, NOV. 22). Problem posing education guiding student learning while also allowing them to develop at their own pace and critically explore concepts based on the realities of themselves and others.

Questions and Themes

Themes and research questions were generated through multiple rounds of coding student data which provided the analysis and interpretation for how students explored the health disparities curriculum. In this section, I will address the first question, “How do students navigate the health disparities learning modules?”, by focusing on the themes: Eye Opening Experience, Lived Experiences, and Learning in Motion. The first theme, Eye Opening Experience, represented the ideas of students as they were becoming aware of curious about

health disparity topics. The second theme, lived experiences, described the ways students positioned themselves in the world based on how they experienced it. Learning in motion was the third theme and was characterized by the students journey towards consciousness.

Eye Opening Experience

The first theme, Eye Opening Experience, represented student engagement as novice learners, becoming conscious, or experiencing an awakening or curiosity about health disparity topics. In this theme, the overall conversation centered on identifying who was responsible for eliminating health disparities. Did it belong to the individual, the practitioner, the institution, or the government? Students reflected on this idea in some capacity or another in each of the categories within the theme. However, there was one person that was not identified within the complexities of this idea for who's responsible for eliminating health disparities – the students did not consider themselves.

Placing the responsibility for eliminating health disparities on the individual is where the responsibility always lands. Despite disparities being a complex issue to solve, it was often reduced to a single root cause like increasing physical activity and exercise levels or improving nutritional habits. There were also moments where students compared their experiences growing up white to help them understand the differences in outcomes for BIPOC communities. These comparisons of health treatment and care based on racial identity helped them grapple with the reality and privileges associated with having a white racial identity. Many of the privileges were associated with never having to think about or experience disparities because health was viewed as the "norm", "lucky" to have access to appropriate medical treatment, or having parents that trained them to be healthy from youth. Whereas the lives of those impacted by disparities were perceived as something other than the norm or lucky.

There was something else happening in this theme, students had come to identify the responsibility and roles of the government and professional for eliminating disparities. The role of the government was limited to financial resources that centered on available resources and high spending but poor outcomes. While the health and medical professionals were responsible for the practical components such as adopting the language of inequality, avoiding or preventing disparities in their individual work. Despite identifying the roles other entities, students had not come to understand their role. They did however express a desire to help eliminate disparities. In this theme, I witnessed students coming into a knowledge of various institutions and organizations that could impact and play a role in preventing health disparities as well as their development of new perspectives about health disparities.

Students navigated Eye Opening Experience as new perspectives for engaging with the learning modules. These new perspectives were essential in helping students grapple with ideas surrounding disparities that assisted in shifting their understanding for who was responsible for eliminating them. Responsibility shifted from individuals to system or patient to provider for confronting social attitudes and inequities (Cohn 2019, Burgess, 2011). As a result students embraced new perspectives such as provider as responsible for eliminating health disparities- stating, " the higher-ups in the healthcare field- It was on them to realize these problems exist and find ways to make large scale changes that recommended, " if these problems are avoidable then they need to make the right moves so it never happens again" (FA, Sept. 8).

The theme Eye Opening Experience theme also represented how students gained an understanding for how other structures and policies within health contributed to disparities in health. For example, one student wrote, "the different factors within the health field, both in the treatment of patients and also systematic policies tend to cause differences in patient outcomes" (BO, Sept. 8). According to Burgess (2011), shifting the focus from persons race to societal

racism, result in positive shifts in treatment outcomes for BIPOC groups. Despite these Eye Opening Experiences some students did not struggle to place the responsibility of eliminating health disparities squarely on the shoulders of those impacted by them. From their understanding the sole responsibility fell to the individual which in turn would eliminate health disparities.

Students also adopted new perspectives about topics such as health and disease outcomes for which they previously had little understanding. These new perspectives were in response to the health disparity modules (i.e. readings, videos, and activities). They expressed statements like "I don't understand how…" (DE, Sept 8) or "I understand inequality but, I don't understand how that could happen" (AC, Sept 8). Having their eyes opened to unethical and inequitable treatment BIPOC communities guided them in connecting the historic and current context. For example, "Even in today's society, there is still racism in healthcare… I think as a society we need to learn from our mistakes in order to move forward" (EK, Sept. 8). Making these connections helped students identify how the past impacts current context. Eye Opening Experiences were reported across all four modules and were viewed as ah-ha moments, moments connections were made, ideas were expanded, and/or learning about health disparities increased.

Lived Experiences

Lived Experiences were discussed in theme 2 of the findings and it represented the ways students positioned themselves in the world in relation to their learning about health disparities and how they were making sense of it. The lived experiences theme highlighted students grappling with the results of their implicit bias test and especially how they have come to know and perceive BIPOC communities. In this theme, students also came to recognize the influence of their parents, communities, and the larger society in shaping how they viewed BIPOC communities and social inequalities. Up until this point, students had not deeply reflected on

their own perceptions about race. However, the ideas held were not isolated from dominant beliefs, values, or removed from dominant ideologies (Kincheloe, et al., 2011). Students noticed the ideas they held were the ideas they received from the world around them which included the predominantly white institution (PWI) they attended as students. For example,

> I was exposed to a lot of diversity in school and never felt like I was biased towards people [of color] at all… I think the messages I receive from society and those around me have impacted me more than I expected. Subconsciously, perhaps I am internalizing the discriminatory beliefs that circulate [in] America (BX, Sept. 20).

Students observed how socialization occurs and can go undetected within their families and the communities that raised them. For example,

> I think that a lot of times I don't even realize that I do have biases against other groups of people, but that they are deeply ingrained in my brain because of years and years of stereotypes being presented to me regarding other races (EC, Sept. 20).

The implicit bias test was used to highlight the presence of unconscious bias toward BIPOC communities, it was also designed to connect students to their own lived experiences and stories. As students began to understand the ways they have been socialized to think about race they connected them to lived experiences by telling short stories.

During this study, students shared short stories and each of the stories provided a glimpse into the students' world and was used to insert themselves into the learning experience. Shared stories are a common practice in participating in critical practices and actions (Halman et al., 2017). Based on the findings, student used stories to describe how disparities impacted their families, communities and friends. Short stories were also used to highlight empathy and but expressed through the lens of those that identified as white women or biracial or multiethnic individuals. In these stories empathy fueled connection that occurred when an individual was

able to understand and share their feelings by drawing on a similar feeling, not a specific event or circumstance (Brown, 2012). In this study, empathy was discussed in response to the implicit bias test to draw a connection between a student's own personal experience of bias or discrimination to that of BIPOC (specifically Black people). In each of the stories presented, individuals shared their experiences growing up in an all-white community.

The stories presented empathy from multiple perspectives. One story focused on a desire to be empathetic based on bias experienced as a white woman stating- "I think I can slightly empathize with the stigmas and stereotypes they [Black people] face" (AX, Sept, 20). Another student highlighted empathy as rooted in similar lived experiences – "I grew up in a predominantly white neighborhood and predominantly white schools. I know how to deal with prejudice and discrimination from white people and I also empathize with black people because we go through similar things" (DH, Sept. 20). The latter group discussed "having compassion for" or "being in solidarity with" Black people as a result of their own experiences. Empathy as represented in the latter description displayed a willingness to be in solidarity with while embracing the "power of me too" and "you're not alone" (Brown, 2012, p. 81). Students expressed the second theme Lived Experiences through short stories that represented how they connected with the learning modules and the experiences of others.

Learning in Motion

The third theme learning in motion was a process that students were entering as they continually to engaged with the learning modules. The process was represented by using the language of inequality, asking critical questions, recognizing, and acknowledging disparities were highlighted. These effective learning outcomes were designed to expose social dominant ideologies and improve the students' ability to create strategies for responding or taking action

(Gaufberg, et al., 2010). Language use is a major contributor to inequality and students identified this early by highlighting the differences in the terms and use. In this theme language use was highlighted a one of the ways students showed their willingness to become part of the solution. The use of the words advocacy or advocate was used by many students which showed a willingness to leverage their privilege by standing with BIPOC communities. Also, the use of the word advocacy was viewed as something they could do later in their careers and was viewed as their contribution to eliminating disparities. However, what was not present was the interest in using of language to resist confront ideologies that reproduce inequities.

Learning in Motion also highlighted the shift from questioning to critical questioning as well as ideas for how students planned to personally take action (or not) as they moved forward. Asking critical questions was another part of the process in which will address a little bit later in this section for how students navigate the health disparities curriculum but this was the first glimpse of seeing students question "why is this not.." or Why didn't I know" for gaining a better understanding of the absence of curriculum of BIPOC from books or in courses. This was their way of confronting institutional practices through action. In this process, students developed ideas for what they thought they could do now and in the future for eliminating disparities. This early part consisted of gaining more learning about disparities. The later part, centered remembering and recalling. Looking ahead to their careers students discussed using what they learned about disparities in this course to reinforce their work advocating for inequality. In these discussions, students were making the assumptions that there's a possibility they may not experience additional health disparity learning moving forward so they needed to remember the ideas from the current topics. They did not consider the amount of learning that would be contained after years of not interacting or engaging with health disparities curriculums.

For example, these students were Junior and senior level status that planned to enter into graduate school or their medical programs for multiple years. This theme, Learning in Motion begins the process for how much student would retain from this one-semester health disparity course building on their shared and collaborative learning experiences.

Learning In Motion, also chronicles the collaborative experiences of students and their process of learning about how discrimination and bias produce inequity. These interactive experiences offered contextual awareness that positioned students to develop an awareness of their own privilege and recognition of personal responsibility (McDowell, et al., 2012). During this research study, students navigated this section through collaborative learning experiences for gauge how students interacted with and responded to the learning content with their peers. Throughout this study, technology was specific to the design of learning. The collaborative activity, a primary example of technology and critical digital pedagogy (CDP) was used to reimagining how communication and collaboration happened across boundaries (i.e. cultural and political) within a digital space (Stommel, 2014). Like critical theory, CDP was used to forefront social justice in health. In this activity students were able to use technology for becoming active participants that collaborate and communicate with peers, create connections (i.e. Twitter), and share their learning. The implementation of CDP into learning activities broadens student interactions with technology and with health disparity topics for critiquing oppression (Papendieck, 2018; Stommel, 2014). The use of technology for implementing collaborative learning opportunities was impactful for students for viewing and critiquing oppression.

Collaborative activities during educational experiences allow students to take an active and reflective role in their learning (Weimer, 2013; Njoku, 2018, 2019). Students described their participation in the collaborative activity using the word “powerful” for the ways it informed their interest in learning and the impact of what others thought. Collaborative learning allows

students to work alongside their peers as they gain knowledge and increased awareness of content; this collaborative learning ushered in new ways of thinking that opened the door to the ideas of personal advocacy. These learning experiences provided opportunities for students to navigate the learning space and challenge others who posted common stigmas associated with HIV/Aids. Many of the stigmas posted (Figure 11) represented ideas that are frequently thought about but rarely publicly discussed because they dehumanize and oppress individuals with the disease. According to Hoffman, et al. (2016), these types of negative social views are reflected similarly among health professionals and laypeople. Student participation in collaborative learning was powerful because it highlighted how individuals are impacted by stigmas. The activity also invited students to create a post using words or images, be informed by peers, engage directly with their peers by liking their post, and reflecting on their own personal learning.

The collaborative activity was similar to what Njoku (2019) referred to as visualization activities because they promoted deeper learning and retention of complex health disparity issues for student learning. This activity was powerful for teaching and learning because it informed students about new ideas and actions for fighting inequity. It was also similar to the windows, mirror, and sliding doors concept for transforming the human experience through learning by Rudine Bishop. The window's concept in this study introduced students to the lived realities of HIV/Aids instead of "the imaginary, made-up worlds they create" about them (Bishop, 1990). The stigma board provided students a window for observing the experiences or the undue burdens placed upon those with HIV/Aids, writing things like, "The stigmatism board truly showed just how brutal the disease can be if you have it, not necessarily physically, but mentally and socially" (DK, NOV. 1). The stigma board was also a mirror for reflecting back to students all the listed stigmas. For many students, observing the board illuminated their own contribution

to using stigmas that harm. For example, one student wrote, “The information on the board really opened my eyes on how ignorant I was” (BN, NOV. 1) or “I need to think more about my own discriminatory tendencies… towards homosexuals and people living in poverty and be more open to people” (AJ, NOV. 1). Students described the board as powerful because it revealed the harsh realities of stigmas as well as the physical, mental, and social harms that those impacted by this disease are forced to navigate daily. Students navigated these immersive and collaborative activities in a digital space which brought about meaningful interactions and engagement that contributed to their learning.

Overall across the themes, it was clear that the online health disparities curriculum played an intricate role in informing students learning. The learning modules created unique tensions that resulted in students making strong stances about certain ideas. For example, stances like “I don't think about health disparities felt by minorities”, “this implicit bias test is a joke”, or “everyone is racist.” While many asked questions about the predisposition of disease in BIPOC groups, many of the stances and that were made exemplified the various ways students resisted the curriculum. This study provided students a space to reflect on their learning by either developing new perspectives or resisting ideas that confront dominant ideologies that reproduce health disparities. Despite student resistance, the value of the work is not minimized. Resistance must continually be confronted through learning. Health disparities education topics are complex and almost impossible for students to grasp after one semester. Therefore, ongoing learning and reflection is required for challenging ideologies that are reinforced through the hidden curriculum and for achieving critical consciousness that's inclusive of transformative action. Education for health disparities is needed to prepare students early in their undergraduate

programs to identify how they contribute to health inequalities, reflect on and confront them, and take action against them as they move forward into their profession.

I evaluated two paths developing as students participated in health disparities education. The single path began with informing students about the health disparities topics then veered in into multiple paths. The first path led to ideas that leaned toward change through increased learning or adopting new perspectives. The second path was occupied by those that were not ready or willing to commit to the work of health disparities. This included accepting the idea of varying lived experiences for BIPOC communities. The two paths would result in opposing outcomes, the first path was a commitment to fighting inequality while the other lacks commitment because disproportionate health outcomes do not impact them.

Developing Critical Consciousness

Health disparity curriculums that are informed by moving forward critical consciousness introduces students to the interlocking nature of ideology, power, and privilege in health and medical education and practices (Stommel, 2014; Jemal 2017). My research highlights that health disparity curriculums by nature are designed to address disproportionate differences in disease and death outcomes among communities that have been historically marginalized. However, research designers must go beyond increasing the awareness of undergraduate students about health disparity topics. Health disparity curriculum must prepare students for critical reflection on their implicit biases, social identities, and grapple with how they have been previously informed by unethical social practices as pre-health professionals.

The health disparity curriculum was grounded using the lens of critical consciousness pedagogy to illuminate the root causes of health inequities and how students are thinking about themselves and their world in light of them. I embedded the health disparities curriculum for this

study into the human disease course and constructed unique learning opportunities designed to guide students toward thinking critically and consciously about the disproportionate differences reported in health outcomes. In this upcoming section, I will discuss the health disparities curriculum and the development of critical consciousness through the constructs of awareness, reflection, and action.

Developing Awareness. The implementation of health disparity topics in undergraduate courses is designed to raise a students' collective awareness and knowledge of health disparities (Njoku, 2018; Vazquez et al., 2017). Health disparities as a concept are typically not integrated into undergraduate curriculums **(**Benabentos et al., 2014**).** In this study, the development of student awareness about health disparities modules will be discussed highlighting points from various themes and responses to the pre/post-surveys. From the findings of the pre-survey (Figure 5), 75% of the students reported having some understanding of the term health disparities prior to engaging in the learning modules. However, when discussed within the data presented for the theme Eye Opening Experience, I noted from the data that their reported understanding consisted of having heard the term used in courses but lacked a deeper understanding of the term's meaning, groups impacted, and surrounding context.

The modules were designed to increase awareness by informing students about the topics from a social and historical perspective in relation to health disparities. Each of the modules was frequently described as new knowledge of health disparities and very few students explored learning resources outside of those provided. For example, students in this research were often quoted as "I didn't know", "I knew about some being impacted but not others", or "I didn't realize how many people knew false information about this topic including myself." In each of the modules, I highlighted the students increased awareness, understanding, and knowledge

about health disparity topics. Based on the pre-survey 75% of students reported having an awareness of health disparities compared to 95% on the post-survey, at the conclusion of the semester. In addition to having an increased understanding of the term health disparities, 77% of students reported that the study deepened their knowledge and awareness of health disparities.

Integrating health disparities topics into undergraduate teaching and learning curriculums have proven beneficial for increasing student awareness that links health disparities awareness to knowledge development and attitudes about disparities (Njoku, 2018; Benabentos, et al., 2014). Yet, previous researchers do not discuss awareness from the perspective of confronting inequities through topics such as implicit bias, discrimination, or social identities (Njoku, 2018; Vazquez et al., 2017; Vela 2010). During this study, I provided students the opportunity at a baseline level to exemplify awareness of their identities through thinking and writing about them. Students were able to clearly state their identity and show the connection between their identity and the content by used phrasing such as “I am a straight white female”, “As a white person”, or “I am Indian.” Providing their perspectives was another way of assessing student awareness. In previous research, when these opportunities were not provided, increased awareness resulted in what was identified as “modern racism” or the denial that racial inequality due to discrimination exists and was used to justify white privilege (Burgess, 2007).

Despite my efforts to offer opportunities for students to assess and provide perspective on identity, there were still those who rejected the ideas of racial inequality. Critical consciousness begins with increasing one’s awareness as it embraces the understanding that individuals do not exist in isolation but, in relationship with others and the world. Freire calls this interaction “reading the world” or learning to interpret what is occurring in the world (Halman, 2017, p. 13; Freire, 2008). Therefore, it is imperative that undergraduate curriculums guide students

in moving beyond awareness to critical awareness, where the impact of health disparities on BIPOC is viewed as an oppressive reality that demands to be transformed.

Developing Reflection. Reflection is possibly the most important component for developing critical consciousness. Without reflection, individuals "do not examine the causes, motivations, depths, and manifestations of their guilt, least of all how to move beyond it" (Jemal, 2019; Gay & Kirkland, 2003). For this study, I use student reflection through questions and prompts to support the development of knowledge and awareness, Through reflective writing guided by critical consciousness, students were encouraged to courageously participate in a social analysis of societal inequities (Watts, et al., 2011). At the conclusion of each online learning module, I implement the student reflections prompts that were required for completion (Table 2). According to Gay and Kirkland (2003) reflections are opportunities for students to share their thoughts and question insight provoked by the learning. In their reflections, students described how they were interacting with and understanding the topics. They were also able to speak freely without recourse or inhibitions because their reflections were private. This was different from face to face dialogue or engaging in dialogue on the discussion board. In the findings, I used the reflection finding to assess how the student made sense of the learning modules?

Developing opportunities for students to spend time reflecting on their learning must be deliberate. There were students who employed a variety of different tactics to avoid participating in reflection exercises. They diverted attention away from the targeted topic by offering mere descriptions or justifications for certain actions. I noted in my research how students deliberately used their reflections to discredit the intent and design of the bias test or avoided discussing their identities. There were 33 participants that consciously chose to skip taking the race implicit bias

test. This is another example of how students diverted from the topic; yet, these same students opted to complete and discuss tests such as the gender-career, weight, or presidents test. Despite such tactics, implementing opportunities for students to reflect and to be guided towards critical reflection is necessary for developing critical consciousness. Through reflection, students learn to question social structures, examine how history works, and explore how previous learning was used to perpetuate existing structures of inequality (Diemer, Rapa, Voight, & McWhirter, 2016; Hopper, 1999). Although some used reflections as an opportunity to divert from the topic, most used it to question it and examine the information they received.

Reflection writing was also used as a way to encourage students to ask questions. Reflective questions are used to explore how "knowledge is created and maintained by larger sociopolitical forces" (Jemal, 2017 p.36). Initially, students asked questions in their reflections to seek clarity about health disparity topics or questions that would lead to more understanding such as how and why we got to the place of having disparities in health? Or, how students could bring about the changes in disparities that are needed? The types of questions evolved over the course of the study and by the fourth and final learning module, they began asking more reflective questions that were critical in nature. According to Garcia (2009), critical reflective questions direct attention to power dynamics involved in systems that maintain systemic inequity (Garcia et al., 2009). In this research, students pointed out these power structures as they reflected on historic learning content on race, science, and medicine that was absent from the curriculum such as "Why is this not in our history textbooks" (BN, NOV. 22)? or

> How is it that I had no idea about the extent of the study or the timeline surrounding it? It is hard to imagine that such a big part of history is not more well-known or discussed previously in school. It was also difficult to hear about. (BX, NOV. 22)

Reflective writing for the students in this course provided them space to learn how to question who gets to decide what's included or removed from school curriculum and what information is included in our history books. Critically reflection is a form of action (Freire, 2005) that guides how individuals navigate and engage with the world. Reflection without action is insufficient.

Action. In critical consciousness, action is represented by a commitment to take actions against oppressive conditions (Jemal, 2018; El Amin, 2017). During the course of this study, the student's ideas for action were shaped over time and developed incrementally across the four modules. The curriculum in the modules introduced students to various forms of action taken by others and required that they respond to what actions they would take to eliminate health disparities. Early in the module's students were unsure of what actions they or others should take. Their responses ranged from "not feeling confident that anything could be done" to questioning "what can I do to fix it?" Some felt a sense of helplessness asking "how they could help against health inequities." During some of the earlier modules, students' ideas for action centered around increasing awareness about health disparities to those impacted by it. Whereas for personal learning students suggested that they would follow the Twitter pages of organizations and researchers doing health disparity work that were provided in the modules. As student interactions with learning evolved so did their recommendations on the types of action health professionals could take. In this section, I will focus on action as language, critical assessment of curriculum, and future plans.

Adopting the language of inequality was one of the first steps students took for developing and taking action against oppressive conditions. Offering students the language to distinguish between different types of inequities provides them the necessary tools to help them read the world (El Amin, 2017). In accessing the development of actions, students went from

associating the language of inequality to “a lot of foreign words” (DW, Sept. 6) to using it. Students used words to describe, for example, the plans and ideas for how they would “Advocate” for structural change. The personal words students used in their written reflections became served to document how their consciousness of action had evolved. Students began to recognize the importance of eliminating language associated with thoughts and behaviors that cause harm and contribute to the oppression of others.

Student development of action extended beyond the use of language. Another form of action that was displayed by students was a willingness to challenge what they view as gaps in education that result in inequities. In their reflections, students illuminated institutional power structures as they critiqued and questioned why they had not previously learned about health disparity topics and who decides which topics and histories should be included or excluded. This form of action allowed students to critically take up and address the intentional absence or exclusion of the experiences of BIPOC (specifically Black) groups from teaching and learning. These questions resulted in action that positioned students to critically challenge the role of structural and institutional practices in perpetuating inequities as well as address the idea that knowledge is created and maintained by those in power (i.e. instructors, departments, programs) (Garcia, 2009). For example, students recommended that health disparities topics are offered earlier and in multiple topics stating, “I feel like it’s something that can be learned from earlier and should be taught in a curriculum, maybe health class” (ED, NOV. 22). According to Benabentos (2018), undergraduate programs must implement efforts towards eliminating health disparities that include training within multiple courses and disciplines such as social sciences, bioethics, statistics, biology, immunology, and cancer biology, for creating a competent and knowledgeable biomedical workforce. In this study, 95% of the students reported on the post-survey (Figure 12) that health disparities topics complemented topics on human disease. Some

students, 87% , suggested health disparities should be taught earlier in their undergraduate programs. This was a reasonable ask considering the majority of the students that were enrolled in the course and who participated in the post-survey identified as juniors and seniors. The form of action students used to challenge educational practices were more intellectual forms of action; however, they resulted in ideas and plans for physical action.

Another expression of student action centered on their engagement in health disparities moving forward in their future careers and professions. Part of the work of developing action for critical consciousness is the desire to become aware and challenge the social, economic, and political forces threatening their communities (El Amin, et al., 2017). In this research, students recommended various types of actions that included actions they could take now or later. For now, they planned to engage in conversations with peers, seek out mentorship for building on their learning, or engage with organizations on Twitter. As professionals, they committed to becoming more conscious of "racism and poor ethics" or "treating everyone the same regardless of race." Many of these ideas on how professionals should act support the strategies to eliminate health disparities although additional learning and development is required. According to Freire (2005), the nature of one's action corresponds to the nature of their understanding. The actions students recommended embraces the ideas centered on treating everyone equally; however, the language some students used was contradictory. For example, one student referred to BIPOC as "outside of the norm." The use of deficit and dehumanizing language as previously discussed has the capacity to inform perspectives and ultimately practices. In order for students to develop toward critical action for implementing social change, they need to engage in additional teaching and learning which more than 77% reported they would. Although 77% of students committed to furthering their knowledge on health disparities, it is important to recognize that 23% of students responded that we did not plan to continue in their learning.

Implications

According to the "Unequal Treatment" report, racial and ethnic disparities in health and medicine are positioned within the context of historical and contemporary social and economic inequities (Bentacourt & Maina, 2004). Educating pre-health and pre-medical professionals about health disparities provide them the knowledge and awareness necessary for confronting health inequities (Njoku & Wakeel, 2019; Halman, et al., 2017). Most undergraduate educational programs are slow to embed health disparities topics into traditional courses and are not prepared or equipped to design stand-alone courses. However, if we are to eliminate health disparities and ensure health equity for all as recommended by the Healthy People Initiative (HPI), programs must begin to implement strategic learning outcomes for addressing disparities. Departments that are home to pre-med students should consider offering courses that embed health disparities broadly across majors (Kinesiology, Biology, Engineering, Psychology). Course instructors must be willing to design courses that specifically target health disparities or embed them into existing curriculum content. Students must be provided the opportunity to engage in health disparity learning early and continuously across undergraduate programs and majors. Therefore, this research will have a considerable impact on departments and programs, instructors, clinical practice, undergraduate students, and communities.

Institutional Departments and Programs

Health disparity courses are valuable for equipping and preparing undergraduate pre-health and medical professionals for confronting health inequities. Institutional departments and programs that are preparing students for these professions should consider developing courses specifically dedicated to this topic or consider embedding health disparities curriculum into existing courses. In this research, I noted that pre-health and medical students are spread across

the university in different departments; therefore when courses are offered in one department and specifically as a core course, many students who are planning careers in health or medicine will not have the opportunity to take it. For example, although this class was recommended for Kinesiology students who are enrolled as pre-health/med professionals, students in other majors were able to enroll in it as an elective course. This is provided that they knew about the course at all.

These types of courses and research can be impactful to departments and programs in two ways. First, it informs them of the students' interest in taking courses that discuss health disparities in-depth and earlier in their undergraduate programs. For example, in the post-survey 87% of students noted that they would benefit greatly from learning about health disparities earlier in their undergraduate majors and 77% reported that they would like to explore health disparities more as they prepare for their future careers. Also, if departments implement health disparity learning objectives, it ensures that undergraduate students are engaging with the education that aligns with national outcomes noted within the HPI early and as often as possible during their educational journey. It may also encourage collaboration among departments for creating courses that are interdisciplinary and available to students across the different majors.

Departments can take the lead for initiating Health disparities into their preparation for undergraduate pre-health and medical professionals. Departments can begin by hiring faculty whose agenda and interest center on health equity. Departments could also consider providing training opportunities for faculty that have an interest and those that may not be fully ready to commit to the work of equity. Offering training about health disparities and guiding professionals through CC can move departments forward in their commitment to adequately prepare students to engage with the work of achieving health equity by eliminating disparities.

It is imperative that departments began to develop opportunities for students preparing for careers in health and medicine to engage in the work of health equity. According to the post-survey which was taken prior to the Coronavirus (Covid-19) outbreak in the U.S., student's interest in continuing education for health disparities was high. The current state of the Covid-19 pandemic has illuminated racial, social, and economic inequalities in BIPOC communities that include disproportionate death rates. As a result, people including undergraduate students of various communities have taken to the streets in America protesting and demanding change. These same students are returning to university and college classrooms and will demand course curriculums that address health disparities and the impact on BIPOC communities. As well as provide opportunities to work towards meaningful solutions. Departments can prepare in advance for these changes by implementing health disparities into teaching and learning and by providing training opportunities for faculty.

Faculty and Instructors

Part of faculty development is the willingness to continuously and intentionally enhance one's teaching and their students' learning (Njoku, 2018). According to Ross, Kumagi, & Joiner et al. (2011) implementing development strategies that emphasize a critical awareness of disparities is a commitment to overcoming health disparities. This research could serve as a road map for undergraduate instructors that are interested in developing courses or embedding health disparities curriculum into their current courses. However, two things must be considered prior to engagement: personal development and curriculum design.

When using critical theories like critical consciousness, it requires that instructors first engage in the work of developing critical consciousness before they can effectively model it to students, especially if they have not previously engaged in the work of critical consciousness.

Part of this ongoing and continuous developmental process is to spend time "reading the world" for the ways social inequalities impact self and others in order to take action to change them (Freire, 2005). Instructors should work from a guiding perspective whose aim is to reduce the influence of inequality (Halman et al., 2017). Therefore to effectively model critical consciousness, one must be willing to engage in the work of confronting inequalities that contribute to health disparities; otherwise as noted in chapter 2, faculty run the risk of expresses their racial biases or discriminatory perspectives for which students will observe and potentially adopt (Burke et al., 2017).

Moving forward, my research study can serve as a prototype for how to redesign an existing course. This study highlights and encourages the collaboration between the instructors and the researcher for integrating health disparities into a human disease course. This all began with me examining the course syllabus and finding ways to integrate the information. I aligned my strategies for implementing disparities with the course learning outcomes such as fostering inquiry, collaboration, self-reflection, ethics, and social justice. The way in which I used technology to design digital learning experiences also played an integral role in how students interacted and explored health disparities. They were provided various resources such as Twitter, links to digital resources like videos and articles for gaining multiple perspectives, becoming informed, and deepening their understanding of health disparities. Throughout my research, I implemented various strategies and tools centered around critical consciousness that included promoting student awareness, reflection, and ideas for action. The use of technology in this study afforded me the opportunity to create self-paced, interactive, and engaging and learning experiences. For faculty willing to engage in the work of equity, they must position themselves to become models and mentors who are personally committed to the work of social justice and

equity. What emerged from my research is the students' desire to seek out faculty mentors willing to guide them in understanding the work for eliminating health disparities.

Clinical Practice

Educating health professionals about the social and economic factors that contribute to disproportionate disease outcomes experienced by BIPOC is vital for eliminating health disparities (Gollust et al., 2018). This research can be used to reinforce the need for training practitioners and guide them in recognizing the patterns associated with first-time participation and exploration of health disparities using critical consciousness. This work and the student population that participated in this study is reflective of mirror the demographics of health and medical providers which are comprised largely of white students, raised in white communities, with experiences that identify with the dominant society, and having limited interactions with or in BIPOC communities. For example, students reflected on their lived experiences and identified the ways they had been influenced by society or socialized to view BIPOC, disease, and social inequality. However, what they had not truly grappled with was the unconscious bias that dictated how they interacted and engaged with these communities. According to Hoffman et al., (2016) these ideas have little implications on the communities while they are students, but as professionals, their beliefs result in racial bias that is used to guide how they treat their patients. This research has even greater implications for practitioners, because of the direct impact on BIPOC communities.

For development in consciousness, professionals must be willing to take part in ongoing open dialogue about the various tensions that arise and the ways they challenge deficit ways of thinking. This study revealed that engagement in learning requires longer than a semester or weekend training event. For professionals, this learning must be a continuous evaluation of how

they view themselves and BIPOC communities as well as the direct impact of their interactions. Otherwise, it is tempting to adopt attitudes as exemplified in the student reflection that stated,

> …When is it okay to go into a room with a patient and due to their race and their medical history assume they will have a higher disposition to a certain disease, and when is that judgment wrong due to bias?" (EL, NOV. 22)

For this student, taking this opportunity to question and compare their previous understanding of race and disease and the perspectives provided in the health disparities curriculum highlights the tensions that arise when confronting health inequalities. However, as a practitioner, although the space to grapple and explore health disparities is available, there are greater consequences if biased and discriminatory practices are carried out within their work. The assumption is because health professionals are trained to promote core values of honesty, compassion, and empathy that they are exempt from biased and discriminatory practices. However, if the current pandemic has taught us anything, it is how these inequitable practices in treatment and care were exposed as BIPOC communities continue to lead in disproportionate death rates across the nation.

Continuous and ongoing training for health equity is recommended for health and medical professions. For practitioners, it must be understood that forgoing opportunities to be trained only serve to promote deficit thinking and reproduce ideologies about disease in BIPOC communities that perpetuate health disparities. The significance of implementing health disparities education using critical consciousness for clinical practice contribute to improved knowledge, a willingness to confront biases, and engage in practices for improving care.

Undergraduate Pre-health/med Students

For undergraduate students that are preparing for careers in health and medicine, having opportunities to engage in teaching and learning about health disparities is advantageous for their preparation. First, it prepares them by informing them of problems that exist. This study provided students the space to explore health disparity topics both individually and collectively. The learning was also self-paced and they could explore as much and often as needed to improve knowledge. For these students, participation resulted in an increased understanding of the terms related to health disparities, the language of inequality, and an in-depth understanding of the BIPOC communities most impacted by disparities. Next, the modules prepared them to analyze and grapple with social inequality for the sole purpose of taking action against it. Student participation for this study extended beyond improving their awareness of disparities to considering their own identities and other influences (i.e. community, family) for understanding how they have come to view themselves and others in the world.

Health disparities education prepares students by equipping them with the necessary tools which include the time to plan both individually and collectively to take action towards eliminating disparities. As stated in Chapters 1 and 2, the majority of the courses on health disparities are offered in graduate programs as electives or as professional workshops, both of which do not provide students or professionals the necessary time to grapple with the systemic issues of race and racism that informs how we view BIPOC groups and communities and how those perceptions inform current practices. Preparing undergraduate students earlier in their educational journey will afford them a sufficient amount of time to navigate these issues while targeting all stakeholders that seek future careers in health and medicine.

This research is also impactful for understanding how undergraduate students intellectually and emotionally engage in teaching and learning about health disparities and the

additional steps they are willing to take now and later for engaging in the work. Health disparities are a major public health concern and health disparity courses are essential for preparing students to address them. This research contributes to the existing literature by increasing empirical knowledge for integrating teaching and learning about health disparities into undergraduate courses using critical consciousness. It also highlights the need for departments to implement health disparity outcomes and interdisciplinary outreach. There is a great need for faculty mentors who are willing to model, challenge and confront inequities as they engage students in practices for eliminating health disparities.

Communities

This research contributes to educating BIPOC communities about health disparities in two ways. First, the work for eliminating health disparities have always been viewed as the work of BIPOC communities who are overly impacted by them. The ideas presented in this study for teaching health disparities using CC directly connects them to ways of exploring their current realities while working to transform a system of health that is currently not benefitting them. Critical consciousness was designed to represent oppressed or marginalized people's critical analysis of their social conditions and individual or collective action taken to change their perceived inequities (Jemal, 2018; Freire 2005). However, eliminating disparities is not their work alone, eliminating health disparities is also the work of the people and systems that helped create and reproduce them.

Another way this research is beneficial to communities is that it specifically includes health and medical professionals in the work of eliminating health disparities. It is intended to guide them in confronting bias, stereotypes, and discrimination all of which are rooted in deficit ways of perceiving BIPOC communities which all lead to increasing disparities. In previous

research, professionals have overly focused on individual-level behaviors or patient mistrust of providers as causes for disparities. While overlooking the impact of social and economic inequalities or their own contributions to disparities (Burgess, 2010; Cené, et al. 2009). This research has significant implications for BIPOC communities because it shifts the focus from patient to provider and system-level factors (AMA, NIH). When health professionals are trained and increase awareness of HD, recognize their biases and discrimination, and power dynamics prior to interactions with BIPOC communities, it reduces the harm that is exemplified through poor treatment and care.

BIPOC communities are not looking to health professionals to save them from health disparities, but to do their part in eliminating them. For example, they are seeking to build community partnerships that do not result in harm from treatment and care driven by stereotypes and discrimination. According to Freire (2005) “no one liberates himself by his own efforts alone, neither is he liberated by others” (p. 66). Therefore, it takes intentional action on behalf of health professionals both individually and collectively to participate in the work of improving the disproportionate disease and death outcomes in BIPOC communities. A work that begins with improving treatment and care - a major contributors to health disparities. The work for eliminating health disparities requires the work of communities and all stakeholders in health and medicine. It requires “true solidarity” in which providers within the system of health and medicine not only fight at the side of the BIPOC communities but according to Freire (2005) “take a radical posture of empathy” with those they are in solidarity with (p. 28).

Limitations

Limitations to the study stem from two main areas: the lack of research and course instructor status. The research gaps for health disparities education and using critical consciousness was addressed in Chapters 1 and 2. The research highlighted how some graduate health courses and professional training have implemented critical consciousness to address topics on health disparities, race, or racism. Conversely, researchers that implemented curriculum topics on health disparities in undergraduate education have not evaluated it using critical theories but as markers for measuring student awareness. In this research, I wanted to fill the gap by assessing how undergraduate students explore health disparities curriculum through the lens of critical consciousness for assessing constructs such as awareness, reflection, and action. Due to the fact that there is not much research out there about the topic of health disparities using critical consciousness in undergraduate education, interdisciplinary approaches across academia were used to address effective strategies and resources for designing learning modules and for interpreting data. Because of the lack of research for implementing health disparities into undergraduate courses using critical consciousness, there was little research to inform this study; however, this gap created a space for this research to assess the ways undergraduate students explored and experienced health disparities in teaching and learning and the development of critical consciousness.

In regards to course instructor status, I believe course instructor status is a limitation based on the fact that I was not listed as one of the main course instructors. Being a course instructor brings with it a set of privileges in the learning space that are not provided by teaching assistants and researchers. The instructors dictate and determine the flow of the course from weekly topics and lectures, facilitation of in-class activities and discussions, and creator of study guides and exams. Beyond that, they are also in frequent communication with students and are in

a position to model effective teaching and learning and provide mentorship. For this study, I was viewed as a researcher and the person who designed and administered the health disparity learning modules. I also provided an introductory lecture but had minimal interactions with students during the lectures or via email. As a researcher fluent in health disparities and critical consciousness, I would have brought a different lens and flow had I taught the course.

While each limitation should be considered, I put measures in place to ensure the study was not weakened by these issues. For example, the instructors and I established a collaborative partnership and openly communicated any issues and concerns related to the course and learning modules. In one of several instances, when students gave pushback to the learning modules, the instructors and researcher discussed ways to approach the topics, reflections, and student concerns. As noted in the findings, the instructor during their lecture took the time to clarify the importance of students assessing their implicit bias and helped students to recognize their privilege and their responsibility in minimizing inequality.

Recommendations

Recommendations for the study included two overarching ideas for institutions and instructors and researchers. For institutions and instructors, I recommend focus be placed on health disparities and course design. Whereas for researchers, I recommend implementing additional data collection. In past research, it was evident that for engaging in the health disparities curriculum researchers implemented opportunities for students to participate in immersive and collaborative opportunities to engage in the topics (Njoku, 2018; Vasquez, 2017). However, these studies did not detail the outcomes of those interactions. In this study, student engagement in collaborative activities created opportunities that allowed students to learn from their peers and reflect back on their own actions and behaviors to change them. Opportunities to

collaborate and participate in peer learning was described as powerful for students in many different ways. I recommend that if collaborative activities centering on health inequities have the capacity to naturally draw out the critical consciousness constructs that center awareness, reflection, and action then they should be implemented using different strategies and learning resources for better engaging students in health disparity learning.

I would also recommend the use of extended learning for health disparity topics using critical consciousness. This research highlighted that critical consciousness development remained in the emerging stages following the participation in four learning modules over the course of one semester. For challenging and addressing health disparities using critical consciousness methods for confronting health disparities and implementing strategies for eliminating inequities, students must engage with learning more frequently which should include various core courses and semesters as exemplified in the work of Vasquez (2017). The health disparities curriculum should be implemented in at least one core course each year toward degree completion. The development of critical consciousness requires having continuous and ongoing opportunities to engage with health disparity curriculums. Therefore, instructors of core courses in Kinesiology could embed issues that contribute to health disparities into content-specific curriculums (i.e. exercise and nutrition, epidemiology, or exercise testing). I recommend that other disciplines and courses that attract pre-health and pre-medical majors embed health disparities topics into their course content. This recommendation should reach broadly across disciplines and departments for introducing pre-health and pre-medical professionals interdisciplinary teaching and learning (i.e. biology, sociology, history, and engineering) for addressing health inequities.

Furthermore, I recommend conducting focus groups as an additional component of data collection which I believe could prove beneficial. This ethnographic case study was a great

opportunity for presenting a detailed narrative for how students explored health disparities learning. The student reflections were an essential aspect for providing a glimpse into how students were understanding and navigating learning. The reflections were a way for students to debrief after participating in the learning modules. It was also beneficial for students to discuss and introduce the ideas from the reflections to their peers in an open dialogue; therefore, I recommend incorporating focus groups as part of the data collection process for implementing face to face discussions with their peers. It would also provide clarity and depth to topics surrounding curriculum design and the impact of learning resources and activities. They would also contribute to a greater and in-depth view of the cultural group.

Conclusion

Integrating health disparities curriculum into teaching and learning for undergraduate pre-health/pre-med students can be beneficial for informing and equipping students for the work of equity and developing towards a critical consciousness. Health disparity curriculums have previously been used as a form of critical theory with the sole intent of increasing student awareness. Adopting critical consciousness as a guide for engaging in health disparities topics shifts learning beyond awareness to reflection on inequalities and ultimately towards actions for eliminating them. Embedding health disparities at this stage in the students' educational journey provided students space and time to explore and grapple with the content.

In this study, students navigated the health disparities learning modules through three themes: Eye Opening Experiences, Lived Experiences, and Learning in Motion. Each of these themes was also aligned with how students were guided in developing awareness, reflection, and action for critical consciousness. The more they engaged with the learning the more they improved in their development of consciousness. In Eye Opening Experiences, students were

becoming aware of the term and impact of health disparities on BIPOC communities- many for the first time while at the same time, they expressed ideas that are aligned with age-old ideas biologic concept of race and disease and what happens when these ideologies go unaddressed. These hidden curriculums when left untouched or unaddressed as students transition into professional roles become harmful contributors to disparities. Critical consciousness strategies served as tools to challenge, critique, and analyze various forms of inequality. They also provided opportunities for students to explore their lived experiences which included their social identities, racial bias, and the institutions that influenced how they have come to view the world. Learning in motion represented learning not as a static force but as dynamic motion that produced various forms of action.

Health disparities in this research, according to students, was used to increase and deepen their awareness of health disparities, provided them a space to reflect on their learning, and increased their level of engagement in the course. The hope for this research is that undergraduate departments and instructors heed the voices of its students and begin providing health disparities education earlier and more frequently throughout their academic careers. These courses would be helpful for creating opportunities for students to engage in health disparities learning as an ongoing and continuous process for reaching the critical stages of consciousness for awareness, reflection, and action as they prepare to transition into graduate education or their professions. Lastly, I hope it would encourage faculty to not only implement health disparities into existing courses but to create courses exclusively focused on the content and provide mentorship for students interested in the work. For faculty to adequately serve as mentors they must first embed themselves in the work of equity for eliminating health disparities.

This research would add to the literature for integrating health disparity into existing undergraduate courses by detailing student experiences navigating the curriculum as well as interest in mentorship and additional learning.

REFERENCES

Adakai, M., Sandoval-Rosario, M., Xu, F., Aseret-Manygoats, T., Allison, M., Greenlund, K.J., & Barbour, K.E. (2018). *Health Disparities Among American Indians/Alaska Natives - Arizona*

Apple, M.W. (1982). *Cultural and Economic Reproduction in Education* (1st ed.). Routledge.

Awosogba, T., Bentacourt., J., Conyers, F.G., Estape, E.S., Francios, F., Gard S.J., Kaufman, A., Lunn, M.R., Nivet, M.A., Oppenheim, J.D., Pomeroy, C., & Yeung H. (2013). Prioritizing health disparities in medical education to improve care. *Annals New York Academy of Sciences, 1287,* 17-30. https://doi.org/10.1111/nyas.12117

Benz, J.K., Espinsoa, O., Welsh, V., & Fontes, A. (2011). Awareness of racial and ethnic health disparities has improved only modestly over a decade. *Health Affair, 30*(10), 1860-1867.

Betancourt, J.R., & Maina., A.W. (2004). The Institute of Medicine Report "Unequal Treatment": Implications for Academic Health Centers *The Mount Sinai Journal of Medicine* *71*(5), 314-321.

Bettez, S. (2013). *The social transformation of health inequities: Understanding the discourse on health disparities in the United States.* Unpublished Dissertation. The University of New Mexico Digital Repository.

Bishop, R.S. (1990). Mirrors, Windows, and Sliding Doors. *Perspectives: Choosing and Using Books for the Classroom, 6*(3).

Bourdieu, P. (1973). Cultural Reproduction and Social Reproduction In *Knowledge, Education and Cultural Changed Papers in the Sociology of Education*. Rutledge.

Braun, L., & Saunders, B. (2017). Avoiding Racial Essentialism in Medical Science Curriculum. *American Medical Association Journal of Ethics, 19*(6), 518-527.

Braveman, P. (2006). Health Disparities and Health Equity: Concepts and Measurements. *Annual Review of Public Health. 27,* 167-194.

Braveman, P., & Barclay, C. (2009). Health Disparities Beginning in Childhood: A Life-Course Perspective. *Pediatrics, 124,* S163-S175.

Braveman, P., Kumanyika, S., Feilding, J., LaVeist, T., Borrell, L., Manderscheid, R., & Troutman, A. (2011). Health Disparities and Health Equity: The Issue is Justice. *American Journal of Public Health, 101,* S149-S155.

Braveman, P. (2014). What are Health Disparities and Health Equity? We need to be Clear. *Public Health Report. 129,* 5-8.

Braveman, P. (2016). Health Differences, Disparity, Inequality, or Inequity- What difference does it make what we call it? In M. Buchbinder, M. Rivkin-Fish, & R. L. Walker (Eds.), *Understanding Health Inequalities and Justice: New Conversations across the disciplines* (pp. 33-63). University of North Carolina Press.

Brommelsiek, M., Peterson, J.A., & Amelung, S.K. (2018). Improving Cultural Competency: A Patient-Centered Approach to Interprofessional Education and Practice in a Veterans Healthcare Facility. *International Journal of Higher Education, 7*(4), 157-165.

Brown, L., & Strega, S. (2015). *Resistance As Research: Critical, Indigenous, Anti-Oppressive Approaches*. Canadian Scholars' Press

Burgess, D.J. (2011). Addressing racial healthcare disparities: How can we shift the focus from patients to providers? *Journal of General Internal Medicine, 26*(8), 828-830.

Burke, S.E., Dovidio, J.F., Perry, S. P., Burgess, D.J., Hardeman, R.R., Phelan, S.M., Cunningham, B.A., Yeazel, M.W., Przedworski, J.M., & van Ryn, M. (2017). Informal Training Experiences and Explicit Bias against African Americans among Medical Students. *Social Psychology Quarterly, 80*(1), 65-84.

Byrd, W.M., & Clayton, L.A. (2001). Race, Medicine, and Health Care in the United States: A Historical Survey. *Journal of the National Medical Associate, 93*(3), 11S-34S.

Cammarota, J. (2011). The value of a multicultural and critical pedagogy: Learning democracy through diversity and dissent. *Multicultural Perspectives, 13*(2), 62-69.

Cené , C.W., & Peek, M.E., Jacobs., E., & Horowitz, C.R. (2009). Community-based Teaching about Health Disparities: Combining Education, Scholarship, and Community Service. *Journal of General Internal Medicine, 25*, 130-135.

Centers For Disease Control and Prevention. (2017). Health People 2020 Midcourse Review. *CDC*, https://www.cdc.gov/nchs/healthy_people/hp2020/hp2020_midcourse_review.htm

Centers For Disease Control and Prevention. (2017). Reaching for Health Equity. *CDC,* https://www.cdc.gov/healthequity/features/reach-health-equity/index.html

Chuang, A.W., Nuthalapaty, F.S., Casey, P.M., Kaczmarczyk, J.M., Cullimore, A.J., Dalrymple, J.L., Dugoff, L., Espey, E.L., Hammoud, M.M., Hueppchen, N.A., Katz, N.T., & Peskin, E.G. (2010). To the point: Reviews in medical education taking control of the hidden curriculum. *American Journal of Obstetrics and Gynecology, 203*(4), 316.e311-316.e316.

Collins, P.H. (2000). *Black Feminist Thought* (2 ed.). Rutledge.

Collins, S. (2008). *The Hunger Games*. Scholastic Press.

Crenshaw, K. (1989). Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine. *University of Chicago Legal Forum*, 139-168.

Crenshaw, K. (1991). Mapping the Margins: Intersectionality, Identity Politics, and Violence against Women of Color. *Stanford Law Review, 43*(6), 1241-1299.

Creswell, J.W., & Poth, C.N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.

Cross, T., Bazron, B., Dennis, K., & Isaacs, M. (1989). *Towards A Culturally Competent System of Care, Volume I.* . Georgetown University Child Development Center.

Davis, R.M. (2008). Achieving racial harmony for the benefit of patients and communities: contrition, reconciliation, and collaboration. *Journal of American Medical Association, 300*, 323-325.

Denzin, N.K., & Lincoln, Y.S. (2018). *The Sage Handbook of Qualitative Research*. Sage Publications.

Department of Health and Human Services, (1985). Report of the Secretary's Task Force on Black and Minority Health. Washington, DC: U.S. Government.

Department of Health and Human Services, (1991). Healthy People 2000: National Health Promotion and Disease Prevention Objectives. Washington, DC: Public Health Service.

Department of Health and Human Services, (2000). Healthy People 2010 Understanding and Improving Health and Objectives for Improving Health. Washington, DC: U.S. Government.

Department of Health and Human Services, (2011) Healthy People 2020 Framework. http://www.healthypeople.gov/2020/Consortium/HP2020Framework.pdf

Dewey, J. (1916). *Democracy and Education*. MacMillian

DiAngelo, R. (2018). *White fragility: Why it's so hard for white people to talk about racism*. Beacon Press.

Diemer, M.A., & Blustein, D. L. (2006). Critical Consciousness and career development among urban youth. *Journal of Vocational Behavior, 68*, 222-232.

Diemer, M.A., Rapa., L.J., Park, C.J., & Perry, J.C. (2017). Development and Validation of the Critical Consciousness Scale. *Youth & Society, 49*(4), 461-483

Diemer, M.A., Rapa., L.J., Voight, A.M., & McWhirter, E.H. (2016). Critical Consciousness: A Developmental Approach to Addressing Marginalization and Oppression. *Child Development Perspectives, 10*(4), 216-221.

DuBois, W.E.B. (1899). *The Philadelphia Negro: A Social Study*. University of Pennsylvania Press.

DuBois, W.E.B. (1906). *The Health and Physique of the Negro American* (Vol. 11). Atlanta University Publication.

Institute of Medicine (2004). *(US) Committee on the Review and Assessment of the NIH's Strategic Research Plan and Budget to Reduce and Ultimately Eliminate Health Disparities*. Washington, DC. National Academies Press.

Eisner, E.W. (1994). *The Educational Imagination: On the design and evaluation of school programs* (3 ed.). Prentice.

El-Amin, A. (2017). Critical Consciousness: A Key to Student Achievement. *Phi Delta Kappan, online,* 18-23.

Frankenstein, M. (2019). Critical Mathematics Education: An Application of Paulo Freire's *The Journal of Education, 165*(4), 315-339.

Freire, P. (2005). *Pedagogy of the oppressed - New revised 30th Anniversary Edition* (3rd ed.). The Continuum International Publishing Group Inc.

Freire, P. (2008). *Education for Critical Consciousness*. Continuum.

Fusch, P.I., Fusch, G.E., & Ness, L.R. (2017). How to conduct a mini-ethnographic case study: A guide for novice researchers. *The Qualitative Report, 22*(3), 923-941.

Gaufberg, E.H., Batalden, M., Sands, R., & Bell, S.K. (2010). The Hidden Curriculum: What can we learn from third-year medical students narrative reflections? *Academy of Medicine, 85*(11), 1709-1716.

Gay, G., & Kirkland, K. (2003). Developing cultural critical consciousness and self-reflection in preservice teacher education. *Theory Into Practice, 42*(3), 181-187.

Gibbons, M.C. (2005). A Historical Overview of Health Disparities and the Potential of eHealth Solutions. *Journal of Medical Internet Research, 7*(5), 1-11. https://doi.org/doi‚† 10Æ2196ØjmirÆ7Æ5Æe50

Gollust, S.E., Cunningham, B.A., Bokhour, B.G., Gordon, H.S., Pope, C., Saha, S.S., Jones, D. M., Tam., D., & Burgess, D.J. (2018). What causes racial health care disparities? A mixed-methods study reveals variability in how health care providers perceive causal attributions. *The Journal of Health Care, 55,* 1-11.

Guba, E.G., & Lincoln, Y.S. (1989). *Fourth generation evaluation*. Sage Publications.

Halman, M., Baker, L., & Ng, S. (2017). Using critical consciousness to inform health professions education: A literature Review. *Perspectives in Medical Education, 6*, 12-20. https://doi.org/10.1007/s40037-016-0324-y

Hansberry, L. (1970). *To Be Young Gifted And Black*. Nal Penguin.

Hill, J. (2020). Covid-19 targets communities of color. *The Harvard Gazette Health and Medicine*

Hoffman, K.M., Trawalter, S., Axt, J. R., & Oliver, M. N. (2016). Racial bias in pain assessment and treatment recommendations, and false beliefs about biological differences between blacks and whites. *PNAS, 113*(6), 4296-4301.

Hyett, N., Kenny. A., & Dickson-Swift, V. (2014). Method of method? A critical review of qualitative case study reports *International Journal of Qualitative Studies on Health and Well-being, 9*(1), 1-12.

Israel, B.A., Coombe., C.M., Cheezum, R.R., & Schulz, A.J. McGranaghan, R.J. Lichtenstein, R. Reyes, A.G. Clement, J. Burris, A. (2010). Community-Based Participatory Research: A Capacity-Building Approach for Policy Advocacy Aimed at Eliminating Health Disparities. *American Journal of Public Health, 100*(11).

Jemal, A. (2017). Critical consciousness: A critique and critical analysis of the literature. *Urban Rev., 49*(4), 602-626. https://doi.org/10.1007/s11256-017-411-3

Jemal, A. (2018). Transformative Consciousness of Health Inequities: Oppression Is a Virus and Critical Consciousness Is the Antidote. *Journal of Human Rights and Social Work, 3*, 202-215.

Kim, A. E., Kumanyika, S., Shive, D., Igweatu, U., & Kim, S. (2010). Coverage and Framing of Racial and Ethnic Health Disparities in US Newspapers, 1996-2005. *American Journal of Public Health, 100*, S224-S231.

Kincheloe, J.L. (2008). *Critical Pedagogy Primer* (2nd ed.). Peter Lang Publishing.

Kincheloe, L.J., McLaren., P., Steinberg, S.R., & Monzó., L.D. (2017). Critical Pedagogy and Qualitative Research: Advancing the Bricolage In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research* (5 ed., pp. 235-260). Sage.

Lewis, T. E. (2012). Teaching with Pensive Images: Rethinking in Paulo Freire's Pedagogy of the Oppressed *The Journal of Aesthetic Education, 46*(1), 27-45

Lincoln, Y., & Guba, E.G. (1985). *Naturalistic Inquiry.* Newbury Park, CA: Sage.

Lombardo, P.A., & Dorr, G.M. (2006). Eugenics, Medical Education and the Public Health Service: Another Perspective on the Tuskegee Syphilis Experiment. *Bulletin of the History of Medicine, 80,* 291-316.

Lujan, H.L., & DoCario., S.E. (2018). Science reflects history as society influences science: Brief history of "race," "race correction," and the spirometer. *Advanced Physiology Education, 42,* 163-165. https://doi.org/doi:10.1152/advan.00196.2017

Mantwill, S., Monestel-Umaña, S., & Schulz, P. J. (2015). The Relationship between Health Literacy and Health Disparities: A Systematic Review. *PLoS one, 10*(12).

Marzilli, C. (2016). A review of cultural competency in healthcare. *International Referred Research Journal, 7*(4), 45-49.

McCune, T. (2012). Dewey's Dilemma: Eugenics, Education, and the Art of Living. *The Pluralists, 7*(3), 96-106.

McIntosh, P. (2003). White Privilege: Unpacking the invisible knapsack. In S. Plous (Ed.), *Understanding Prejudice and Discrimination* (pp. 191-196). McGraw-Hill.

McLaren, P. (2017). Critical Pedagogy: A Look at the Major Concepts In A. T. Darder, R.Baltodano, M. (Ed.), *The Critical Pedagogy Reader* (pp. 69-96). Routledge/Falmer.

Merriam, S.B., & E.J., T. (2016). *Qualitative Research: A guide to design and implementation* (4th ed.). Jossey-Bass.

Metzl, J.M., Petty., J., & Olowojoba, O.V. (2017). Using a structural competency framework to teach structural racism in pre-health education *Social Science & Medicine, 199*, 189-201.

Milburn, N.G., Beatty., L., & Lopez, S.A. (2019). Understanding, Unpacking, and Eliminating Health Disparities: A Prescription for Healthy Equity Promotion Through Behavioral and Psychological Research- An Introduction. *Cultural Diversity and Ethnic Minority Psychology, 25*(1), 1-5.

Miles, M.B., Huberman, A.M., Saldaña, J. (2014). *Qualitative Data Analysis: A Methods Source Book* (4th ed) Sage.

Milner, H.R. (2017). Reimagining the Null Curriculum: To support true learning, schools must teach difficult issues like Charlottesville. *Educational Leadership*.

Myrdal, G. (1944). *An American Dilemma: The Negro Problem and Modern Democracy*. Harper and Brothers.

Nader, L. (2011). Ethnography as Theory. *Journal of Ethnographic Theory, 1*(1), 211-219.

Nash, R. (1990). Bourdieu on Education and Social and Cultural Reproduction. *British Journal of Sociology of Education, 11*(4), 431-447.

Njoku, A. (2018). Teaching Health Disparities Awareness in Undergraduate Public Health Courses. *International Journal for the Scholarship of Teaching and Learning, 12*(2), 1-8. https://doi.org/10.20429/ijsotl.2018.120215

Njoku, A., & Baker, U. (2019). Teaching about Cultural Competence and Health Disparities in an Online Graduate Public Health Course. *Journal of Health Disparities Research and Practice*, *12*(2), 14-39

Njoku, A., & Wakeel., F. (2019). Infusing Health Disparities Awareness Into Public Health Curriculum at a Rural Midwestern University *Pedagogy In Health Promotion, 5*(2), 139-146. https://doi.org/10.1177/2373379918786746

Nowell, L.S., Norris, J.M., Deborah, E.W., & Moules, N. J. (2017). Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *International Journal of Qualitative Methods, 16*, 1-13.

Patton, P.M. (2015). *Qualitative Research and Evaluation: Integrating Theory and Practice* (4 ed.). Thousand Oaks, CA. Sage.

Papendieck, A. (2018). Technology for Equity and Social Justice in Education A Critical Issue Overview. *Texas Education Review, 6*(1), 1-9.

Paz, K., & Massey, K.P. (2016). Healthy disparity among Latina women: Comparison with non-Latina women. *Clinical Medical Insights in Women's Health*, 71-74. https://doi.org/10.4137/CMWH.S38488

Perez, M.A., & Luquis, R.R. (2014). *Cultural competence in health education and health promotion* (2 ed.). Wiley.

Pieterse, A.L., & Carter, R.T. (2010). An Exploratory Investigation of the relationship between Racism, Racial Identity, Perception of Health, and Locus of Control among Black American Women. *Journal of Health Care for the Poor and Underserved, 21*, 334-348.

Pillen, H., McNaughton., D., & Ward, P.R. (2020). Critical consciousness development: A systematic review of empirical studies. *Health Promotion International*, 1-12. https://doi.org/10.1093/heapro/daz125

Ripp, K., & Braun, L. (2017). Race/ethnicity in medical education: An Analysis of a question Bank for Step 1 of the USMLE. *Teaching and Learning in Medicine, 29*(2), 115-122.

Roberts, D. (2011). *Fatal Invention: How Science, Politics, and Big Business Re-create Race in the Twenty-first Century*. The New Press.

Ross, P.T. Cené., C.W., Jones, J.B., Brown, A.F., Blackman, D., Fernández , A., Fernández, L., Glick, S.B., Horowitz, C.R., Jacobs, E.A., Peek, M.E., Wilkerson, L., & Lypson, M.L. (2010). A Strategy for Improving Health Disparities Education in Medicine. *J Gen Intern Med, 25*, 160-163.

Saldaña, J. (2015). *Coding manual for qualitative researchers* (2nd ed.). Thousand Oaks, CA: Sage.

Sensoy, O., & DiAngelo, R. (2017). *Is Everyone Really Equal*. Teachers College Press.

Sharifi, M., Adib-Hajbaghery, A., & Njafi, M. (2019). Cultural Competence in nursing: A concept analysis. *International Journal of Nursing Studies, 99*, 1-8.

Shavers, V.L., Bakos, A., & Sheppard, V.B. (2010). Race, Ethnicity, and Pain among the U.S. Adult Population. *Journal of Health Care for the Poor and Underserved, 21*, 177-220.

Shenton, A.K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information, 22*, 63-75.

Shin, R.Q., Ezeofor. I., Smith, L.C., Welch, J.C., & Goodrich, K.M. (2016). The Development and Validation of the Contemporary Critical Consciousness Measure. *Journal of Counseling Psychology 63*(2), 210-233

Sims, J., & Coley, R.L. (2019). Variations in Links Between Educational Success and Health: Implications for Enduring Health Disparities. *Cultural Diversity and Ethnic Minority Psychology, 25*(1), 32-43.

Smedley, B.D., Stith, A.Y., & Nelson, A.R. (2003). Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care. *The National Academies Press*, 235-250.

Smith, W.R. Bentacourt., J.R., Wynia, M.K., Bussey-Jones, J., Stone, V.E., Phillips, C.O., Fernandez, A., Jacobs, E., & Bowles, J. (2007). Recommendations for Teaching about Racial and Ethnic Disparities in Health and Health Care. *Annals of Internal Medicine, 147*, 654-665.

Sohn, L. N. (2015). *Ethnographic Case Study of High school Classroom: Strategies in STEM Education*. Unpublished Dissertation, Texas A & M University.

Stommel, J. (2014). *Critical Digital Pedagogy: A definition*. https://hybridpedagogy.org/critical-digital-pedagogy-definition/

Sweltz, I. (2016). *Teaching Medical students to challenge 'unscientific' racial categories*. Stat. https://www.statnews.com/2016/03/10/medical-schools-teaching-race/

Thomas, A.J., Barrie, R., Brunner, J., Clawson, A., Hewitt, A., Jermie-Brink, G., & Rowe-Johnson, M. (2014). Assessing Critical Consciousness in Youth Adults. *Journal of Research on Adolescence*, 485-496

Thomson G.E., Mitchell, F., & Williams, M.B. (2006). *Examining the Health Disparities Research Plan of the National Institutes of Health.* Institute of Medicine (US) Committee on the Review and Assessment of the NIH's Strategic Research Plan and Budget to Reduce and Ultimately Eliminate Health Disparities. Washington, DC.: National Academies Press.

Tsai, J., Ucik, L., Baldwin, N., Hasslinger, C., & George, P. (2016). Race Matters? Examining and Rethinking Race Portrayal in Preclinical Medical Education. *Academy of Medicine, 91*(7), 916-920.

Vazquez, M.M., O. Barba, J. Hubbard, K. (2017). An Approach to Integrating Health Disparities with Undergraduate Biomedical Engineering Education. *Ann Biomed Engineering, 45*(11), 2703-2715.

Velasco-Mondragon, E., Jimenez, A., Palladino-Davis, A.G., Davis, D., & Escamilla-Cejudo, J. A. (2016). Hispanic health in the USA: A scoping review of the literature. *Public Health Reviews, 37*(31). https://doi.org/https://doi.org/10.1186/s40985-016-0043-2

Villarosa, L. (2019). How false beliefs in physical racial differences still lives in medicine today: Myths about physical racial differences were used to justify slavery- and are still believed by doctors today. *New York Times*. https://www.nytimes.com/interactive/2019/08/14/magazine/racial-differences-doctors.html

Washington, H. (2006). *Medical Apartheid: The Dark History of Medical Experimentation on Black Americans from Colonial times to the Present*. First Anchor Books.

Watts, R.J., Diemer, M.A., & Voight, A.M. (2011). Critical Consciousness: Current Status and Future Directions. *New Directions for Child and Adolescent Development*(134), 43-57.

Weinstein, J.N., Geller, A., Negussie, Y., & Baciu, A. (2017). *Communities in Action: Pathways to Health Equity*. The National Academies Press.

Whitehead, M. (1992). The Concepts and Principles of Equity in Health *International Journal of Health Services, 22*(3), 429-445.

Wieland, M.L., Beckman, T., Cha, S. S., Beebe, T. J., & McDonald, F.D. (2010). Resident Physicians' Knowledge of Underserved Patients: A Multi-Institutional Survey. *Mayo Clinic Proceedings, 85*(8), 728-733. https://doi.org/doi: 10.4065/mcp.2009.0703

Williams, D.R., Lawrence, J.A., & Davis, B.A. (2019). Racism and Health: Evidence and Needed Research. *Annual Review of Public Health, 40*, 105-125.

Williams, D.R., & Rucker, T.D. (2000). Understanding and Addressing Racial Disparities in Health Care. *Health Care Financing Review, 21*(4), 75-90.

Williams, D.R., & Sternthal, M. (2010). Understanding Racial-ethnic Disparities in Health: Sociological Contributions. *Journal of Health and Social Behavior, 51*, S15-S27.

Williams, D.R., & Wyatt, R. (2015). Racial Bias in Health Care and Health: Challenges and Opportunities. *Journal of American Medical Association, 314*(6), 555-556.

Winfield, A. G. (2007). *Eugenics and Education in America: Institutionalized racism and the implications of history, ideology, and memory*. Peter Lang.

Wing, A. K. (2003). *Critical Race Feminism* (2nd ed.). New York University Press.

Yin, R. K. (2018). *Case Study Research and Applications: Design and Methods* (5 ed.). Sage.

Yudell, M., Roberts, D., DeSalle, R., & Tishkoff, S. (2016). Taking race out of human genetics: Engaging a century-long debate about the role of race in science. *Science, 351*(6273), 564-565.

Zajacova, A., & Lawrence, E.M. (2018). The Relationship Between Education and Health: Reducing Disparities Through a Contextual Approach. *The Annual Review of Public Health, 39*(27), 1-27.

APPENDIX A. COURSE SYLLABUS

Human Disease
Department of Kinesiology

Dr. Thomas, Ph.D. & Dr. Goodwin, Ph.D.
Office Hours: Email to arrange appointment
Time & Location – Tuesdays & Thursdays, 12:40 - 2:00 pm

1. **Description**: (Catalogue)
   Discussion of disease process and ill health in the twentieth [and twenty-first] century. Emphasis on epidemiology, prevention, treatment, and the understanding of the etiology of communicable and non-communicable diseases. Credit hours: 3.0
   Note: This is a core class in the Department of Kinesiology undergraduate curriculum.

2. **Instructional Objectives:**

This is an introductory course to human disease. At the completion of this course each student will be able to meet the following student learning objectives:

A. *Communication*. Uses clear and effective written, oral, visual, and electronic (WOVE) communication techniques to foster inquiry, collaboration, and engagement in physical activity and health-related settings. Students will:
- Construct and write a personal health history based on personal risk factors and family medical history.
- Present an oral poster presentation on a specific human disease in a group setting using electronic communication techniques in preparation and/or presentation.

B. *Lifelong learning, assessment, and self-reflection*. Analyzes and evaluates one's own knowledge, abilities and actions relative to professional standards, seeks opportunities to grow professionally, and utilizes self-assessment and assessment of others to foster physical, cognitive, social, and emotional well-being.
- Assess one's risk for specific disease based on self-assessment of controllable and uncontrollable risk factors. Evaluate personal health practice with established guidelines for disease prevention. Assess health practices of others and analyze group and population risk for disease.
- Understand how individual behaviors, social customs, experiences, personal beliefs, and values influence health practices and subsequent risk of disease.
- Engage in guided self-reflections centering topics on human disease, health disparities, and the communities most/least impacted. Develop deeper consciousness and continuous re-construction of knowledge and ideas.

C. *Content knowledge, discovery, and critical thinking*. Understands fundamental concepts of physical activity and health, conducts scientific inquiry, and applies critical thinking to solve problems from personal, scholarly, and professional perspectives.
- Discuss the basic principles of epidemiology
- Describe the etiology and disease agents of select infectious and chronic diseases
- Discuss the role of prevention and treatment in human disease

- Search and critically assess the scientific literature pertaining to the etiology, epidemiology, and prevention/treatment of human disease from an inter-disciplinary perspective
- Use critical thinking skills to apply learned disease information to specific case studies

D. Ethics, diversity, and social justice. Demonstrates leadership and social responsibility to improve quality of life for others and ensures equitable access for diverse groups by creating appropriate environments to initiate and maintain a healthy lifestyle.

- Explain geographic variation in disease rates, both worldwide and within the USA
- Explain why race or ethnicity and socioeconomic status are risk factors for several diseases
- Describe and discuss the role of ethics in health behavior choices
- Understand how cultural and social practices influence disease risk
- Describe and discuss individual and societal obligations to improve the health of individuals around the world

3. **Instructional Methods:**

Each class will provide a forum for an overview of the topic including basic human anatomy and physiology, etiology/pathophysiology of the disease(s), epidemiology, prevention, and treatment of selected diseases. Class time will incorporate lecture or some individual or group activities, and/or time for question and review of previously covered topics.

Note – exam questions will come from in-class lectures or posted readings/learning activities on Canvas. A topic may be covered in the readings and NOT in lecture, but still be included on the exam.

4. **Materials:**

- **REQUIRED**: An access code to Packback, an interactive online discussion forum, will be used to generate discussion on various course topics.

- **OPTIONAL**: McConnell, TH. The Nature of Disease: Pathology for the health professions. 2nd Edition. 2014.

- Readings from websites as assigned in specific units

Additional information from other textbooks, websites, scholarly journals, and booklets from health agencies may be used as reference material. In particular, a number of excellent websites that will be shared with students for use in this course and into the future.

Student versions of lecture slide presentations will be provided on Canvas. These slides are meant to facilitate your learning of the material – in other words, you need to make the slides "come to life" and have meaning by attending lecture and taking notes in order to best succeed in this course. These materials will be available via Canvas prior to each lecture. *You are not required to print out these materials or to utilize them for your note taking.*

Additional references that may be helpful: medical dictionary, physiology or pathology text

Organizations and websites of interest:

- World Health Organization - www.who.org
- Centers for Disease Control and Prevention - www.cdc.org
- National Institutes of Health - www.nih.gov
- American Heart Association – www.americanheart.org

- American Diabetes Association-www.diabetes.org
- American Cancer Society – www.cancer.org
- PubMed– www.ncbi.nlm.nih.gov/pubmed

5. **Class Attendance:**

Lecture attendance is essential for success in this course. Some homework points will be based on in-class activities. In-class quizzes or short assignments will be given in class and these activities will not necessarily be announced beforehand. Attendance may be randomly tracked as well. If you are not in class, you will not be able to make up these points.

6. **Make-up Work Policy:**

If you have a valid reason for missing class, and you wish to request the opportunity to make up activities that took place during your absence, you must email Dr. Goodwin for missing activities that were given on the dates which he lectures, and email Dr. Thomas for missing activities that were given on the dates which she lectures. You must email the instructor PRIOR to class to request the opportunity to make up assignments. Be aware that the instructors cannot guarantee that you will be able to make up in-class earned points. Instructors will deal with student absences and make-up assignments on a case-by-case basis

7. **Assessment:**

Your grade in this course will be based on the following point breakdown.
A total of **450 points** are possible (See dates in Lecture Schedule & Reading Assignments).

Homework, in class quizzes, in class activities	**55 points**
Packback online discussion forum	**45 points**
Project #1: Family Medical History Paper	**50 points**
Project #2: Disease Poster Presentation	**50 points**
Exams (1 (65), 2 (65), 3 (65), and Final Exam (55)	**250 points**

Grading Scale for HS 350

A	93.0-100%
A-	90.0-92.9%
B+	87.0-89.9%
B	83.0-86.9%
B-	80.0-82.9%
C+	77.0-79.9%
C	73.0-76.9%
C-	70.0-72.9%
D+	67.0-69.9%
D	63.0-66.9
D-	60.0-62.9
F	<60

APPENDIX B. IRB APPROVAL MEMO

Study

Study:	**19-372**	**Sponsor(s):**	
Committee:	IRB #1	**Sponsor Id:**	
Category:		**Grants:**	
Department:	School of Education		
Agent Types:	SBER	**CRO:**	
Title:	Integrating health disparities into a human disease course: A look at how undergraduate pre-health professionals engage in learning.	**Year:**	2019
2018 Common Rule Date:	8/2/2019	**HIPAA:**	No
Exempt Categories:	2018 - 1: Research, conducted in established or commonly accepted educational settings, that specifically involves normal educational practices that are not likely to adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction. This includes most research on regular and special education instructional strategies, and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.	**FDA Study:**	No
Comments:	Many undergraduate students preparing for future careers as health professionals complete their undergraduate academic programs without having an opportunity to engage in teaching and learning about the disparities that exist in healt (hover for more...)		

Study-Site

Site(s):	**00 - Unspecified**	**PI:**	**Jones, Tyanez**
Status:	Active	**Additional:**	N
Approval:	August 2, 2019	**Expiration:**	**Exempt**
Initial Approval:	August 2, 2019	**Other Expirations:**	Exempt Determination Expiration - 07/31/2022
Tags:	Exempt		
Comments:			

Study-Site Contacts (2)

Name	Role
Campbell, Alexis A (Hoffman)	Supervising Investigator
Gleason, Benjamin	Supervising Investigator

APPENDIX C. PRE-SURVEY

Health Disparities Pre-Survey

1. Year in school
    - Freshmen
    - Sophomore
    - Junior
    - Senior

2. Gender
    - Male
    - Female
    - Self-identify _____

3. Race/Ethnicity
    - African American/Black
    - Asian
    - Hispanic/Latinx
    - Native American/Indigenous
    - White/Caucasian
    - Bi-racial/Multi-racial
    - Self-identify _____

4. Which community adequately describe the place you grew up?
    - Urban
    - Suburban
    - Rural

5. Academic Major

_____

6. Complete the phrase: In the future I hope to be (i.e. dentist, physician, etc.)

_____

7. Have you taken courses, participated in research, or volunteer opportunities that included learning about health disparities?
    - Yes
    - Maybe
    - No

8. List or describe the courses, research or volunteer opportunities.

Choose each response using the scale 1 (low) – 5 (high).

9. I understand what the term "health disparities means.

Low				High
1	2	3	4	5

10. I am interested in raising my level of awareness about health disparities.

Low				High
1	2	3	4	5

11. It is important to understand what is going on in the world.

Low				High
1	2	3	4	5

12. It is important to correct social and economic inequalities.

Low				High
1	2	3	4	5

13. It is important to be an active and informed citizen.

Low				High
1	2	3	4	5

14. I would like to explore issues related to health disparities in my education, research, and/or professional practice.

Low				High
1	2	3	4	5

*Questions adapted from Diemer et al. (2017)

APPENDIX D. POST-SURVEY

Health Disparities Post-Survey

15. Year in school

- Freshmen
- Sophomore
- Junior
- Senior

16. Gender

- Male
- Female
- Self-identify _____

17. Race/Ethnicity

- African American/Black
- Asian
- Hispanic/Latinx
- Native American/Indigenous
- White/Caucasian
- Bi-racial/Multi-racial
- Self-identify _____

18. Which community adequately describe the place you grew up?

- Urban
- Suburban
- Rural

19. Academic Major

_____

20. Complete the phrase: In the future I hope to be (i.e. dentist, physician, etc.)

_____

21. Aside from participating in the online learning modules, how many other online resources, books, articles, etc. did you use to increase your knowledge about health disparities?

    - 0-1 Resources
    - 2-5 Resources
    - 6-10 Resources

22. Did you participate in the per-survey at the start of the semester?

    - Yes
    - No

Choose each response using the scale 1 (low) – 5 (high).

23. I understand what the term "health disparities means.

Low				High
1	2	3	4	5

24. The online learning modules deepened my awareness of health disparities (i.e. those impacted).

Low				High
1	2	3	4	5

25. The online learning modules increased my understanding of the contributors to health disparities and the consequences of health disparities.

Low				High
1	2	3	4	5

26. The online learning modules provided a space for me to self-reflect on my role for eliminating health disparities (i.e. personal identity, implicit bias, stigmas, etc.).

Low				High
1	2	3	4	5

27. As a per-health/pre-medical professional, understanding existing disparities in health go hand in hand with understanding human disease?

Low				High
1	2	3	4	5

28. Participating in topics and activities about health disparities in the human disease course increased my level of engagement.

Low				High
1	2	3	4	5

29. Pre-health/pre-medical professionals would benefit greatly from learning about health disparities earlier in their undergraduate majors.

Low				High
1	2	3	4	5

30. I would like to explore issues related to health disparities as I prepare for my future career or profession.

Low				High
1	2	3	4	5

*Questions adapted from Diemer et al. (2017)