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Walden University

College of Health Sciences

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Micah M. Griffin

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Walden University
2019

Abstract

The Impact of Campus Health Services on the Attitudes, Perceptions, Beliefs, and Behaviors of Historically Black College and University Students

by

Micah M. Griffin

MHA, Walden University, 2015

MS, Life University, 2011

BS, Livingstone College, 2009

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Health Services

Walden University

November 2019

Abstract

African Americans suffer worse health outcomes related to chronic disease than any other racial or ethnic group. The negative effects associated with poor dietary habits and a low propensity to exercise impact young adult African Americans who attend Historically Black Colleges/Universities (HBCUs) and can lead to higher mortality rates. It is important for HBCU campus health centers to address the perceptions and beliefs of students to positively impact health behaviors associated with diet and exercise. At the time of this study, there was limited research on campus health centers and their impact on HBCU student health beliefs and behaviors. Therefore, this qualitative study was developed to help gain a better understanding into how HBCU health centers can influence student attitudes, perceptions, beliefs, and behaviors related to diet and exercise. This qualitative descriptive study used semistructured focus groups made up of currently enrolled HBCU students informed by the health belief model. Focus groups were conducted with a total of 13 participants who met predetermined criteria. Data were collected using an audio recording device and analyzed using NVivo to group and code like themes and patterns. Results yielded 4 distinct themes; (a) words of family and friends matter, (b) impact of campus environment, (c) internal motivation for action, and (d) involvement from health center. Overall peers, social media, and health center marketing had the largest influence over behaviors related to physical activity and decisions on healthy eating. The social change implication of this study is to assist campus health centers in providing more effective care by understanding student health behaviors which can improve long-term health outcomes for African Americans.

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Dedication

First and foremost, God who has always been the lead in my life and has guided me to this very important milestone through faith and spiritual strength, I am victorious. This study is dedicated to four very important people in my life. My love, my wife Aishah who has been with me through some of the most important times of my life and always supported my ambitions and encouraged me to the finish line. I will always cherish you for holding me down, words cannot express how much you mean to me, I would not have made it without your love and support. My parents, Charlene and Richard for giving me the spirit of perseverance and placing the importance of education as a priority in my life. Mom, you called me "Doctor" before I enrolled in a PhD program, that small gesture always made me smile, I am proud to be your son. Dad, thank you for being the true example of how a father should love his son, the sacrifices you made to support me can never be repaid I only hope I will one day be an amazing father to my children as you were to us. To my big brother Matthew, you always were there when I needed you and I am honored to be your baby brother. I admire you and I'm indebted for everything you have done to support me.

Lastly, this study is dedicated to the former enslaved Africans who knew life was not meant to be spent in bondage and had dreams of educating their children and teaching them resiliency. Thank you for having the foresight to invest in institutions of higher learning, I hope that my contribution to Historically Black Colleges and Universities continues the rich legacy and inspires current and future students who pass through these institutions to be great and continue in the proud history of producing leaders.

Acknowledgments

I must acknowledge first my amazing dissertation committee, my Chair Dr. JaMuir Robinson for your unwavering support throughout this journey. I am thankful for your feedback and attention to my study; you were always available to answer my questions and your expertise helped me think as a researcher. To my other committee member, Dr. Jennifer Edwards thank you for imparting your expertise into my study, your timely feedback was invaluable. To Dr. Frederick Schulze, thank you for your feedback and guidance throughout this process. Thank you to all the professionals and mentors who encouraged me to earn my doctrine and helped me see the potential in preserving to the finish line. Finally, thank you to all the students who participated in this study, whose honesty and openness helped shaped the outcomes of my research I am truly thankful for working with you through this process.

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Chapter 1: Introduction to the Study

Introduction

African Americans (AAs) develop and experience chronic disease (obesity, diabetes, heart disease, cancer) at higher rates than any other racial or ethnic group in the United States (Chen, Farrer, Gulliver, Bennett, & Griffiths, 2017; Harrington & Ickes, 2016; Kemper, & Welsh, 2010). Over one-third of all adults in the United States are obese, and AAs make up 46% of these cases (Hales, Carroll, Fryar, & Ogden, 2017). Chronic disease such as heart disease, obesity, and diabetes are usually associated with unhealthy lifestyle choices and young adults between the ages of 18-24 are showing the most significant increase of being overweight and obese, with many of them reporting their lifestyle as having the greatest impact on health status (Braden, Strong, Crow, & Boutelle, 2015; Brooks & Moore, 2016, Winham & Jones, 2011).

College campuses have long served as a viable community in supporting student life, and because of this dynamic, campus health centers are in position to influence student health behaviors and beliefs. To experience better health outcomes later in life, it is important to develop positive health behaviors earlier in life (Topè & Rogers, 2013, Yahia, Wang, Rapley, & Dey, 2016). As such, a Historically Black College/University (HBCU) campus can serve as an ideal community to address health behaviors related to diet and exercise amongst the AA young adult population due to the fact HBCUs enroll a significantly higher number of AA students than traditional colleges and universities (Brown, Hossain, & Bronner, 2014; Topè & Rogers, 2013).

In this study I conducted focus groups with actively enrolled HBCU students to determine the impact of campus health services on their attitudes, perceptions, beliefs, and behaviors. Qualitative description and the health belief model (HBM) served as the framework for this study and aided in shaping the research and interview questions. This chapter provides background, a statement of the problem, purpose of the study, the research questions, the framework, and the implications for positive social change.

Background

In 2016 there were 223,515 AA students enrolled in HBCUs across the country, and with the growing number of health disparities in AA communities, it is important to understand health beliefs and behaviors of this student population (U.S. Department of Education, 2016). The American College Health Association (ACHA, 2015) found in the National College Health Assessment (that the prevalence of obesity is 51.5% in AA students compared to 38.6% in White students. Most research studies on college student health have a primary focus on predominately white institutions (PWI) with a limited number of studies done at majority black colleges and universities (Brown, et al., 2014; Topè & Rogers, 2013; & Harrington & Ickes, 2016). As a result, HBCU college students often are understudied leaving these groups to be misrepresented in national college health data (Brown et al., 2014; Topè & Rogers, 2013). Consequently, this lack of representation leads to a limited amount of culturally competent campus health promotion programming.

College students in particular are faced with numerous health challenges resulting from unhealthy diet and limited amounts of physical activity (PA) (Cowie & Hamilton,

2014; Harmon, Forthofer, Bantum, & Nigg, 2016; James, Pobee, Oxidine, Brown, & Joshi, 2012). Obesity, high blood pressure, heart disease, and prediabetes are prevalent in the AA community and tend to impact HBCU students at the same disproportionate rates as other young adult AAs. (Sa, Heimdal, Sbrocco, & Seo, 2016; Stephens, Althouse, Tan, & Melnyk, 2017). It is important to consider how health behaviors and beliefs can impact the health outcomes of these students. Student health centers are in an ideal position to provide direct primary care related to behavior modification and health promotion services that directly address negative behaviors.

There is a gap in understanding what influences HBCU students' diet and exercise beliefs and what campus health services can do to influence these belief systems. Social disparities exist in health-related research focused on young adult AA health resulting in a lack of evidence-based initiatives targeted to HBCU populations, whose majority student demographic is AA (Yancu, Lee, Witherspoon, & McRae, 2011). Distrust in health service research, low health literacy, and lack of perceived benefit were identified as primary reasons HBCU students choose not to participate in campus-based research studies (Yancu et al., 2011). The ACHA National College Health Assessment included 52 post-secondary institutions and 31,000 students last year and is the most comprehensive college student health survey in the United States (ACHA, 2017). Although this survey includes a large college student population, no HBCUs were represented and only 6% of participants identified as Black or AA, this disparity is not reflective of where 14% of college students identify as Black or AA (U.S. Department of Education, 2016). This lack of inclusion and representation is reflected in the health

outcomes of AA students and can create challenges for HBCU student health service professionals to effectively address health behaviors on campus.

This study was necessary to fill the gap in qualitative health service research conducted with an HBCU student population. HBCU are in the ideal position to be a key promoter of healthy behaviors and develop effective culturally competent programs that address student diet and PA habits (Brown et al., 2014; James, 2012; Livingston, Saafir, & Manuel, 2012; Romano & Scott, 2014). In this study I sought to understand the attitudes, perceptions, beliefs, and behaviors of HBCU students, which can help provide information about a larger segment of young adult AA health beliefs and how health services can impact these beliefs.

Problem Statement

There have been several studies that examined diet and exercise behaviors of college students (Das & Evans, 2014; Egli, Bland, Melton, & Czech, 2011; Harmon et al., 2016; Yahia et al., 2016). However, there has been a limited amount of research conducted on HBCU student health behaviors related to diet and propensity to exercise. As a result, a gap in the literature exists in college student health research that includes HBCU campuses. Also, much of HBCU health research does not explore the role campus health centers play in student health behaviors. Studies on HBCU student health behaviors revealed that many HBCU students are overweight or obese (Kemper & Welsh, 2010; Livingston, Saafir, & Manuel, 2012; Sa et al., 2016). As a result, these students are at higher risk for developing chronic diseases later in life, largely based on behaviors developed while on campus such as poor food choices, limited PA, high stress

exposure, and limited financial resources (Hayes et al., 2009; Kemper & Welsh, 2010; Sa et al., 2016; Topè & Rogers, 2013; Williams-York, Montgomery, Emerson, McCall, & Spencer, 2013). In this study I sought to close the gap in college student health research and explore the role campus health services have in addressing negative student behaviors associated with diet and exercise.

Purpose of the Study

The purpose of this qualitative descriptive study was to examine how HBCU students' attitudes, perceptions, and beliefs about diet and exercise are impacted by campus health services and the role familial, societal, and environmental factors have on these beliefs. College health centers can play a vital role in shaping student beliefs about PA and eating behaviors, making it important to understand how health services shape the beliefs and behaviors of a predominately young adult AA student population. I used focus groups to create synergy amongst the students to encourage richer discussion. With the study I sought to identify what factors students believe to be most influential to their health behaviors. In turn, by understanding what influences HBCU student health behaviors, student affairs professionals will be able to design more relevant programming to reach this population.

Research Questions

The research questions for this qualitative study were as follows:

RQ1: What socioeconomic (community, familial and societal) life experiences have shaped HBCU student health beliefs about diet and exercise?

RQ2: How does the campus environment and campus health services specifically influence HBCU student dietary health and PA behaviors?

Conceptual Framework

The conceptual framework for this study was The HBM, first designed by Hochbaum, Rosenstock, and Kegels (1952) to promote and change health behaviors at the individual level. This model has been used in student health research because it can help to explain and predict preventative health behaviors (Jones, Smith, & Llewellyn, 2014; McArthur, Riggs, Uribe, & Spaulding, 2017; Romano & Scott, 2014; Yahia et al., 2016). This study was grounded in being able to identify what impact campus health services have on HBCU student health beliefs, and how these beliefs can be considered when designing health promotion initiatives. The HBM has been used in understanding student health behaviors and promoting behavioral change through individual perceptions, modifying negative behaviors, and examining likelihood of action (Jones et al, 2014; McArthur et al., 2017). The HBM is a theory that uses a set of constructs to determine information about an individual's values and beliefs to examine why some people take advantage of health services or adjust behavior to improve their health and others do not (Rosenstock, 1974). Constructs that make up the HBM are (a) perceived susceptibility, (b) perceived severity, (c) perceived benefits, (d) perceived barriers, (e) cues to action, and (f) self-efficacy.

This conceptual framework has been used in a variety of ways to address behavior change in college students. For example, McArthur et al. (2017) used the HBM to design an intervention that tested weight management in college students, while Romano &

Scott (2014) incorporated the HBM into health coaching sessions for college students, Das & Evans, (2014) used constructs of the HBM to develop interview questions to examine weight management barriers on a college campus. The flexibility of the HBM model makes it an ideal framework in understanding health behaviors and how individuals understand what influences their beliefs. For this particular study, I incorporated the HBM constructs in developing focus group questions to understand the impact campus health services have on the attitudes, perceptions, beliefs, and behaviors of HBCU students.

Nature of the Study

The nature of this study was a qualitative descriptive exploration using a focus group approach that integrated the HBM in shaping the research and discussion questions. This method allowed participants to discuss their individual perceptions and beliefs about diet and exercise, including how these beliefs are impacted by campus health services on an HBCU campus. I used focus groups with AA students currently enrolled in an HBCU in the Southeast United States who have been enrolled for at least one academic year and have visited the student health center at least once during this time in order to capture specifics about their individual experiences with campus health services. A qualitative approach was the best suited for this study because it captured detailed descriptions of events and experiences to understand HBCU students' perceived susceptibility, benefits, and barriers to healthy eating habits and propensity to engage in PA.

To identify what influences HBCU student health beliefs and how students feel their beliefs are impacted by campus health services, it is important to understand the students' desire to avoid illness and their belief that a specific health action will prevent the illness. This data allowed me to understand how the beliefs students arrive on campus with can be influenced by a student health center to improve diet and PA habits. I collected and analyzed the data for trends and themes that provided relevant insight about what young adult AAs believe influences their health behaviors. As a result, data from this study can influence how health services are delivered on an HBCU campus and to the AA population as a whole.

Conceptual and Operational Definitions

African American HBCU student: In this study, students who are (a) African American, (b) currently enrolled in an HBCU, (c) at least a freshman, and (d) at least 18 years old.

Campus health service: Any organized health related program or initiative that seeks to improve the health outcomes of actively enrolled students on a college campus. These programs are usually integrated and delivered by a unit operating in a division of student affairs and can address a variety of student wellness needs (ACHA, 2016).

Health outcome: Change in health status, reported belief, or behavior resulting from a defined intervention or investment into a specific health indicator (Lambert & Donovan, 2016; Yahia et al., 2011).

Historically Black college and university (HBCU): A college or university that was established prior to 1964 whose principal mission is the education of AAs and that is

accredited by a nationally recognized accrediting agency (U.S. Department of Education, 2017).

Predominately White Institution: Although not an official designated term by the Department of Education, this is a term used to describe an institution of higher learning in which students who identify as White make up at least 50% of total student enrollment (Brown & Dancy, 2010).

Socioeconomic factor: Social and economic trend experiences that help shape and mold an individual's personality, attitude, and beliefs. Relating to this study I considered familial, community and societal socioeconomic factors as they influence health beliefs.

- *Familial factor:* A social factor category used to describe an element or condition that stems from a family, which can account for a range of influences presently demonstrated in an individual's actions or behaviors. (Pearl et al., 2018)
- *Community factor:* A social factor category used to describe influences of an individuals lived day-to-day experiences of a neighborhood, city, and/or county in which an individual lives and interacts. (Boutin-Foster et al., 2013; Wickrama, O'Neal, & Lott, 2012)
- *Societal factor:* A social factor category used to describe an external outlet (media, policy, and/or peers) that can both directly and indirectly affect the health behaviors and outcomes of an individual.

Assumptions

There were several assumptions relating to this research study. The first assumption was that HBCU students would effectively recall factors from childhood as they relate to health beliefs. A second assumption was that recruiting on campus would be successful in identifying students for this study. The third assumption was that students would be able to recall an experience with campus health services and answer questions related to that experience. Lastly, I assumed that information received from students could be used to design campus health initiatives.

Scope and Delimitations

To better represent HBCU students and add to health service research with a majority AA population, the scope of this study focused on AA students currently enrolled in an HBCU. The specific population currently enrolled HBCU students attending Alabama A&M University, an HBCU in the state of Alabama. The scope was also established by the focus group questions, specifically on the influences and impact of campus health services. Although this study examined student perceptions of campus health services, a delimitation was that I was not testing or observing student interactions at the health center. Exclusions in this study included students that were not actively enrolled full-time and students attending the HBCU but not identifying as Black or AA.

Limitations

Reliability is a general concern with most qualitative studies due to individuals self-reporting (Flynn, Albrecht, & Scott, 2018; Gowin Cheney, Gwin, & Franklin Wann, 2015; Sandelowski, 2010). Consequently, responses are limited to the scope and

cognitive memory of each participant to recall events from their childhood and past experiences on campus. The research design presented some limitations in that a focus group setting could deter some students from openly and honestly expressing their thoughts and feelings (Flynn et al., 2018; Yancu et al., 2011). To address this, I provided all students a copy of the transcript and gave them an opportunity to follow up and provide additional details if necessary. Finally, to ensure quality, trustworthiness, and credibility, I addressed any potential bias or prejudice through a self-reflection journal that I developed before conducting focus groups, and I used the journal throughout the study to reflect and keep field notes.

Significance

This research study fills a qualitative gap in understanding the attitudes and perceptions that influence HBCU student health behaviors to provide insight that may be useful for developing culturally relevant campus-based health services. This study is unique because it incorporated qualitative feedback from current HBCU students on what influences their diet and exercise health beliefs and how they perceive current campus health services impact these beliefs. The results of the study will provide HBCU student affairs professionals the information needed to incorporate effective practices into student health promotion services and campus health centers. The results will also contribute to the larger body of student health research by providing qualitative data on a predominately AA student body, a demographic with a limited amount of health service research being done (Hayes et al., 2009; Kemper & Welsh, 2010). Many HBCUs have holistic missions that go beyond academics to address a variety of interpersonal traits of

the student, and with the results of this study, HBCUs will have insight into determinants of health that influence student health behaviors (Brown, 2013). Implications for positive social change include improving health disparities in the AA community by understanding what impacts young adults and shapes lasting health beliefs. Lastly, with an improved understanding of what influences college students' health beliefs, results can aid in influencing diet and exercise behaviors of the young adult AA population as a whole.

Summary

The role HBCUs can have in addressing negative health beliefs and how a campus health center engages students can be understood from this study. Addressing student needs with the purpose of improving negative health beliefs related to diet and exercise can ultimately impact long-term health outcomes of college students (Amuta Jacobs, Barry, Popoola, & Crosslin, 2016; Das & Evans, 2014; Fennell & Escue, 2013; Gowin et al., 2015; Harmon et al., 2016). This study adds feedback on HBCU students' perceptions and how campus health services can positively impact these perceptions.

In this chapter, I discussed the background of the study, problem statement, and purpose of the study. This chapter also included the research questions, and the role the HBM played as the conceptual framework for the study, and the nature of the study. Lastly, I provided an overview of the research questions, operational definitions, scope, and the overall significance of the research. Chapter 2 will provide an extensive review of the literature that will expand on the HBM and socioeconomic influences and provide an

in-depth exploration of AA health outcomes and factors in context of campus health services.

Chapter 2: Literature Review

Introduction

This chapter is focused on a review of the literature surrounding the impact of campus health services on HBCU students' behaviors and beliefs relating to dietary choice and propensity to exercise. The emphasis is on examining the structure of services offered by campus health centers and how these services impact attitudes, perceptions, beliefs, & behaviors. According to the National Center for Educational Statistics (2017), 18-24-year-olds were the largest group currently enrolled in college as of 2016, with 14% being AA students. Young adult (18-24) AAs are at higher risk for developing chronic diseases associated with poor diet and lack of exercise, and AA college students are significantly heavier and tend to gain more weight while in college when compared to other racial/ethnic groups. (Kemper, & Welsh, 2010; Livingston et al., 2012; McArthur & Raedeke, 2009; Sa, et al., 2016). Historically AAs suffer from worse health outcomes later in life, with higher morbidity caused by chronic diseases like; obesity, diabetes, heart disease, and cancer (Johnson & Nies, 2015; Kemper, & Welsh, 2010; Topè, & Rogers, 2013). Researchers have determined that when young adults develop healthy behaviors earlier in life, these behaviors carry on into adulthood and reduce the occurrences of these diseases later in life (McArthur & Raedeke, 2009; Yahia et al., 2016). As such, I explored peer reviewed literature related to campus health services and health behaviors of AA students attending an HBCU.

This chapter is divided into four sections that develop a systematic review of literature related to (a) health status in the AA community, (b) an overview of campus

health service delivery, (c) health status and health outcomes of HBCU students, and (d) applications of the HBM in college student health research. These sections highlight the need for studying an HBCU population using a qualitative approach, where current students are the focus group. In order to understand how campus health services can impact student health behaviors, I used the HBM to conduct focus groups with current students from an HBCU in Alabama. The vast majority of college student health research is conducted at PWIs with a limited amount of AA student participation (Chen et al., 2017; Topè & Rogers, 2013). Current literature has expressed the need for active student participation in designing campus health services; as a result, AA student participation is essential in influencing health behaviors of young adult AAs (McArthur & Raedeke, 2009; Romano & Scott, 2014). HBCUs have a large AA student body, however these institutions are often understudied, have limited amounts of student health data, and the campus health services departments often have a minimal focus on health promotion (Chen et al., 2017; Kemper, & Welsh, 2010).

Search Strategy and Method of Review

Conducting my search, I used the following terms and concepts: *student health, college health centers, college health services, HBCU student health, health disparities, African American health, health behaviors, college wellness, health promotion, young adult health,* and *health belief model.* The search concepts were explored using the following online databases: Sage Premier, PubMed, Academic Search Premier, MEDLINE, ProQuest, & Google Scholar. This review is focused on studies that were done between 1997-2018 and relied heavily on peer reviewed research. Data was also

reviewed from the ACHA, the leader in the field of college student health. The ACHA administers an annual survey known as, the National College Health Assessment, which in 2016 reached 33,512 students at 51 institutions of higher learning. Although AA students are underrepresented (6.9%) and HBCUs are not represented (0%) in the results, insights from the survey can still be gained regarding the delivery and impact of campus health services. A summary of the articles included in this review are presented in Figure 1.

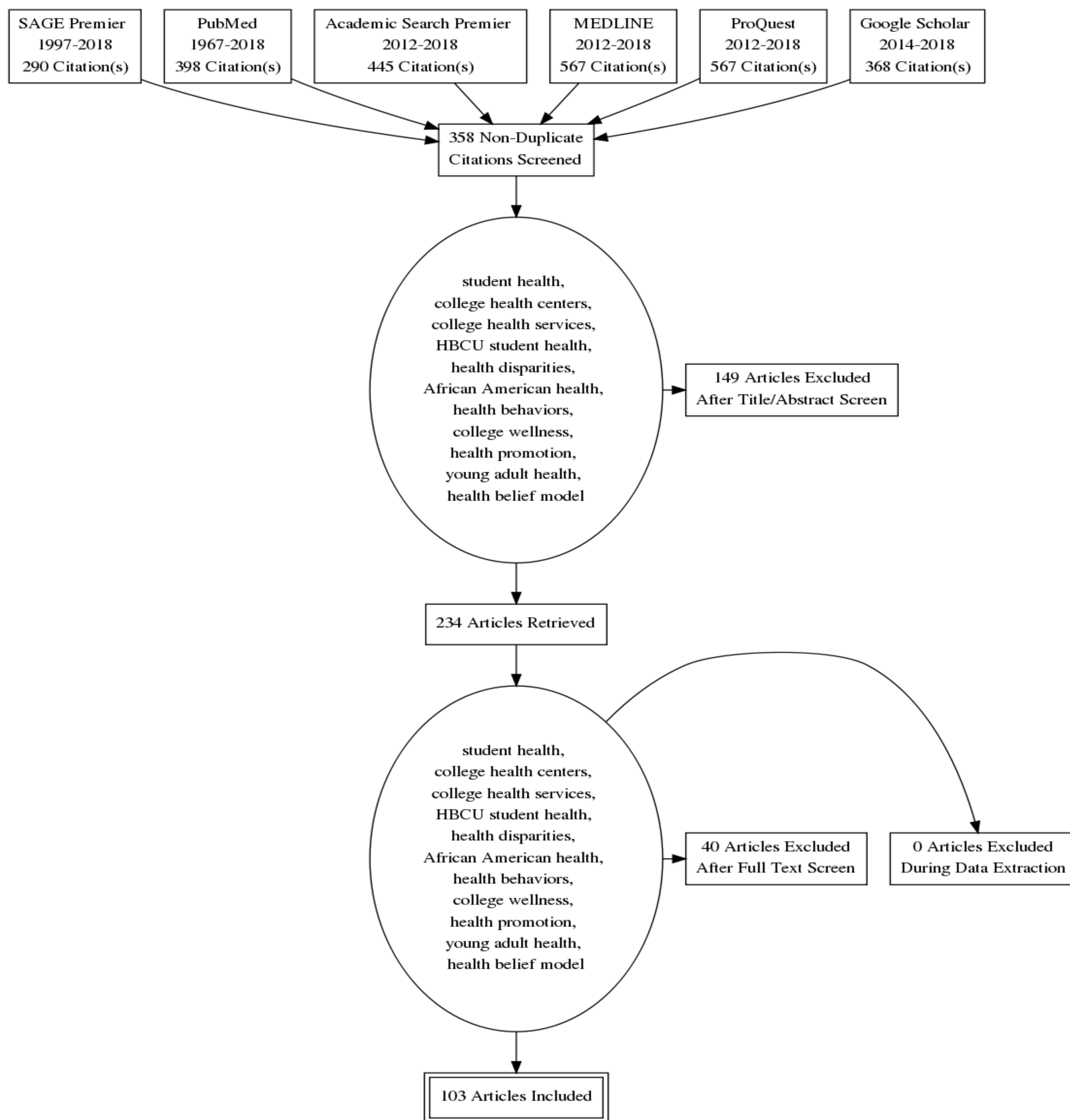

Figure 1. PRISMA diagram.

Health Status of the African American Community

AAs are defined as an ethnic group living in the United States having total or partial ancestry from any racial group in Africa (U.S. Census Report, 2011). Representing 12.6% of the U.S. population, 38.9 million people identify as Black or AA currently living in the United States according to the U.S. Census Report (2010). With the vast majority of AAs living in the Southeastern part of the United States, there are social and historical factors that exist as barriers to people from this region such as; lack of access to health services, unhealthy lifestyle choices, low household income, and worse education outcomes. Chen et al. (2017) conducted a study to examine racial and ethnic disparities in healthcare access and use after full implementation of the Patient Protection and Affordable Care Act of 2010. Results of this study indicated that racial and ethnic disparities in access have been reduced significantly during the initial years of the Affordable Care Act implementation; however, minorities still suffer from worse health outcomes when compared to other racial groups (Chen et al., 2017). According to the National Health Interview Survey (2015), health care access and insurance coverage were noted as major factors that impacted health outcomes, most especially in AA communities (Chen et al., 2017). Although insurance does improve access, it is worth noting that improved access alone does not necessarily improve health status for AAs (Chen et al., 2017; Clemans-Cope et al., 2012).

AAs are disproportionately affected by adverse health outcomes related to physical inactivity and obesity resulting in higher rates of chronic disease (Chen et al., 2017; Harrington & Ickes, 2016; Kemper, & Welsh, 2010). Chronic diseases such as

cardiovascular disease (CVD), type II diabetes, and obesity are prevalent in AA communities, and as a result, AA men and women have worse health outcomes and lower life expectancies when compared to other racial groups (Kemper & Welsh, 2010; Romano & Scott, 2014). Adopting unhealthy behaviors can contribute to higher rates of developing chronic diseases, which ultimately result in higher mortality rates occurring earlier in life. Treadwell et al. (2010) determined that overall AAs experienced 40.5% more deaths from chronic disease (heart disease, type II diabetes, and cancer) in 2011 than White Americans. Consequently, it is important to not only focus on the AA population as a whole but to also devote attention to the younger demographic where some of these determining factors can be addressed before they become life threatening. The literature has suggested that many chronic disease factors can be changed, and individuals, especially AAs who are at higher risk for chronic disease, can reduce their risks, especially if healthy behaviors are established early in childhood or young adulthood (Chen at al., 2017; Stephens et al., 2017; Winham & Jones, 2011). As a result, HBCU campus health services have an ideal advantage to impact health behaviors, beliefs, and perceptions of young adult AAs due to the large number of young adult AAs who attend these institutions.

Influences in Young Adult African American Health Behaviors and Beliefs

Childhood influences often determine how humans are socialized and initially introduced to health behaviors; therefore, it can be a very important time to explore and understand how young adults perceive health as it relates to diet and exercise (Braden et al., 2015; Brooks & Moore, 2016). While the majority of literature being conducted on

AAs is comprehensive and examines a variety of health topics, many of the studies inclusive of young adults and AA college students usually compares them to other racial groups, leaving a limited amount of research being done solely on this community (Brooks & Moore, 2016; Sa et al., 2016; Topè & Rogers, 2013; Winham & Jones, 2011). Therefore, it is essential for researchers to have a better understanding of what influences health behaviors of AA communities in studies where the majority of participants are AA young adults, making an HBCU campus a setting for gaining these insights.

Predisposing factors related to obesity such as overeating and lack of adequate PA are serious public health problems, and young adults are at high risk for gaining weight upon entering college. Stephens et al. (2017) conducted a descriptive study using baseline data from the Young Adult Weight Loss Study to examine the role of race and gender in nutrition habits and self-efficacy amongst a group of young adults (18-25). The study used regression analysis and compared categories related to eating self-efficacy, exercise self-efficacy, nutrition knowledge, exercise habits, and healthy eating habits (Stephens et al., 2017). Although the study included all racial demographics, AAs made up 12.9% (n = 8) of the total participants (N = 62) with 90% of the participants being college students. Results from the study determined that there were no significant differences across racial subgroups in self-efficacy for healthy eating or self- efficacy for exercise; also, there were no significant racial differences in nutrition knowledge scores (Stephens et al., 2017). However, AAs did report having higher saturated fat intake and fewer servings of vegetables on a daily basis. While many of the results from this study yielded no

significant difference amongst racial groups in many of the categories, there are cultural differences that exist that may affect weight perception amongst young adults.

Although Stephens concluded there was no significant correlations of self-efficacy amongst the various racial groups regarding nutrition habits and CVD, Winham & Jones (2011) sought to examine baseline knowledge in relation to CVD in a similar young adult AA population. Nutrition habits and propensity to exercise are the most significant factors influencing obesity and heart disease, it is important to understand the baseline knowledge young adults have regarding their risks for acquiring these diseases (Homko et al., 2012). When young adults have a higher knowledge of CVD risk factors it can subsequently increase their ability to make informed decisions related to engaging or altering certain behaviors that can reduce disease risks, such as tobacco use, not exercising, and the reduction of foods high in saturated fat (Winham & Jones, 2011). As a result, it becomes of high importance to determine the level of knowledge of lifestyle risk factors for CVD among young AA adults and with this study, Winham & Jones (2011) used The HBM to evaluate this phenomenon. The study included a convenience sample of 172 AAs aged 18-26 representing both genders and had them complete a questionnaire from the American Heart Association (AHA) in which health variables including smoking status, BMI, & level of PA were all examined. Results of the study determined that some aspects of heart disease were well known among young adult AAs, however a significant percentage (37%) did not recognize that reducing animal protein in their diet would positively lower cholesterol which in turn would lower risk of heart disease (Winham & Jones, 2011). Studies suggest that initiatives targeting young adult AAs

should focus on diet/lifestyle factors and how food choice specifically influences predisposing factors of chronic diseases such as CVD.

Brown et al., (2014) conducted a study in which the Pulvers Body Image Scale was used to determine body image perception among college aged AAs. Results of the study indicated higher levels of body dissatisfaction reported amongst young adult AA females and negative perceptions of body image increasing over time amongst both male and female participants (Brown et al., 2014). Furthermore, Bucchianeri et al., (2013) examined changes in body image dissatisfaction from adolescence to young adulthood and how that influenced overall self-perception. Levels of satisfaction with body image can have a lasting impact on eating habits, weight management, and propensity to develop chronic diseases (Brown et al., 2014; Brooks and Moore, 2016; Bucchianeri et al., 2013). Examining participants (n=1902) from varied racial/ethnic groups and different socioeconomic statuses (SES) Bucchianeri et al., (2013) completed a 10-year longitudinal study with three different times points to understand body image perception form adolescence to adulthood. Results were similar to Brown et al. (2014) revealing that body dissatisfaction increased significantly between middle and high school, and increased further during the transition to young adulthood with the sharpest increase seen in AA females (Bucchianeri et al, 2013).

Fiery et al., (2016) also explored young adult perceptions of body image by comparing similarities and differences in conversations about body image. Unfavorable body talk has been linked to self-objectification, higher BMI, depression, and eating disorders (Arroyo & Haywood, 2012; Brown et al., 2014; Fiery et al., 2016). Using an

online survey participant (n=3892) responded to a series of vignettes that featured favorable and unfavorable body talk to determine how often an individual would engage in saying negative comments about their bodies in social settings (Fiery et al., 2016). Results of this study indicated that young adult AA females reported more experience with positive body talk when compared to young adult white females. Similarly, the study found young adult AA males had more positive body talk when compared to young adult white males (Fiery et al., 2016). The phenomenon in this study could possibly be attributed to results found by Brown et al., (2014), in which the majority of AA respondents viewed larger body types as more favorable then smaller body types. These studies support the notion that positive self-perception does not always translate into more positive health outcomes.

Childhood and Community Impacts on Health Perceptions and Beliefs

Various studies have been conducted to determine the factors that influence health behaviors of young AA adults, Brooks and Moore (2016) sought to examine the impact childhood experiences had on the perceptions of health and wellness in AA young adults. This study is particularly relevant because it utilized a qualitative approach and incorporated an HBCU student population. Considering the historical influences of slavery, systematic racism, and unethical practices in healthcare; research into how AAs cope with stress and perceive wellness is warranted (Brooks & Moore, 2016). Twenty-five AA young adults participated in the study, completing an extra credit writing narrative in which they wrote first-person narratives about experiences from childhood relating to eating habits and PA. Brooks and Moore (2016), determined that many of the

participants experienced unhealthy influences in the way food was prepared in their family homes and the lack of PA promotion from their parents, which affected beliefs currently experienced in adulthood. Brooks and Moore (2016) concluded that childhood and familial experiences have a significant impact on health beliefs well into adulthood.

An additional factor that influences health outcomes is the role a community can play in the perceptions and beliefs of young adult AAs . Wickrama et al. (2011) conducted a study utilizing the National Longitudinal Study of Adolescent Health, including both male and female participants (n= 13,500) to examine the influence of early structural community adversity (community poverty, parent employment status, and single-parent headed family structure) to determine if these factors had any long-term impact on health beliefs impacting cardiovascular health. Early structural community adversity can have a lasting impact on biologically embedded health behaviors that lead to increased CVD risk among young AAs based on the effects self-reported stressors experienced in adverse communities (Wickrama et al., 2011). The CDC (2016) reported cardiovascular diseases as being a leading cause of death among AAs with neighborhood deprivation and early structural community adversity playing a major role in chronic disease factors.

Attempting to understand the context of young adult AAs health experiences, it is important to gain insight into how environmental discrimination have influenced the health beliefs of this population (Mellman et al., 2015; Stephens et al., 2017; Wickrama et al., 2011). Determinants of health disparities are complex and can include many factors attributed to environmental, familial, and belief systems, as such Mellman et al. (2015)

examined the influence of neighborhood and posttraumatic stress and sleep patterns on dropping blood pressure in urban young adult AAs. One hundred thirty-six AA men and women with a mean age of 22.9 years completed surveys, interviews, and two 24-hour BP recordings to gauge how neighborhood environments impact health outcomes, more specifically BP (Mellman et al., 2015). BP usually drops to its lowest levels at night during sleep, however when stressful environmental factors exist residents can see spikes in BP rates that stay elevated throughout sleep and into the follow day (Mellman et al., 2015, Euteneuer et al., 2013). Results of the study indicated thirty-eight percent had adverse BP dipping ratios during nocturnal hours that correlated with stressful neighborhood environments (Mellman et al., 2015). The impact of environmental factors in AA health outcomes is evident by the results of this study and support the need for further understating how these mechanisms adversely impact communities of color, most especially young adults.

Many studies have reported the disproportionate higher rates of physical inactivity, obesity, hypertension, and diabetes amongst AA adults when compared to White Americans (Brooks & Moore, 2016; Romano & Scott, 2014). Community influences might play a more significant role in the health beliefs and perceptions of AAs, most especially those who experience structural adversities (less access to healthy foods, lack of environmental safe exercise space, poor housing, and dangerous street traffic) which can ultimately increase stress and affect physical health perceptions and associated beliefs (Wickrama et al., 2011).

In order to better understand how childhood experiences can impact health beliefs, Brody et al., (2017) examined the role adverse childhood experiences (ACEs) had on prediabetes status in young AA adults by age 25. The study was designed to understand whether involvement in a supportive parenting program would improve or decrease the association between ACEs and prediabetes status by the age of 25, with participants being placed in the support program or a control condition (Brody et al., 2017). In the conclusion of the fourteen year study, AA youth (n=390) completed a survey tool which generated an ACE score and were tested for fasting glucose levels to determine how influential ACEs were on blood sugar levels. Specific findings indicated that youth with higher ACE scores were 3.54 times more likely to have prediabetes than youth with lower ACE scores. Similar findings by Brooks & Moore (2015) and Wickrama et al., (2011), demonstrate how ACEs and structural community adversity can have a negative lasting impact on young adult AAs, however results also demonstrated that supportive parenting can positively impact health perceptions and outcomes over time.

Furthermore, Brooks (2015) examined the impact of family structure, relationships, and support on AA students collegiate experiences. Many studies suggest that familiar influence can have a dramatic impact on student health behaviors and how they adapt to a social stresses (lack of financial resources, limited healthy food options, increased responsibility) of a new campus environment (Brody et al., 2017; Brooks, 2015; & Cowie & Hamilton, 2014). In order to better understand familiar influence, Brooks (2015) interviewed (n=9) AA students currently enrolled in college to determine

how influential to the collegiate experience are familial support and family structure on academic outcomes. This study examined family structure, and types of family support on students behavioral state after enrolling in college (Brooks, 2015). Results of the study suggest that students often experience changes in familial relationships and perceived familial support after enrolling in college, as a result these changes can create feelings of depression and anxiety which lead to higher instances of students engaging in unhealthy behaviors (Brooks, 2015).

The Effects of Perceived Discrimination and Racism on Health Outcomes

Research on discrimination and health has grown over the past decade, many studies highlight the compounding effects perceived discrimination and racism have on AA adult health beliefs, behaviors, and outcomes (Chen et al., 2016; Clemans-Cope et al., 2012; Egli et al., 2011; Grollman, 2012; Stephens et al., 2017; Wickrama, 2012). The historical impact of discrimination and racism experienced by AAs is well documented, however there is still a lot to be discovered on the influence these factors have on health outcomes of AA. Historically racial groups that have been categorized as inferior have experienced worse treatment and experienced forms of discrimination across several sectors including the healthcare field (Chen et al., 2012, Stephens et al., 2017). Perceived discrimination and racism can be experienced on an individual level where internalized feelings of subornation, fear, and depression can manifest and alter health outcomes and on a societal level where resources, information, and access are withheld leading to health disparities (DeLilly, 2012).

DeLilly (2012) cited a landmark study by Jones (2000) that examined institutionalized racism, personally mediated racism, and internalized racism and the compounding effects they've had on AA populations. Institutionalized racism is evident by The Tuskegee Syphilis Experiment, conducted in 1932 in which six-hundred AA men were enrolled in a syphilis study without their consent by the US Public Health Service (Centers for Disease Control, 2011). This study was particularly racist because the AA men enrolled were denied adequate treatment for the disease and not given the option of quitting. The study was found to be ethically unjustified and discriminatory toward AA men, which has resulted in a distrust toward the healthcare system and biomedical research today (CDC, 2011; DeLilly, 2012; Jones, 2000). Personally, mediated racism is usually seen on an interpersonal level in the form of scape-goating, dehumanization, devaluation, and lack of respect toward AA (DeLilly, 2012). Finally, internalized racism can occur when members of a group who are most stigmatized by racism begin to believe negative messages about themselves and internally accept a low value of their own worth (DeLilly, 2012).

Forms of perceived discrimination can significantly influence the health of young adults and negatively affect health outcomes. Grollman (2012) used data from the Black Youth Culture Survey to determine the prevalence, distribution, and health consequences of multiple forms of perceived discrimination. A sample of young adult AAs (n = 1052) completed the survey which answered three research questions: Are there relationships associated with multiple forms of discrimination and mental/physical health? Do young adults from disadvantaged groups face greater exposure to forms of discrimination?

Lastly, to what extent do multiple forms of discrimination influence the relationship between disadvantaged status and health? Findings determined that sixty percent of respondents reported experiencing multiple forms of discrimination and controlling for sociodemographic characteristics individuals who experienced multiple forms of discrimination had more depressive symptoms and worse self-rated health (Grollman, 2012). This study was unique in that it took into account how one individual can face multiple forms of discrimination and how that multiplicity can become compounded and affect several factors associated with health beliefs and behaviors.

Similar to perceived discrimination, perceived forms of racism are a key element to better understanding why AAs are disproportionately affected by many chronic diseases, including CVD (Grollman, 2012; Hollier, 2013; Homko et al., 2012). Perceived racism is an individual's experience to race-based mistreatment which can be experienced between ethnic groups as well as within the same ethic group. Hollier (2013) used the stress appraisal and coping model to examine how perceived racism can affect the cardiovascular health of young adults. Results of this study have shown that perceived racism and the coping strategies used to address the stress of racism have negative implications for cardiovascular health outcomes amongst young adults AAs (Hollier, 2013). The historical and current effects of perceived discrimination and racism should be taken into account with the young adult population that attend HBCUs to appropriately design and delivery competent health services.

Campus Health Services Overview

Colleges are in an ideal position to promote and improve the behaviors of their young adult student population, by focusing on prevention services tailored to their needs it is a higher probability of influencing positive health behaviors (Harrington et al., 2016; Kemper & Welsh, 2010; Kwan, Arbour-Nicitopoulos, Lowe, Taman, & Faulkner, 2010; Sa et al., 2016). Campus health services have evolved over time and in this evolution colleges have sought to adapt offerings in order to meet the overall needs of their specific student population. It is general consensus that the first campus based health program begin at Amherst College in 1861 when administrators and physicians believed it was valuable to focus resources on improving and treating student health (Christmas, 2011). Initially campus health services focused on dining and campus housing facilities as a means to impose codes on behavior and in order to preserve the moral and physical well-being of students (Prescott, 2011).

More comprehensive campus health services were adopted to meet the health needs of incoming female student's due to a study by Dr. Edward Hammond Clarke, who argued the physical toll intellectual activities exuded on the body would have a greater impact on women who were more vulnerable to mental and physical breakdown (Clarke, 1873). Although these claims were unfounded they were widely accepted and led to the development of college based health programs, women's colleges, and coeducational institutions (Prescott, 2011). In response, administrators began to focus attention on interventions that balanced academics with psychological stability (Prescott, 2011). This

belief led to colleges establishing student health services to address the health needs of both male and female students.

As college enrollment continued to increase throughout the early 19th century campuses began to resemble small communities. As a result, the roles and responsibilities of campus health centers adapted to offer services that addressed the emerging health needs of students. To better serve students, campuses began to integrate comprehensive models that included health promotion initiatives, chronic disease management, and nutrition consulting. Subsequently, many universities across the country have made significant progress in delivery and evaluation of health service programs that have produced positive results in their student populations. (Christmas, 2011; Prescott, 2011). This section will include a review of the literature on clinical service design and service utilization, health education marketing toward students, and the role of technology in health promotion. Each of these sections will aid in developing a stronger understanding of how current methods can be strengthened to continue addressing the evolving health needs of HBCU students.

Clinical Service Design and Utilization of Student Health Centers

Campus based health centers are defined by what types of services they offer, the needs of the student, and the level of financial commitment by administrators (Christmas, 2011). The ACHA developed and published *Recommended Standards and Practices for a College Health Program,* a set of standards to outline how colleges should design campus health services. According to the ACHA (1977), “The program which is designed by any one institution to meet the needs of its community will not necessarily look like that of

any other institution.” While campus health services vary by institution, the basic premise of college health is the commitment of administrators and governing boards to make provisions that maintain and improve the health of students in the most relevant methods possible (Christmas, 2011; Prescott, 2011). While there is a plethora of research using study perception data, there is a limited amount of research combing student perception with physiological data such as; BMI, BP, and glucose levels (Turner & Keller, 2015).

The quality of care provided in a campus health center greatly impact the type of care students receive. College health care providers are an important asset due to the fact they are in direct contact with the students and aid them in health-related issues, help develop positive health behaviors, and build students’ decision-making capabilities to ultimately become their own health advocates (Vader, Walters, Roudsari, & Nguyen, 2011). The unique relationship between student and college health care provider was explored by Lambert & Donovan (2016), as they used a qualitative approach to understand the student-patient care experience from the perspective of eleven college health care providers. The phenomenological study revealed several factors that affect student health outcomes; health education, student advocacy, behavioral health services, relationship management, and provider reputation. Providers in student health must use a multifaceted approach when delivering care, taking into account the complexity in young adult health initiatives.

Research indicates a growing number of students seek care from campus health centers, however the literature is not extensive on how this utilization impact health perceptions and behaviors (Eisenberg et al., 2012). To understand student perception

Eisenberg et al. (2012) conducted an online survey among students with an untreated mental illness (n = 13,105) to assess stigma and identify perspectives about receiving care in a campus based health center. Although the study focused on students seeking mental health services, results were analogous with student's propensity to seek services associated with chronic disease as well (Eisenberg et al., 2012).

Similarly, Turner & Keller (2015) assessed health service utilization of college students at 4-year universities and found primary care/preventative care of chronic disease to be the most utilized campus health service accounting for sixty-percent of recorded visits. In addition, AA students utilized campus health services at the second highest rate compared to other racial/ethnic groups in the study, with White students ranking first for utilization. Although mainly used for episodic care, preventative and behavioral care are widely used services in campus health centers as well. Utilization is important in understating the capacity a student health center has to meet the needs of its campus population. In a qualitative study conducted by Lemly, Lawlor, Scherer, Kelemen, & Weitzman, (2014), medical directors (n = 153) from student health centers completed a survey which examined campus health service capacity to support youth with chronic medical conditions (YCMC). Overall 42% of schools had no method of identifying YCMC, however 31% had a system to identify YCMC and add them to a registry and 24% of student health center's actively contacted and encouraged students with chronic medical conditions to visit the student health center (Lemly et al., 2014). These studies indicate that primary/preventative care of chronic diseases to be the most

utilized service and the need for programs that identify and track students with chronic diseases.

Health Education and Health Marketing on Student Health Behaviors

Health related education and prevention programs targeted to college students are vital because students are faced with many new health challenges that can last well into adulthood (Brunt et al., 2008). With the dramatic change in environment, responsibility, and influence of decision-making college students can be influenced negatively if not presented with effective health related programs and education (Brunt et al., 2008; Strong et al., 2008). Kicklighter et al., (2011) collected feedback from thirty-four college freshmen in focus groups to gain an understanding into what influences their dietary choices and behaviors. Based on the long-table approach, this study used graduate students to conduct nutrition modules that were developed by the student health center and allowed students to analyze and discuss strengths and weaknesses of their diets and nutrition knowledge (Kicklighter et al., 2011). Following the 75-minute module which focused on making healthier food choices, portion control, and importance of eating breakfast; students reported an increased knowledge of food portion sizes and a better ability to pick healthier breakfast options (Kicklighter et al., 2011). Exploring the health behaviors of college freshman enables staff in student health centers to better understand what impacts student beliefs and influence decisions that impact student health behaviors.

Health education as a prevention method is widely accepted in the national health care system but remains underutilized on college campuses (Lambert & Donovan, 2016; Vader et al., 2011). Health center staff are strategically positioned to be the primary

professionals to create and distribute health information to students. Additionally, campus health staff seek to offer modern approaches to assist students in establishing healthy habits that last throughout the lifespan and special attention should be paid to how these messages are delivered (Lambert & Donovan, 2016). The literature examined the impact campus health services can have on immediate and long-term health behaviors of students and how they perceive health care well after they leave college (Lambert & Donovan, 2016). As such, it is imperative for health centers to have an understanding of what beliefs students hold regarding personal health behaviors and the role health education plays in this approach (Vader et al., 2011).

Most campus health centers lack consistency in health-related advertising that promotes positive behaviors, despite evidence to support the need for having health promoting advertisements on campus as identified in similar studies (Lambert & Donovan, 2016; Szymona et al., 2012). This lack of structure with how health advertising is distributed and the direct correlation with how students receive health information can provide support for administrators to consider investing in health-related advertisement policy. Supporting healthy campus polices that aid in the distribution of health information advertising can influence student health behaviors with a focus on the content of the message as well as delivery style (Szymona et al., 2012; Vader et al., (2011).

An often-overlooked factor of campus health services is the capacity of the college environment to be used in marketing, advertising, and health education. Szymona et al., (2012) assessed the health-related advertisement environment and policies on

campus related to health information marketing to students. Similar to the findings of Lambert & Donovan (2016), health information is an important factor when determining how promotion initiatives are designed and delivered. Health related advertising is an active approach of promoting a service, product, or behavior using print or electronic media with the ultimate goal of positively influencing behaviors of a targeted population (Szymona et al., 2012). Szymona et al. (2012) assessed ten ethnically diverse college campuses to determine the types, locations, and prevalence of health-related advertisements and messages on campus. The authors determined that the largest proportion of advertisement distribution was focused on diet/exercise and the majority of advertisements promoted behaviors recommended by health center staff.

In a study by Kwan et al., (2010), researchers identified what types of topics students received information about, how students received health related information, and the perceived believability of that information. Students (*n* = 1,202) completed the ACHA’s National College Health Assessment, with 46% of students reporting not receiving any health related information on campus however, health center staff were perceived to be the most reliable source of health information. Findings of both Szymona et al. (2012) and Kwan et al. (2010) highlight the effectiveness of advertising on specific health needs and the positive impact messages developed by health center staff have on student perception.

Exploring the role of Technology in Health Promotion Initiatives

Designing and delivering programs that incorporate health promotion and prevention interventions have been effectively demonstrated in a variety of student health

center settings although the literature is not extensive on HBCU health promotion programs, models used at PWIs can be duplicated to complement these diverse campuses. Similar studies have determined that most college students do not engage in adequate PA and have poor eating habits, mostly due to limited time to engage in PA, decreased access to healthy food options on campus, and minimal financial resources to purchase healthier food options (Cowie & Hamilton, 2014; Harmon et al., 2016; Nehl et al., 2012; Pauline, 2013).

Accordingly, Lederer & Oswalt (2017) explained that institutions of higher education are in a unique position to promote and protect the health and well-being of college students while using the campus environment as a setting for these efforts. One of the more utilized forms of health promotion intervention on college campuses are programs that incorporate the use of technology in design, delivery, and evaluation (Harris et al., 2018; Mary Ann et al., 2016; Miller, Chandler & Mouttapa, 2015; Marquet et al., 2018). Technology in the form of mass text messaging, social media integration, mobile application utilization, and assistive technology in tracking physiological functions have been utilized in student health promotion. Models of health promotion programming have been developed and implemented on a variety of campuses around the country, this section will explore models that incorporate technology into health delivery and how technology is being utilized to promote PA and positive dietary behaviors amongst college students.

To better understand college students, perceive certain health services, grounded theory was used to examine how students use the Internet for mental health concerns

(Chan et al., 2016). Focus groups were formed were students discussed their perspectives on using the Internet to get answers regarding mental health, results helped researchers develop a best practice theory for creating web-based mental health resource tailored to individual needs (Chan et al., 2016). Including students in program development could address certain concerns and improve utilization of initiatives developed by campus health centers (Chan et al., 2016). Similarly, a health education study used grounded theory to examine the effectiveness of mobile applications to change unhealthy student behaviors (Gowin et al., 2015). College students (n = 27) who reported using health/fitness apps participated in interviews regarding app choice, features, and behavioral goals. As a result of this study, a theory emerged that most students felt using a health/fitness app helped them identify and reach certain health goals (Gowin et al., 2015). Students identified key themes about what features they look for when selecting health related apps to use for developing an exercise routine or improving eating habits (Gowin et al., 2015; Tang et al., 2015).

Mary Ann et al. (2016) explored how text messaging can be used as a method for promoting an increase in PA amongst health profession students. Students (n=134) were divided in two even groups, while the intervention group received daily text messages encouraging PA, the control group only received text messages reminding them to report their total steps (Mary Ann et al., 2016). Although results indicated there was no significant difference in the total number of steps between groups, the most inactive participants had significant increases in steps during the study. Although text messages did not prove to be a useful method for increasing PA, the integration of a mobile

application could be an effective technology medium with college students and impact long-term behavioral change (Mary Ann et al., 2016). In another case, an investigation was conducted to evaluate the effectiveness of technology-based interventions on PA motivation and psychosocial variables amongst a group (n=71) of AA female college students using the combination of a UpBand accelerometer paired with a diet tracker mobile application (Harris et al., 2018). Although self-efficacy to exercise decreased from pre to post-test, self-efficacy increased from post-test to two-month follow-up (Harris et al., 2018). In both studies students did not show increased PA behaviors until after the study was completed, this post-test increase in self-efficacy can be latency in nature with a delay before observable difference emerge (Harris et al., 2018; Mary Ann et al., 2016).

Furthermore, 64% of college students report using mobile applications and many report using mobile applications instead of web pages, in addition over 30% have reported using a health-related application to improve health behaviors and knowledge (Hebden et al., 2012; Patrick et al., 2014). To better understand student health seeking behaviors Miller et al. (2015), created a needs assessment in which a university based mobile application was developed and evaluated to determine best practices for linking students to health promotion information. This study was unique in that it determined the most common health topics amongst students (n=219) and used this information in developing content for the university based mobile application. This example of developing a mobile application based on students' reported needs may be well accepted and utilized by students (Miller et al., 2015).

Another study conducted by Marquet et al. (2018) measured if the mobile application Pokémon Go would have any positive impact on college students PA levels. The augmented reality of this mobile application requires users to engage in PA as a means for game progression. Using an Ecological Momentary Assessment (EMA) tool and step counter installed on their mobile phones, students (n=74) were promoted three times daily to engage in playing Pokémon Go (Marquet et al, 2018). Students engaged in higher levels of PA while playing Pokémon Go during weekdays and during daytime hours, also when students played at least three different times per day their overall steps increased by 1526 (Marquet et al, 2018). Utilizing a mobile application which is developed or selected based on student feedback and encourages PA with rewards in the application can be a useful tool in health promotion amongst college students (Marquet et al, 2018; Miller et al., 2015).

The Health Status of Historically Black College and University Students

The most significant contributors of health status are lifestyle choice and behavior which in most cases impact young adults more significantly when they enroll in college due to the influences of a foreign environment, limited parental influence, and sudden freedom of choice. College students often times arrive on campus with health beliefs and behaviors learned from their home environment, familial influences, and socioeconomic ideologies that have shaped what they perceive to be healthy behaviors and beliefs (Brooks & Moore, 2016; Sa et al., 2106; Yahia et al., 2016). Although several research studies exist on college student health there is a limited amount of information on AA majority student bodies and what influences their beliefs and behaviors. Understanding

the impact of preconceived health beliefs on incoming students can lead to successful implementation of effective campus-based health promotion programs (Yahia et al., 2016).

The limited amount of research done on health behaviors and beliefs of HBCU college students led to a study by Hayes et al., (2009) in which a non-random sample of 1,115 freshman were surveyed to gain insight into their knowledge of health topics including, disease risk, weight perception, personal/family medical history, and eating habits. Understanding how the college setting can influence the formation and sustainability of student's ideas and behaviors about health can provide institutions with the baseline data needed to develop health promotion programs unique to AA student populations (Hayes et al., 2009).

The vast majority of students participating in the survey were AA (96%) and incoming freshman from six private HBCUs in a large southeastern state. Researchers administered the 169-question Centers for Disease Control Youth Risk Behavior Surveillance Survey and obtained a 46% response rate. Of the noted response categories 28% rated their health as excellent while 40% and 24% rated their health as very good and good respectively (Hayes et al., 2009). In regard to health knowledge about 56% of students reported they did not know the correlation between sodium intake and adverse health problems and an even lower percentage (23%) expressed their knowledge of the health benefits of eating proper amounts of fruits and vegetables. Also, amounts of moderate to vigorous PA were questioned and 42% of students responded they participated in vigorous PA that made them sweat for at least 30 minutes on at least three

days a week (Hayes et al., 2009). Although a significant percentage of students were classified as overweight (33%) according to body mass index (BMI), a larger portion (51%) self-reported as their weight being normal based on individual perception of body types. As a result, a student having a more positive self-perception of health does not automatically guarantee a lower BMI.

Health behaviors have commonly been the focus of college student health research, with an understanding that influencing young adult belief systems can have an impact on health outcomes later in life. Kemper & Welsh (2010) surveyed and collected data on PA behaviors via pedometers from 106 HBCU students over the span of five weeks. The study was conducted to assess psychosocial correlates of PA in order to develop campus based health programs on a rural HBCU campus. Results indicated less than half of participants met the recommended amounts of moderate to vigorous PA (Kemper & Welsh, 2010). Over fifty-percent of student participants reported being open to exercise and receptive to messages that promoted PA on campus, a positive indication for health centers designing programs for HBCU students. Although the majority of students expressed positive feelings about exercise and the perceived benefits most did not achieve the recommended levels. Outcomes like this were similarly seen in more recent HBCU studies that focus on PA behaviors, this phenomenon warrants further investigation into student belief systems and how to design appropriate interventions (Cowie & Hamilton, 2014; Harmon et al., 2016; Mailey et al., 2012; Nehl et al., 2012).

Expanding on the need for understating behavioral influences in exercise and diet presented by Kemper & Welsh (2010), other studies focused on individual influence such

as social networks on perceived influence amongst college students. Harmon et al., (2016) examined the various social networks college students are connected and determined the level of influence these networks had on these students' health behaviors. The study was unique in that it sought to understand specific social influences that impacted college students' diet and PA behaviors by comparing sources of the influence and the students' own behavior, and associations with meeting diet and PA recommendations. Data was collected on forty participants who rated nominees (family, college friends, high school friends, significant others) influence on their diet behaviors and PA as well as compared the nominees' behaviors to their own (Harmon et al., 2016). Results of the study determined that significant others had the largest influence on student food choices and propensity to exercise the recommend amount, a possible variable to consider when approaching students about health behaviors.

Health behaviors have been the primary focus of college student health research, although a limited amount of studies have focused on HBCU students the results of the literature at large can yield significant findings relevant to AA student populations. For example, Harrington & Ickes (2016) examined the association between BMI and health behaviors amongst a sample of 758 college students. Although only 19% of respondents were non-white, results of the study proposed that there is a limited difference in reported health behaviors between overweight/obese students when compared to healthy weight students, irrespective of the students' race. The interpretation of these results is very similar to studies conducted on HBCU campuses in which college students do appear to be concerned with meeting healthy living recommendations (Hayes et al., 2009).

Similarly, in the study conducted by Brooks & Moore (2016), young adults who experienced ACEs presented with higher levels of negative health behaviors but were still concerned with developing chronic diseases when surveyed. Reinforcing the idea that researches must understand the attitudes, perceptions, beliefs, & behaviors of college students in order to effectively influence behavioral change in how services are designed and delivered in student health centers.

PA is considered to be one of the most important standards in maintaining good health (Cowie & Hamilton, 2014; Harmon et al, 2016; Kemper & Welsh, 2010; Pauline, 2013). In spite of the well-known benefits of PA, a growing number of young adults (18-24) are not getting the recommended 150-minutes per week (Pauline, 2013). Consequently, this negative trend is similar to young adults on college campuses and is troubling because many health behaviors are established during the college years. Pauline (2013) surveyed undergraduate students (n=871) of all races, AAs represented a small segment (14%) of the study group in which PA behaviors related to motivation and self-efficacy were assessed. Similar to findings by Topè & Rogers (2013) in which (n= 376) HBCU college students were surveyed, results found males engaged in more moderate PA then females, and overall less than half of students surveyed engaged in ACSM recommended amount of vigorous activity weekly. Both studies noted similar results of an overwhelming majority of students not getting the recommended amount of PA, and females engaging in less amounts of PA than males (Pauline, 2013; Topè & Rogers 2013).

When designing PA programs, it is important to understand gender and ethnicity and the role both play in understanding psychological determinants of PA behaviors. Nehl et al. (2012) conducted a similar study to Pauline (2013), comparing influences of PA amongst male and female college students, however this study was unique due to the fact almost half of the participants were AA (48.6%). The majority of college student health research is conducted at PWIs and usually has low percentages of AA student participation (Harrington & Ickes, 2016; Johnson & Nies, 2015; Stephens et al., 2017; Yahia et al., 2016). Using a Social Cognitive Theory (SCT) questionnaire, Nehl et al. (2012) sought to predict student propensity towards engaging in consistent PA over a two-month span. Results of the study demonstrated that self-efficacy was the most influential correlate of PA over gender and ethnicity. It is important to note that AA women still had the lowest self-reported scores of PA and should encourage further studies to examine what factors dictate these types of results.

The literature has suggested that differences exist in factors that influence certain health behaviors between racial/ethnic groups and these differences must be addressed when developing initiatives focused on health promotion. As such, examining results from large scale studies which present data on AA students can have a positive impact on understanding health behaviors of large populations of HBCU students. Egli et al. (2011) surveyed (n = 2,199) college students to determine exercise motivators to PA based on age, sex, and race at a PWI. The results of the study determined that majority of students were influenced by positive health status, stress management, and consistent energy levels as the most influential factors in exercise motivation (Egli et al., 2011). However,

AA students were more motivated to exercise due to health pressures, ill health avoidance, and nimbleness. Results of this study further demonstrate the need for initiatives that support the underlying factors found to impact the individual needs of specific populations.

The Health Status and Health Outcomes of Historically Black College and University Students

AA students attending HBCUs are faced with specific health challenges and more often come from varied backgrounds that have higher rates of chronic disease prevalence (heart disease, obesity, diabetes) when compared with data of black students who attend PWIs (Hayes et al., 2009; Johnson, & Nies, 2015; Sa et al., 2016; Topè, & Rogers, 2013). According to The Centers for Disease Control (2016), over one-third of all adults are obese, and AAs made up 50% of these reported cases. The National Center for Education Statistics (2015) reported there were 293,304 students enrolled in HBCU's in Fall 2015, of that total 223,515 were AA. The overall health of HBCU students will be explored in this section, and due to the limited amount of research done on this subject, studies from 1997-present will included.

The landmark study conducted by Fennell (1997) examined the results from the National College Health Risk Behavior Survey, marking the first national collection of HBCU student health data. An important factor in understating the behaviors that influence HBCU student health behaviors, administrators' must gain insight into what perceptions influence their health status. Similar to what Brown et al., (2014) determined, it is imperative that student belief systems play a role in influencing how health services

are designed. Using data markers from The National College Health Risk Behavior Survey, 996 students from eight HBCUs completed questionnaires focusing on dietary behaviors, PA, and several other categories of health indicators (Fennell, 1997). Although this study was conducted over ten years ago, the quality of data gained on HBCU student health behavior has influenced similar research and helped shape health delivery methods focused on black student populations. Results from the study concluded black women were more likely to view themselves as overweight, one third of HBCU students reported they were trying to lose weight, while more than one third of students had not participated in PA for more than 30 minutes over the past seven days (Fennell, 1997). More recent studies indicate rates of PA within the past seven days still remains low amongst HBCU student populations and more female students still view themselves as being overweight compared to male students (Brooks & Moore, 2016; Brown et al., 2014; Harrington & Ickes, 2016).

With the limited amount of studies examining the health of HBCU students, it is important to gain insight from studies that focus on particular health behaviors of this population to develop a similar framework for designing student health center initiatives. The overall BMI in the United States has steadily increased over the past three decades with an estimated 69% of adults being overweight or obese (Center for Disease Control, 2016). While all racial/ethnic groups are affected by this epidemic, it is more prevalent in AA populations, most especially adolescent college students. The disparity is most widely seen in which AA students (38.3%) compared to white students (26.7%), Hispanic (30.2%) and Asian (16.4%) reported being overweight/obese (Sa et al., 2016). The

transition period between high school and college is a pivotal period for students developing poor dietary habits and engaging in low amounts of PA (Wengreen & Moncur, 2009). As such, this transition period would be an ideal time for student health centers to impact health behaviors associated with diet (eating recommend amount of fruit/vegetables) and propensity to exercise (recommended 30 minutes of PA daily).

Sa et al., (2016) sought to examine the correlates of overweight, obesity, and PA among HBCU students. A 75-item questionnaire was completed by 268 HBCU students, using the Personal Wellness Profile to gain insight into physical inactivity, family income, and dietary habits (Sa et al., 2016). A familial history of obesity, skipping breakfast, high amounts of caffeinated drinks, lower family income, and cigarette smoking were shown to have the most significant impact on HBCU student PA behaviors (Sa et al., 2016). The results of this study further implicate the need for HBCUs to focus health delivery efforts on health promotion initiatives that target goals presented in Healthy Campus 2020.

The poor dietary and exercise habits of an individual can lead to a cluster of interrelated chronic diseases (diabetes, heart disease, and stroke) referred to a Metabolic Syndrome (MetS). As with previous studies on HBCU student health, there is limited research on the prevalence rate of MetS among students enrolled at an HBCU. Topè & Rogers (2013) studied the prevalence and gender differences in components of MetS amongst a sample of HBCU students. Many of the risk factors for MetS (unhealthy diet, minimal PA, high levels of alcohol/tobacco use) are prevalent amongst college students, and most times higher in AA college students, these risk factors should be the focus of

health promotion campaigns (Sa et al., 2016; Wengreen, & Moncur, C, 2009). Three hundred and seventy-six HBCU freshman completed the cross-sectional study which included anthropometric screenings of body weight/circumference, and BMI (Topè & Rogers, 2013). Clinical screenings were also conducted and included data from blood pressure, fasting and glucose concentrations (Topè & Rogers, 2013). Using a Fisher exact chi-square test to analyze for MetS criteria, 31.4% of the sample population had at least one criterion for MetS, while 20.7% had two criteria (Topè & Rogers, 2013). Estimations for MetS in young adults across all ethnicities ranges from 0.6%-13% (Haung et al., 2007). HBCUs are very relevant in impacting health behaviors of young AAs, most especially in prevention of risk factors associated with MetS.

Examining specific chronic disease as it relates to HBCU students is generally the approach most used when studying this population (Topè & Rogers, 2013; Wengreen & Moncur, 2009; Winham, & Jones, 2011). With young adult AAs having higher prevalence of metabolic chronic disease when compared to the general population, research on HBCU student health is beginning to focus on chronic disease. Valentine et al., (2012) developed a study to examine the risk factors for CVD (CVD) amongst HBCU students. As Topè & Rogers (2013) discovered with MetS, CVD risk factors can have the same types of behaviors as predicators. Through an open recruitment process Valentine et al., (2012) assessed ninety-one students using a health questionnaire, BMI/body fat measurements, BP, blood sugar, and electrocardiograms. Of the total participation, 63% of students were either overweight or obese, fifty-nine students were at very risk or high risk for developing diabetes, and twelve students had border-line high values for total

cholesterol (Valentine et al., 2012). Similar to findings by Wengreen & Moncur (2009), sedentary lifestyles, high rates of obesity, and poor dietary choices were high amongst the majority of respondents (n = 53%) and stood out as key risk factors for developing CVD (Valentine et al., 2012).

Owens (2008) developed an impactful study to examine the rates at which overweight or obese HBCU students were diagnosed with diabetes mellitus (DM) and if higher risks were associated with low PA levels. In order for campus health services to have a positive impact on choric disease management, the idea has been consistent throughout the literature that focus should be placed on managing specific correlates to health behaviors (Owens, 2008; Topè & Rogers, 2013; Wengreen & Moncur, 2009; Winham, & Jones, 2011). Data was collected from one-hundred and one respondents in a freshman seminar class, using selected questions from the CDC's Behavioral Risk Factor Surveillance System (BRFSS). Owens (2008) found 40% of respondents to be obese and 28% were determined to be higher risk for DM. Similar to other studies conducted on the AA population in general, HBCU students reflected comparable health profiles with large percentages having negative health behaviors (sedentary lifestyles, poor dietary habits, limited PA) that ultimately place them higher risk for developing a chronic disease (Brooks & Moore, 2016; Owens, 2008; Stephens et al., 2017; Winham & Jones, 2011). Studies that examine obesity amongst AAs all identify how negative health behaviors have the most significant impact on health status of participants.

Health Perceptions and Influences of Body Image Among HBCU Students

The literature on health perceptions and influences of body image among HBCU students is limited, therefore this subsection will include landmark studies from the 1994 to present and consist of studies conducted at PWIs that are comprised of black students. Many factors determine if a college student will change their behavior (social media/digital imaging, marketing efforts, peer influences) and this probability increases if the health concern is perceived as relevant by the student (Brooks & Moore, 2016; Brown et al., 2014; Ford & Goode, 1994).

In order to better understand AA college student's health behaviors and perceptions of certain health related issues, Ford & Goode (1994) conducted a landmark study in which comparisons were made between HBCU student health perceptions and national survey statistics of PWI students. The study was unique in that eighty-three percent of respondents were AA, a relatively high percentage when compared to the majority of student health research, also the research questions sought to determine what students felt their peers needed more information about, this method encouraged higher quality feedback because it didn't directly implicate a lack of knowledge on the students part regarding self-perception (Ford & Goode, 1994). Results of the study indicated that twenty-seven percent of student perceived themselves to be overweight, and similar to more recent studies by Brown et al. (2014) and Topè & Rogers (2013) a larger percentage of females than males reported being overweight.

Having an accurate perception of ones on body weight is an important factor in maintaining a healthy weight and having a positive body image. Osborn et al. (2016)

explored the relationship between actual body weight, perceived body weight, body satisfaction, and related health behaviors and found that students who were overweight reported being less satisfied with their body image and AA students reported having more body fat. Cigarette smoking, stress eating, and significant amounts of time spent watching television were reported as being the most significant influences of increased rates of obesity amongst AA students (Osborn et al., 2016). In part, obesity can be attributed to self-perception of body image which often impact how individuals see themselves (Brown et al., 2014). In order to properly change behavior associated with diet and exercise it is important to consider the role perception of one's body image plays in the prevalence of obesity in HBCU students (Brown et al., 2014). Utilizing the Pulvers Body Image Scale (PBIS), Brown et al., (2014) collected data on 356 freshman AAs attending an urban HBCU to assess gender differences and their association with body image perception, results indicated male freshman identified larger body images as being healthy more often when compared to female HBCU students.

Body image is mostly a psychological construct and can result in increased prevalence of chronic disease when inaccurate self-perceptions exist. Often times, obese and overweight female HBCU students incorrectly self-report their weight as being normal (Williams-York et al., 2013). This belief has been attributed to many HBCU students not perceiving weight as an indicator of being healthy, often times resulting in higher rates of obesity amongst this population. For example, obese AA college aged females tend to underrepresent their weight by up to four pounds resulting in an underrepresentation of self-reported BMI (Amuta et al., 2016; Powell-Young, 2012).

Consequently, these inaccurate perceptions tend to be prevalent in obese and overweight HBCU students and get worse over time. Earlier research has demonstrated similar results with HBCU students having high BMIs but not viewing themselves as overweight or obese (James & Bonds, 2006). This phenomenon is consistent with current literature findings that suggest HBCU students, most especially AA women who are obese or overweight have higher levels of body satisfaction when compared to white female college students who attend PWIs (Brooks & Moore, 2016; Brown et al., 2014; James & Bonds, 2006).

Incorporating the Health Belief Model in Designing and Delivering Interventions

The concept of the HBM originated from a set of independent research problems first proposed by a group of investigators in the Public Health Service in 1966 to better determine individual propensity toward adopting positive health behaviors (Rosenstock, 1974). The HBM is focused on the attitudes and beliefs of an individual to take a health-related action toward some negative behavior (Jones et al., 2014). The HBM had evolved over time to address a plethora of short-term and long-term health behaviors. The HBM is structured around six constructs representing a perceived threat and expected benefit: *perceived susceptibility, perceived severity, perceived benefits, perceived barriers* were initially established to account for individuals "readiness to act" (Jones et al., 2014; Romano & Scott, 2014; Yahia et al., 2016). Additional constructs were added in the late 1980s; *cues to action* was added to generate a plan for taking action, while *self-efficacy* focused on a person's confidence in their ability to be successful in completing the

adopted health action (Rosenstock et al., 1988). Figure 2 depicts the primary constructs of the model.

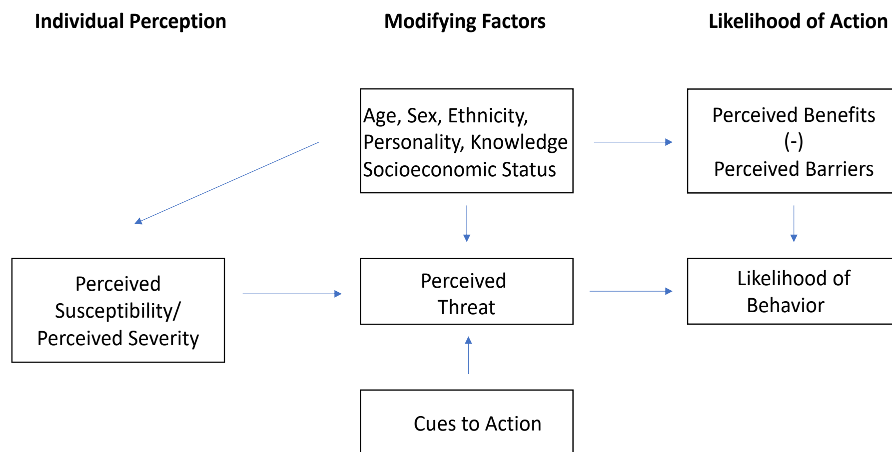

Figure 2: The health belief model.

The HBM has been used for over 40 years to identify impediments to adopting healthy behaviors, however little studies have focused on the HBMs utility in designing interventions. Jones et al. (2014) cited Carpenter's 2010 study in evaluating the effectiveness of HBM interventions in improving adherence amongst a young adult population. The HBM was determined to be an effective model an understanding the dynamics of human health behavior, however the application of the HBM in intervention design was underutilized (Jones et al., 2014). The researcher argued that the HBM would be a more successful behavioral change technique rather than using it to design an adherence-focused intervention.

Jalilian et al. (2014) conducted a study to determine the effectiveness of a self-management educational program on diabetic patients in which the HBM was used in designing the intervention. Results of this study showed it was beneficial when developing an intervention to include aspects of the HBM, more specifically *perceived severity* and *perceived susceptibility* (Jalilian et al., 2014). Although this study was conducted in Iran and focused on diabetic patients, aspects of the model can aid researchers in understating the HBM as it relates to intervention design for managing chronic diseases. Similar to Jalilian et al. (2014), James et al. (2012) explored using the HBM to develop health behavior interventions for a specific demographic. Using seven focus groups made up of fifty AA women, researchers identified key beliefs that can impact culturally specific program design (James et al., 2012). Although this study was instrumental in identifying key weight-management beliefs of AA women, the study did not test these beliefs in program adherence or in the context of an intervention.

The HBM has also been used as a theoretical framework to examine college student's perceptions of their weight management beliefs and how challenges on campus can impact these beliefs. In a study conducted by Das & Evans (2014), the HBM was incorporated in a nominal group technique session in which first year students (n=45) were given the opportunity to discuss benefits and barriers to weight management. Of the HBM constructs examined, *perceived susceptibility and severity* were shown to have the most significant impact on student perception of physical inactivity and poor dietary habits (Das & Evans, 2014). While *perceived susceptibility and severity* were constructs seen as most influential, it is important to note that *self-efficacy* regarding students who

lack knowledge about proper eating habits should be further explored as part of changing eating behaviors. Although this study was essential to understanding specific health outcomes, the focus was not on health behaviors.

Furthermore, other studies have looked at the HBM as a framework for intervention design. McArthur et al., (2017) sought to identify the weight-related beliefs of undergraduate college students and test the constructs of the HBMs influence on BMI. A cross-sectional online survey was administered to college students (n = 516) at a university in North Carolina testing *perceived severity, susceptibility, barriers, benefits, and internal and external cues to action.* The results of the study yielded that the strongest beliefs were influenced by benefits of eating healthy and PA, while beliefs about barriers to adopting positive behaviors had the weakest influence on students BMI (McArthur et al., 2017). Implications for research on the HBM can be used in designing weight-management interventions for college students, and aid in increasing understanding of how the HBM can be used in program design to ultimately impact student health behaviors (Das & Evans, 2014; Jones et al., 2014; McArthur et al., 2017).

Summary and Transition

The literature review on HBCU student health is reflective of research collected from scholars, journals, and studies on the health of the young adult AA population as a whole, results suggest an increased need for services focused on health behavior and targeting chronic diseases (e.g. obesity, diabetes, MetS, CVD). The review indicated that HBCUs are positioned to impact the health beliefs and behaviors of young adult AAs, through targeted health promotion activities in which negative trends can be reversed and

have a lasting influence on the health status of AAs as a whole. In order for campus health services to have an immediate and long-term effect on the health beliefs and behaviors of HBCU students, the literature has demonstrated a need for culturally specific programming in which specific risk factors are considered in design and implementation.

Exploring the health beliefs of young adult AAs was essential in this literature review due to the limited research on HBCU students specifically. This literature review highlighted childhood and community influences on health beliefs of young adults and how these influences can be shaped by perceived discrimination and racism. Although literature on young adult AAs was included to identify themes and trends, many of the same findings were seen in research conducted on HBCU students. From the studies in this review it was determined that many of the issues experienced by young adult AAs is related to what HBCU students experience as influences that shape their belief systems. For example, we know that lack of access to healthy food options, limited time to exercise, and low perception of susceptibility & severity were the leading causes for young adult AAs having worse health outcomes. Finally, it is known that HBCUs are underrepresented in student health research and the majority of research conducted on student health behaviors was done at PWIs with minimal AA student representation.

Although there is a plethora of research on health attitudes, perceptions, beliefs, and behaviors of AAs little is known relating to: (a) the impact community, familial, and society factors have on the health beliefs of HBCU students; (b) how the HBCU campus environment can impact student health behaviors to change negative behaviors and have

a lasting effect; (c) what role HBCU campus health services have in positively influencing these behaviors related to food choice and propensity to engage in PA. The correlation between health outcomes of young adult AAs and HBCU students was discussed in this review to better understand how this study could translate to young adult AAs not enrolled in an HBCU for the purposes of program development.

In Chapter 3, I will introduce the research design and discuss methodology, theoretical framework, recruitment processes, and the data analysis procedures. Chapter 3 will establish the groundwork for conducting this qualitative study in understanding the impact of campus health services on the attitudes, perceptions, beliefs, and behaviors of HBCU students.

Chapter 3: Research Method

Introduction

The objective of this research was to understand the impact of campus health services on the attitudes, perceptions, beliefs, and behaviors of HBCU students. In this study I used the HBM as the conceptual framework and qualitative description as the research methodology. In this chapter I describe the research design and rationale used to answer the research questions. In this chapter I also discuss the data collection process, the role I played as the researcher, issues of trustworthiness, participant selection, and ethical practices associated with participant involvement. The chapter concludes with a comprehensive summary and transition to Chapter 4.

Research Design and Rationale

The purpose of this study was to understand how HBCU student health behaviors are impacted by services delivered by campus health centers. This study answered the following research questions:

RQ1: What community, familial and societal life experiences have shaped HBCU student health beliefs about diet and exercise?

RQ2: How does the campus environment and campus health services specifically influence HBCU student dietary health and PA behaviors?

Well defined research questions in qualitative research shape the direction of the study and better inform the interview questions in both individual interviews and focus groups (Creswell, 2013; Merriam & Tisdell, 2015). As such, a qualitative descriptive approach allowed me to understand how certain influences have shaped the belief

systems of HBCU students and what a campus health center can do to better address these behaviors based on student perception. Qualitative descriptive research is important to understanding human experience and can provide insight and meaning from the perspective of the individual (Merriam & Tisdell, 2015). In this study I conducted two semistructured focus groups at a midsize HBCU in the Southeastern State of Alabama to gain in-depth insight into student health beliefs that have been shaped by their life experiences and to understand the role campus health services play in influencing these beliefs. Due to the fact that qualitative description research is rooted in empowering the individual to be an active participant rather than a research subject, I developed interview questions to generate feedback leading to a naturalistic inquiry and richer understanding of student experience (Colorafi & Evans, 2016; Patton, 2015). Interviewing and focus groups have been used in qualitative descriptive studies to understand attitudes, perceptions, and behaviors (Corbin & Strauss, 2015; Miles et al., 2014; Sandelowski & Leeman, 2012). As such, I conducted two focus groups to understand how HBCU students feel about the campus environment, in particular, how the health center influences their belief systems and behaviors of engaging in exercise and their dietary habits.

I used qualitative description was the research tradition and methodology for this study. Sandelowski's (2000) seminal publication described qualitative description as an inclusive method that allows the researcher to present a reasonable combination of sampling, data collection, analysis, and re-presentation of findings. Qualitative description allowed me to provide a comprehensive summary of HBCU student

experiences in the everyday terms of how students perceive, interact, and utilize campus health services as they relate to dietary habits and propensity to engage in PA. Using Sandelowski's (2010) publication expounding on qualitative description, Colorafi & Evans (2016) explained that qualitative description is an ideal method in health environments due to the fact it provides factual responses to inquiries about how people feel about a particular space, what rationale they have for using that space, and factors that can hinder use. Finally, I chose qualitative description methodology and research tradition for this study because it provided rich descriptive content from the students' perspective, and it allowed me to incorporate overtones from other methods without inappropriately naming or implementing these methods to answer the research questions of this study (Colorafi & Evans, 2016; Miles et al., 2014; Sandelowski, 2010).

Role of Researcher

I am the director of student Health & Counseling Services at site institution. My role is administrative and did cause a patient/provider relationship conflict of interest with any participants. Although my position operates on campus, I do not have any supervisory or instructor relationship with student participants. My role as researcher was as an observer during data collection in which I facilitated semistructured focus groups where all participant feedback was collected, analyzed, and coded. In order to increase the number of student participants, I offered a $5.00 gift card to each participant at the conclusion of the study. Lastly, in order to increase the likelihood that participants answered honestly, I explained that all data collected and transcribed would be anonymous and confidential.

Methodology

In this section, I discuss the methodology for this study including subsections on: participant selection logic, instrumentation, procedures for recruitment, participation, data collection, and a plan for data analysis. A goal of qualitative description is to provide a rich explanation of an experience in easy to understand language about a phenomenon where little information is known (Bradshaw, Atkinson, & Doody, 2017).

Participant Selection Logic

I selected student participants using purposive sampling. This method allows for rich in-depth exploration into the phenomenon of being an actively enrolled HBCU student and familiarity with services offered at the campus health center. Purposive sampling was important in this particular study because it allowed me to determine student participants based on their rich experiences, for example, time enrolled in college, student health service exposure, and utilization of campus health services. The assumption is that including certain criteria for participants will aid in creating a deeper understanding of the research questions posed in this study (Bradshaw et al., 2017). As such, inclusion criteria for this study were: (a) be a currently enrolled student at the HBCU with full or part-time status (b) self-identify as Black and/or AA (c) be over the age of 18 at the time of data collection (d) be an undergraduate with Freshman, Sophomore, Junior, and/or Senior status (e) and, have familiarity with campus health services (attended an event sponsored by campus health services, visited for a medical appointment, or be familiar with flyer and/or social media post from campus health). In order to ensure participants met the inclusion criteria, I listed criteria on recruiting

materials and had students complete demographic information prior to beginning each focus group. All recruiting occurred on the HBCU campus during the academic school year using active and passive methods of recruitment. The HBCU used in the study is a midsize public university located in the Southeast United States. The majority of students who participated were residents of Alabama, Georgia, Mississippi, and Tennessee. I obtained approval to recruit on campus from the vice president of student affairs for the University (Appendix A).

It is important that the sample size and technique are reflective of the research design and research questions (Bradshaw et al., 2017). Qualitative samples are usually small due to the emphasis on intensive engagement with participants, and as a result focus groups can vary in size from five to 10 individuals (Patton, 2015; Yancu et al., 2011). Qualitative data sets are usually drawn from smaller samples than in quantitative research; however, this smaller sample includes richer, more detailed descriptions of an individual's experience (Levitt et al., 2018). According to Sandelowski (2000, 2010), different qualitative sampling strategies can be used in qualitative descriptive studies including determining number of participants and rationale. Ensuring saturation and to encourage synergy amongst participants, a focus group with 6-10 participants will best serve the research purpose and best answer the research questions (Colorafi & Evans, 2016; Creswell, 2013; Sandelowski, 2010).

Saturation in this study allowed for an iterative process of inferences with which I was able to better analyze the data by identifying patterns associated with the individual student experience, which allowed me to develop a better understating of the whole

phenomenon of experiences with student health services (Levitt et al., 2018; Osbeck, 2014). According to Flynn et al. (2018), focus groups can range in time from 30 minutes to 1 hour 20 minutes. Guest, Namey, Taylor, Eley & McKenna (2017) Scott et al. (2015) found better quality of data was collected when focus groups did not exceed 1 hour. As a result, I held two focus groups of nine students with each group lasting no more than 2 hours. Students who responded first to the request and met the inclusion criteria were selected for the study.

Instrumentation

In most qualitative studies, the instrument of choice is the human observer (Bradshaw et al., 2017; Sandelowski, 2010). The instruments I used for this study were a participant demographic questionnaire and a focus group interview guide (Appendix B & C). Both tools have been developed and reviewed by myself, my Chair and methods committee member; additionally, an expert qualitative research faculty member from the HBCU reviewed both tools used in study. Sandelowski (2000) and later Colorafi and Evans (2016) suggested semistructured open-ended interview questions be used to avoid limiting potential responses and to encourage participants to express themselves honestly and openly during the focus group discussion. Group dynamics and synergy generated during focus group can elicit in-depth thought and discussion because it is expected that participants can build off each other's ideas (Watkins, Green, Goodson, Guidry, & Stanley, 2007). As such, I used the HBM as a framework to shape focus group questions (Appendix C) in order to solicit a discussion around HBM constructs: (a) perceived susceptibility (b) perceived severity (c) perceived barriers, and (d) self-efficacy. I

developed questions based on the topics identified in review of the literature and sought to generate discussion around how students felt societal, community, and familial experiences had shaped their health beliefs and how the campus environment, that is, student health services, has impacted these beliefs and behaviors about diet and exercise.

Procedures for Recruitment, Participation, and Data Collection

I used both passive and active forms of recruitment in order to ensure participation was sufficient. Yancu et al., (2011) discovered that major barriers exist to recruiting AA college students in health service research on an HBCU campus including distrust, lack of understanding of the research process, and logistical concerns. In order to overcome these perceived barriers, a passive strategy of recruitment included posting flyers in high student traffic areas (e.g., bus stops, dining halls, residence halls, and student wellness center) and an active strategy of engaging with various faculty to speak directly to potential student participants during their class periods. I also contacted student organizations on campus informing them of the study using a recruitment flyer. Prior studies have suggested that HBCU students are more likely to participate when certain culturally specific factors are included in recruitment such as culturally competent verbiage, images of AA students, and rationale of how study will benefit the community at large (Vader et al., 2011; Yancu et al., 2011). Lastly, to increase participation I provided students information on the research process, details on how $5.00 gift card incentives would be awarded, and how the outcomes of the study could potentially impact other HBCU students (Yancu et al., 2011). Due to the nature of specified research

questions, I only included students who met the specified criteria, and all data was collected during 2018-2019 academic semester.

Recruitment flyers had contact information to allow students an opportunity to either contact me by phone, email. Interested students who contacted me will received instructions for next steps via a follow up email. I used the follow up email to explain the purpose of the study, provide background information on the importance of the study, and explain the focus group procedures; a method Yancu et al. (2011) recommended when engaging HBCU students in health service research. Two semi-structured focus group were conducted with actively enrolled HBCU students who meet the eligibility criteria per group. The focus groups were held after normal scheduled class time between 5:00 PM-8:00 PM CST and held in a privately located conference room in the Student Wellness Center, with each focus group being scheduled for no more than 2 hours. Prior to beginning the focus group, students were given (a) informed consent to sign (b) demographic questionnaire (c) printed copy of focus group questions and (d) researcher contact information.

Data collection occurred during scheduled focus group, and I audio recorded and keep notes of the conversation to ensure no important information was omitted. The focus group was scheduled for two-hours in order to allow adequate time for each participant to contribute. Upon exiting the focus group, individual participants were given time to debrief and to ask follow-up questions and offer reflection of the entire process. Following the focus group interview I transcribed the audio using a paid transcription service, provided student participants a written transcript, and all students were notified

via email and text message to receive $5.00 gift card to the campus bookstore. In the event more details are needed, or clarification on certain questions are necessary; follow-up interviews will be scheduled with certain participants or the entire group if necessary. I planned to notify students via phone or email and schedule follow-up within two weeks of the initial focus group.

Data Analysis Plan

This qualitative descriptive study using semi-structured focus groups was designed to understand the impact of campus health services on the attitudes, perceptions, beliefs, and behaviors of HBCU students. Qualitative content analysis is a strategy most commonly used in qualitative descriptive studies to summarize the informational content of the study (Sandelowski, 2010). Researchers have suggested beginning with a list of predetermined codes based on the literature (deductive reasoning) (Colorafi & Evans, 2016; Miles et al., 2014), however it has also been discussed that codes can be systematically applied but should be generated from the data over the course of the study (inductive reasoning) (Sandelowski, 2000, 2010). As a result, I employed both techniques where a small selection of predetermined codes were used, and more expansive coding categories emerged as data was collected and analyzed. I ensured this process of descriptive analysis by keeping a codebook in which predetermined codes generated from literature review and codes that emerge during analysis were kept. According to Sandelowski (2000, 2010) a qualitative codebook is expected to evolve as the research progresses, as a result I maintained flexibility in the development and utilization of the book.

Due to the qualitative nature of this study, I employed an inductive approach to the reasoning in which I collected data, analyzed patterns, then generated an understating of this population from the codes and themes that emerged. Hayes et al. (2018) explained this approach as moving from specific to general in which I began with understating student experiences then generating a more precise understanding based on an analysis of this feedback.

I followed Colorafi & Evans (2016) eight-step data analysis method, which incorporates Creswell's (2007) widely used six-step method of qualitative data analysis. I slightly adjusted this method in the beginning phases by including the use of NVivo at the onset of data analysis and only incorporate six-steps for this study. The two steps being omitted from this study are; step three which requires the researcher to format the document with wide right margins, a step widely used when hand coding. Also, step four which follows a traditional method of hand coding where the researcher develops meaning units. Colorafi & Evans (2016) explained that data analysis can be adjusted to fit the study and whenever coding is being done using software.

As the researcher, I first identified personal experience to highlight and limit any personal bias. Secondly, I grouped together like themes and phrases that emerged which were conceptually similar, while including any predetermined themes that emerged from the literature review. Next, I formatted the transcribed data into the NVivo software and begin searching for both predetermined codes generated from similar themes that emerged during data collection. Marginal remarks are important in analysis because they offer new interpretations and help draw connections with other parts of the data (Miles et

al., 2014). Although the fourth step in Colorafi & Evans (2016) approach calls for the researcher to divide sentences and paragraphs into meaning units, I skipped this step in my data analysis plan and instead incorporated a qualitative content analysis approach. Willis et al., (2016) and Sandelowski (2010) recommended a qualitative content analysis approach for studies employing a qualitative descriptive method to better describe the individual experience in a particular setting. The fifth and sixth step involves organizing codes into conceptually similar categories, Corbin & Strauss (2015) refer to this as pattern coding which is a way of grouping data into a smaller construct. During this step I again incorporated NVivo software to better organize and sort similar codes. Step seven involves the use of analytic memoing, a method to allow for reflection and deeper interpretation of the data by myself. This process is used in qualitative description analysis is ongoing and will be utilized throughout data collection and continuing during the findings write-up (Sandelowski, 2010). Lastly, I created a data display to help me draw conclusions, categorize, organize, and further analyze the data (Colorafi & Evans, 2016).

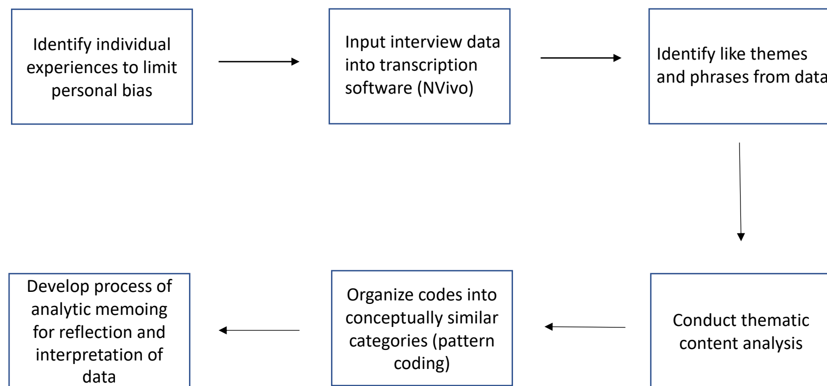

Figure 3: Colorafi and Evans (2016) qualitative data analysis plan.

Issues of Trustworthiness

The majority of qualitative descriptive studies rely heavily on establishing trustworthiness and authenticity through five standards, I used five main standards in this study (credibility, transferability, dependability, confirmability, and application). Colorafi & Evans (2016) explained that credibility in qualitative research studies promote a descriptive and evaluative understanding of the findings. As such, utilizing these five standards will ensure my research design and findings are sound and relevant to the field of student health research.

I ensured credibility through method triangulation, a form of triangulation that uses multiple methods of data collection such as observing during focus group interviews

and maintaining researcher field notes (Carter et al., 2014). The triangulation process of observing and keeping field notes during the focus group will make the data richer and allow me to describe tone and body language response. By observing responses to interview questions taking into account participant body language allows me to improve credibility and internal validity of the data. I also shared copies of the transcripts with all participants to ensure validity of responses. Colorafi & Evans (2016) explained that body language observation during data collection can be just as telling as the verbal responses given by participants.

Future research can be developed from this study by understanding the ideas and beliefs of this group of HBCU students. In order to support that this study is applicable to other AA populations outside of an HBCU, a method of thick description was implemented. This process of thick description will allow the reader to make associations of the elements in this study and apply them in their own experiences (Levitt et al., 2018; Sandelowski, 2010; Willis et al., 2016). Describing the student experience in sufficient detail is important in qualitative descriptive studies. Most importantly thick description adds relevance in being able to suggest ways the findings could be tested further by other researchers this is an important aspect of ensuring transferability (Creswell, 2013; Miles et al., 2014; Sandelowski, 2010; Yancu et al., 2011).

I ensured dependability in this study by fostering consistency in my procedures with all participants using similar methods from the literature, taking into account culturally specific recruitment strategies as defined by Yancu et al. (2011) and using relevant qualitative data collection strategies as outlined by Colorafi & Evans (2016). I

clearly described my role as the researcher with participants and examined my personal experiences for any potential bias, also I ensured my focus group questions and observations were based on similar studies that used the HBM (Das & Evans, 2014; Jones et al., 2014; McArthur et al., 2017).

I ensured confirmability through reflexivity, where I kept a personal reflection journal. Through reflective journal writing, I will be able to address two important aspects of confirmability (a) objectively relate the participant experiences back to the conceptual framework and (b) be able to document and be aware of my own personal assumptions and potential bias. Colorafi & Evans (2016) described confirmability as an objective view of the researcher to neural and reasonably free from researcher bias. As such, reflexivity is important in this study to ensure the true experiences of students are described and how their behaviors are impacted by campus health services are captured in detail.

Lastly, in order to address trustworthiness in this study I will demonstrate how the results benefit participants and the HBCU student health climate as a whole through application (Miles et al., 2014). In order to ensure application, I will provide all participants and site administrators a summary of the findings in a simplified summary report. I will also seek to publish results in peer reviewed journals and present my study at professional conferences.

Ethical Procedures

Ethical considerations are extremely important in all health service research, and most especially when underrepresented minority groups are the population being studied

(Boutin-Foster et al., 2013; Yancu, et al., 2011). I gained IRB approval from Walden University and the HBCU to conduct this study using actively enrolled adult college students. I obtained letters of support/cooperation from the HBCU Vice President of Student Affairs to post recruitment flyers on campus. The confidential nature of the study was explained to all participants that responded to the recruitment flyer via email and prior to beginning the focus group. I also collected a signed informed consent (Appendix A) written in clear and concise language, from all participants at the beginning of the focus group session. I explained to all participants that their involvement is completely voluntary and to ensure anonymity, I only used identifiers in place of student names when presenting results. I audio recorded all focus groups sessions and data is being saved on a password protected drive, only accessible by me. All hard copies of related documentation are locked and being kept in a secured location off campus, only accessible by me. Lastly, $5.00 gift cards to campus bookstore were issued at the conclusion of data collection and participants were contacted to receive incentive for their participation in this study.

Summary

The methodology for this qualitative descriptive study which examines the impact of campus health services on the attitudes, perceptions, beliefs, and behaviors of HBCU students was discussed in this chapter. This chapter outlined; the research design and rationale, the role of the researcher, methodology, and issues of trustworthiness. I explained how I will use culturally relevant methods of recruitment and how qualitative descriptive methods will be best implemented to answer my specific research questions.

This chapter also explained participant selection logic, procedures for participation and data collection, and outlined a data collection plan. In Chapter 4, I will present the results of the study including; setting, demographics, data collection, and data analysis.

Chapter 4: Results

Introduction

The purpose of this qualitative study was to understand the impact of campus health services on the attitudes, perceptions, beliefs and behaviors of HBCU students. A central focus was placed on diet and exercise habits, including the role socioeconomic factors play in shaping beliefs students arrive with on campus. In this chapter, I restate the research questions and discuss how they guided the study, explain the setting in which the research was conducted, describe participant demographics relevant to the study, describe my data collection and data analysis techniques, provide evidence of trustworthiness, and present results of the study. The research questions for this study were:

RQ1: What socioeconomic (community, familial and societal) life experiences have shaped HBCU student health beliefs about diet and exercise?

RQ2: How does the campus environment and campus health services specifically influence HBCU student dietary health and PA behaviors?

Setting

This qualitative descriptive focus group study was conducted on an HBCU campus in the state of Alabama and included currently enrolled students who met the inclusion criteria after two weeks of on-campus recruiting. I employed active and passive forms of recruitment in order to increase participation amongst students, and both focus groups were held in a private location after normal class hours during the week. I selected the central location in the Student Wellness Center in order to ensure ease of access for

students and availability after hours to conduct the group. The room was reserved with staff at the Student Wellness Center 1 week prior to holding focus groups. Focus groups were scheduled 6:00 PM–7:00 PM Tuesday and Thursday of the same week as this time did not interfere with normal class schedules. The first focus group had six participants and the second group had seven participants. The room was set up with desks facing each other in a circular shape, and I was seated in the center of the group. The audio recording device was located on my desk in the center of the room to ensure all conversation was adequately recorded. Students were permitted to read and sign the consent agreement, I left time to address any questions, collected signed copies, and provided each participant blank copies of the consent form per the methods approved by Walden University Institutional Review Board Office of Research Ethics and Compliance (approval #05-02-19-0351373).

Demographics

Data collection for this study included demographic information on participants. Prior to beginning the study, participants completed a demographic questionnaire (Appendix B) which captured gender, grade classification, enrollment and residential status, and current age. Each participant at the time of data collection was an actively enrolled student at the HBCU and was a voluntary participant who was identified through on-campus recruitment. Of the 13 total participants, 60% identified as female, while 40% identified as male. The majority of participants were freshmen (60%), with sophomores making up the second largest group (23%). Also, participants between the ages of 18-20 made up the most significant group (76%). Lastly, all of the participants self-identified as

Black/AA, with two self-identifying as mixed and more than two races. Table 1 lists the demographics of the participants for this study.

Table 1

Demographics of Participants

ID	Gender	Classification	Current enrollment status	Identify as Black/AA	Current age	Last time you visited SHC	Live on campus
BW1	Female	Senior	Full-time	Yes	>24	Past week	No
BM1	Male	Freshman	Full-time	Yes	18-20	Current semester	Yes
BW2	Female	Freshman	Full-time	Yes	18-20	Current semester	Yes
BW3	Female	Freshman	Full-time	Yes	18-20	Past month	Yes
BM2	Male	Sophomore	Full-time	Yes	18-20	Current semester	Yes
BW4	Female	Freshman	Full-time	Yes	18-20	Past week	Yes
BW5	Female	Freshman	Full-time	Yes (mixed)	18-20	Past month	Yes
BM3	Male	Freshman	Full-time	Yes	18-20	Never	Yes
BW6	Female	Freshman	Full-time	Yes	21-23	Never	Yes
BW7	Female	Freshman	Full-time	Yes	18-20	Past month	Yes
BM4	Male	Junior	Full-time	Yes	21-23	Past week	No
BM5	Male	Sophomore	Full-time	Yes	18-20	Past month	Yes
BW8	Female	Sophomore	No response	Yes (>2 races)	18-20	Current semester	Yes

Data Collection

I followed data collection procedures that were outlined in Chapter 3. I used an interview guide that was adapted using the HBM developed by Rosenstock (1974) with probe/ice breaker questions and a set of discussion questions that were grounded in the HBM constructs (Das & Evans, 2014, James et al., 2012, McArthur et al., 2017). I

collected data during two separate focus groups with six participants in the first group and seven in the second group. Each group started with a welcome where I delivered an overview of study, discussed consent for participation, and allowed participants time to ask questions and sign the consent agreement. Lastly, participants were given the opportunity to introduce themselves and share information about their hometown. Once participants finished introducing themselves, I started the audio recorder and began following the script using the interview guide (Appendix C).

Data collection lasted approximately 70 minutes in the first group and 85 minutes in the second group. The extra time was a result of having an additional participant in the second group. Participants were able to access the location, and everyone arrived on time with each group beginning at 6:00 PM. I recorded data using an audio recording app placed on the center desk in order to capture participant responses clearly. I also kept notes as the focus group progressed. This was done to address any follow-up questions and to assist with data analysis including identification of personal biases. Data collection went as planned according to what was presented in Chapter 3 with no variations. In order to assess for personal bias, prior to beginning the focus group, I acknowledged my position as director and explain how my role was related to the study and ensured students everything discussed would be confidential and not impact their matriculation on campus. Acknowledging my relationship with the student health center was important to building rapport with participants. This approach demonstrated transparency in establishing a trustworthy setting for participants to feel comfortable discussing health related topics. The only unusual circumstance was having to address the use of cell

phones by participants after the focus group begun, I did not take this factor into account when discussing expectations of the group. As a result, I had to ask a few participants to limit cellphone use to emergency calls during both group sessions.

Participants represented all grade classifications, with the majority being first year freshman. Only one participant was a senior and had plans to graduate that academic year; this participant was also a nutrition major. One participant identified as a first-generation college student and was from a small town in Alabama in which most people lived under the poverty line. The sample included several participants who were originally from Midwestern states (Illinois, Michigan, Kentucky) and had decided to attend an HBCU for the opportunity to "experience black culture every day." Several participants had immediate family members who attended an HBCU, which they all agreed influenced their decision to attend. This sample also included student athletes, one who was currently training for a competition during the time of data collection, and another who was recovering from injury during the time of data collection. Lastly, this sample had participants who worked as a personal trainer and an individual who had weight related health issues in the past but had lost weight since being in college and felt healthier now.

Data Analysis

I began data analysis following a method developed by Colorafi & Evans (2016). This process involved me first transcribing the audio recordings using a paid online service. Next transcripts were uploaded to NVivo 12 to organize and identify like themes and phrases. Following this, I conducted content analysis by grouping quotes into

predetermined categories based on HBM constructs (Table 2). Lastly, I used a journal to reflect and further expand on any themes or ideas that emerged during data collection that needed deeper interpretation. After the audio recordings were transcribed and uploaded into NVivo, I identified codes were identified from the analysis and grouped into predetermined codes using like phrases and themes that best aligned with HBM constructs (Table 2). While interpreting the transcripts, emergent codes were grouped into categories and finally reduced into themes (Table 3) this form of grouping was not sequential with the thematic analysis of HBM coding and would often overlap as analysis progressed. During data analysis, 11 codes emerged that were further reduced into six themes, which captured thoughts and perceptions of participants. Table 3 shows the emergent codes reduced into categories and then themes. All questions from the interview guide were asked (Appendix C), and I only had to use probe questions during the second group because a few participants gave minimal responses, and I felt the use of probing questions would yield a richer discussion.

Table 2

Predetermined Codes From HBM Constructs

HBM construct	References
Perceived susceptibility	13
Perceived seriousness	7
Perceived benefits	17
Perceived barriers	19
Cues to action	22
Self-efficacy	14

Table 3

Emergent Codes Reduced Into Categories Then Themes

Emergent code	Category	Theme	Applicable research question
Concerned about body image and how others will judge them	Importance of body image	Internal motivation for action	RQ1
Barriers to physical activity on campus	Influence of campus resources	Campus environment impact	RQ2
Positive information and resources on campus related to physical activity	Influence of campus resources	Campus environment impact	RQ2
Access to healthy food choices on campus	Influence of campus resources	Campus environment impact	RQ2
Fear of developing chronic disease later in life	Disease prevention	Internal motivation for action	RQ1
Resources gained visiting the Student Health Center	Influence of campus resources	Health center involvement	RQ2
Negative habits and beliefs learned from family	Familial influence	Family and friends' words matter	RQ1
Positive habits learned/seen from family	Familial influence	Family and friends' words matter	RQ1
Negative influences from friends	Role of social networks	Family and friends' words matter	RQ1
Support from friends and social networks	Role of social networks	Family and friends' words matter	RQ1

Evidence of Trustworthiness

As discussed in Chapter 3, I developed this study to ensure trustworthiness in all aspects of recruitment, data collection, and data analysis. I ensured this study had credibility, transferability, dependability, and confirmability throughout the entire process. This section will discuss each aspect of trustworthiness and methods used to ensure they were present in this study.

Credibility

Credibility in this study was ensured through field notes in which I recorded non-verbal cues of participants to better reflect and capture the responses of participants in a focus group setting. I also recorded my perspectives in a reflection journal prior to holding focus groups and following the conclusion of each group, this was done to help recognize and identify any personal biases and to gain a deeper understanding into participant feedback. Carter et al. (2014) explained that method triangulation can ensure credibility by incorporating multiple methods of data collection aside from just audio recording. As a result, I kept a reflection journal and recorded observations during both focus groups. I observed and made note of body language, tone, and reactions of participants as they discussed shared experiences. This was especially important when participants disagreed, or shared experiences related to their familial and community influences. Finally, to ensure validity of responses and further strengthen credibility of this study, I shared copies of transcripts with each participant via email and allotted time for review and feedback.

Transferability

Through thick description the reader can make inferences about similar young adult populations based on the study design using a sample of AA HBCU students. Participants were recruited using both active and passive forms of recruitment, and two separate focus groups were scheduled with participants being randomly assigned to further support the methods being transferable. The results of this study provide individual responses and explains in detail the recruitment procedures to support duplication of this study among participants with different demographic characteristics.

Dependability

In order to ensure dependability, I employed culturally relevant recruitment strategies for HBCU students as outlined by Yancu et al. (2011), in which active and passive forms of recruitment were used to ensure the highest yield of response. As a result, I was able to recruit an acceptable number of participants (n=13) who met the criteria in a one-week time period. Secondly, I discussed my role on the consent form and prior to beginning each focus group to limit any perceived personal bias. Lastly, focus group questions were based on similar studies that incorporated the HBM in research design using a similar population, this allowed me to ensure dependability and research approach was aligned with relevant research.

Confirmability

I achieved confirmability in this study by keeping a reflection journal. This reflection journal was beneficial in that it allowed me to relate individual participant experiences back to my original framework and as themes emerged, I was able to

compare to predetermined codes I established prior to data collection. This method of reflexivity also allowed me to recognize and account for personal bias as the focus groups progressed and during data analysis. Finally, I provided participants copies of the focus groups transcripts to review and provide feedback to ensure no discrepancies existed from audio recording to transcription.

Results

I have organized this section to correspond with the research questions for this study and include the themes that emerged during data analysis. Under each research question are the codes that emerged from data analysis which includes categories and themes, and I have provided direct quotations of the participants that aided in the development of these categories. The research questions centered around (a) the socioeconomic (community, family, societal) influences that have shaped HBCU student health beliefs about diet and exercise, and (b) the role of the campus environment and campus health services on HBCU student dietary health and PA behaviors.

Interpretation of the data revealed a relationship between student health beliefs and the role campus health services have in shaping. For example, students acknowledged that when they discuss chronic disease risk factors with physicians in the health center, they often times receive valuable information that can be applied to improve health behaviors. Students also expressed that campus health outreach events offered engaging programs on topics related to healthy eating, diabetes prevention, and PA. As themes emerged, distinct relationships emerged from the data and helped to develop an understanding of how certain attitudes and beliefs were related. Knowledge of

health services and resources on campus had the most significant impact on students, as this was shown to influence visiting the health center and improving access to healthy foods on campus. As a result, this code reflected choice around visiting the student health center which increased student knowledge on accessing healthy foods options on campus. The following relationship map illustrates emergent codes with arrows representing how one code influences the other (Figure 4).

Distinct relationships emerged between themes and the relationship map represents that *knowledge of health services and resources on campus* had the most influence on the other themes. Knowledge of campus resources impacted the perception students had on *accessing healthy food on campus* and increased the likelihood of *visiting the student health center.* More importantly, there was a contrast between healthy foods being available on campus and students actually being knowledgeable of how to access these options. *Body Image* was largely impacted by *influence of family* and the *type of social support and peer pressure from friends*. *Body Image* was also impacted by *access to healthy foods on campus* mostly due to students believing they felt more self-conscious about weight gain when they ate unhealthy foods or couldn't prepare healthy options in their rooms. *Fear of chronic disease later in life was decreased in students who visited the health center regularly, also students who ate healthy foods more often believed they would be less likely to develop a chronic disease. Lastly, students who reported engaging in physical activity on campus more frequently were well informed of available campus resources. In contrast, students who were not fully aware of campus health resources tended to encounter more barriers to engaging in physical activity.*

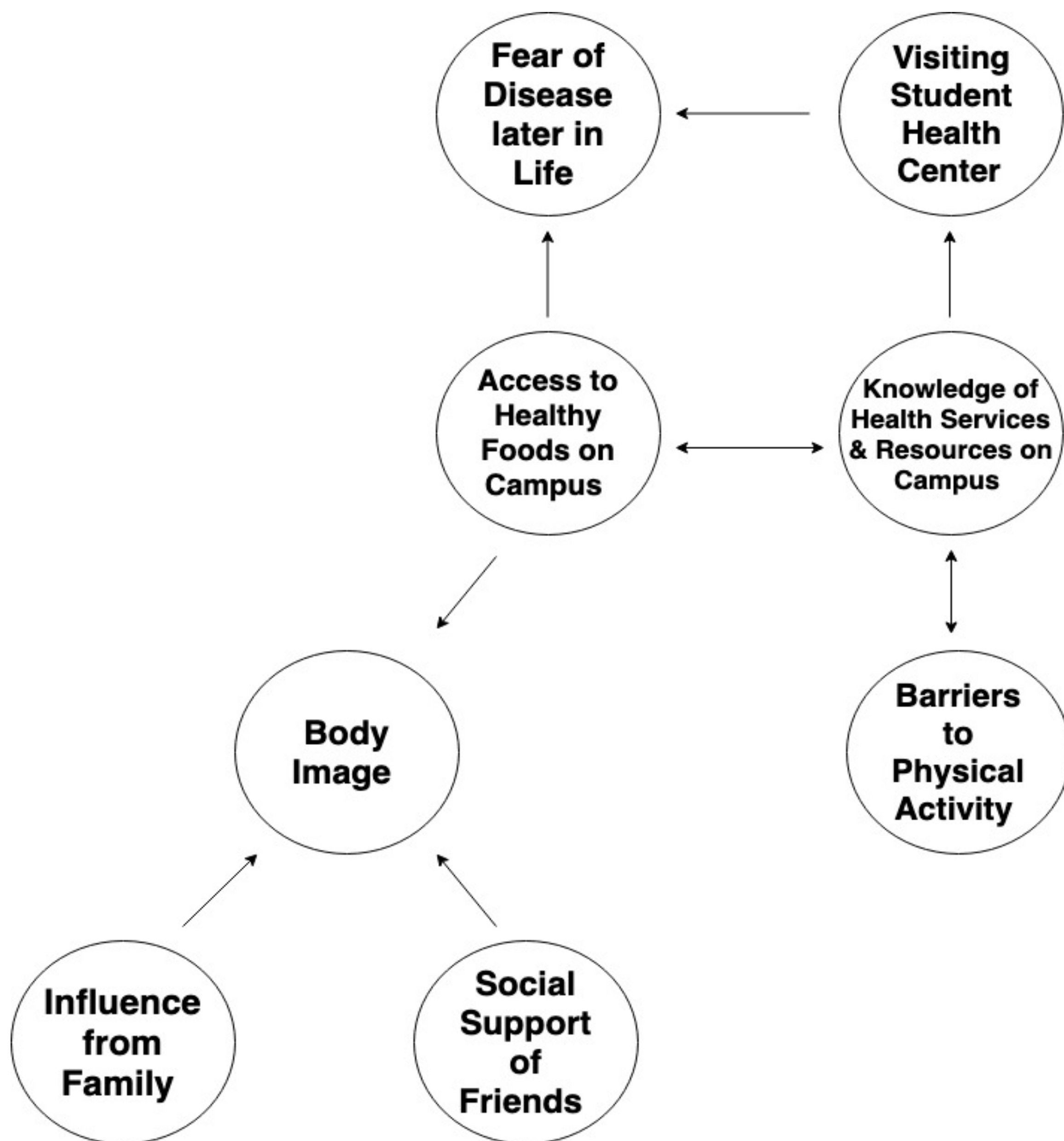

Figure 4. Relationship map.

Research Question 1: Community, Familial and Societal Life Experiences

This section will provide participant responses and address the research question: What socioeconomic factors (community, familial, societal) life experiences have shaped

HBCU student health beliefs about diet and exercise? The themes that emerged from this research question revealed that words and traditions of family members influenced health beliefs, social media can negatively impact participant body image, and there were perceived barriers on campus that prevented students from accessing healthy foods. All 13 participants agreed that their parents' words and beliefs still have some influence over their actions, and half of participants stated negative words had a more significant impact over body image. All the female participants (n = 8) agreed that seeing "fit" females on social media made them feel self-conscious about their own body image. Only one male participant said seeing social media images of "fit" men had an influence over deciding to exercise and eat a healthy diet. The other male participants (n = 4) agreed that social media images of "fit" men did not impact their perception of body image of determining their diet and exercise beliefs.

Concerns about body image and how others will judge them. Participants had varied responses about the impact of being judged on body image. More female participants than male participants were concerned about being judged on their body image. Also, several female participants (*n* = 5) admitted that getting likes on their social media images had a positive influence on how they felt about self-body image.

> BW1: Society definitely has its stigmas on how your body should look. Right now, the thing is being thick with a small waist and having big breasts and being pretty in the face. That's what society wants right now. Ten years ago, it was being skinny enough to work in a Victoria's Secret fashion show. It changes all the time; it just changes constantly.

BW3: It's so many of my aunties, my aunt's friends, that got liposuction and all this, just for likes on social media. It don't make sense. It's sad but it makes me think am I going to do this when I get older.

BM4: My motivating factor is to maintain a certain body image. That's what encourages me to work out, and exercise. I want to take my shirt off when I play basketball and not have a big ol' gut, especially not as a young dude.

BW5: Based on how my mom raised us, she had always been self-conscious about her body, before she was disowned, she had always stuck out as like the overweight person. Everyone else was blond and thin. She was the redheaded, fat stepchild. So, she would always tell us growing up, and even now that we have to eat this to stay small; or eat that so we won't get fat.

Fear of developing chronic disease later in life. Perceived susceptibility and seriousness of developing a chronic disease later in life are key constructs of the HBM and shaped two discussion questions. Although the literature has shown the direct correlation of inactivity and poor diet to developing chronic disease (Harmon et al., 2016, James et al., 2012, & Marquet et al., 2018), the majority of participants did not see these perceptions as motivating enough to impact their attitudes or behaviors. Participants (n= 8) did correlate chronic diseases members in their family are living with as a predictor of what could potentially happen in their lives as a result of poor eating habits and limited PA.

BW2: I have a long string of heart problems and diabetes in my family. So, I already believe that I'm genetically prone to get it. So, it kind of scares me.

BM5: There are a lot of people in my family that have chronic diseases, and I've never really known them to exercise or eat healthy. Just seeing them, I don't want to go through that.

BM3: Diabetes, high blood pressure, cancer are all real diseases that you see black people dying from, but you feel invisible like it won't happen to me or if it does it will be later in life, so who cares right now.

BW7: Cause we're young and it hasn't set in yet. You're not seeing any signs of any chronic diseases yet, so you just kind of sweep it under the rug. You're like, oh that ain't happen to me yet so this cheeseburger and fries won't hurt anything.

BM2: It's about prolonging your life. Like seeing if, when I eat this stuff now, is it going to affect me later on should I really care because we all are going to die from something.

BW4: I actually gained the freshman 15, like I actually gained? all this weight my first year so I know that if I keep eating like this, I could probably keep getting bigger and get high blood pressure or something before I even graduate. I know it will be harder to eat right and stay in shape when I get older, but I just keep eating bad.

Negative habits and beliefs learned from family. Family influence had significant impact on participants, a majority of participants (n=11) agreed they still believed and practiced many negative habits learned from their family. During both focus groups we discussed how food choices were determined in their households, current health status of family members, and how exercise was viewed growing up. During data

analysis, I was able to discern the following words to help me conclude negative habits learned from family; *pressure, validation, judgmental.*

Participants in both groups discussed the fact of not having access to areas for PA and as a result, their family did not see engaging in PA as a priority. The male participants (*n* = 5) overwhelming agreed that PA was encouraged through school sports (basketball, football, track) while only two female participants agreed participation in sports was encouraged and supported in their household growing up.

> BW2: Growing up in my family, and stuff, diet wasn't really necessarily discussed in a way of eating healthy, per se. I come from a family, not all, but majority of them have high blood pressure. So, we talked about it, but really in a joking way only to make fun if someone didn't eat all their food or during big family holidays.
>
> BW3: We walked and stuff, but my family wasn't really high on diets and stuff, especially not regular exercise. It wasn't the norm, and we just eat and eat and eat. All the time. Me and my grandmamma. Before I came to school, me and my grandmamma would go to buffets every weekend and just eat. It was like eat as much as you could.
>
> BW4: You couldn't throw away no food, it was no throwing away of food. We used to get a whooping. I remember the first whooping she [my grandma] ever gave my auntie, which is her only daughter, it was because she didn't finish her peanut butter jelly sandwich, and she got a whooping. You eat your food. I don't have a choice.

BM2: You were just taught to eat all of your food off the plate. That was our rule, you would get looked at funny or you got in trouble if you tried to throw something away.

BM3: My family's really hypocritical. No one is skinny, per se. Genetically, we are big. But even though they won't really take care of themselves, they'll eat what they want to eat, but then they'll look at me and be, like, "Oh, you're getting too big. Okay, you're too big. Okay, now you're too skinny." It's confusing, wondering what they'll say about me when I come home for breaks. Sometimes I wouldn't even tell them I was coming home so I wouldn't be judged or made fun of for being too skinny or when I gain a little weight.

BW6: When I tell you my family psychologically gets to me, they psychologically ... I won't eat for days. Don't nobody know that about me except for a few people, but they really are judgmental and even now, I'll be in the café and just hear my mom voice, like "are you just gonna eat all that fried chicken" and it will literally make me feel kind of depressed, but I'll eat it anyway.

BM5: He still tells us this [my dad]. I don't go to his house anymore for the breaks, but my brothers and my sister . . . he's so adamant in us not being overweight, but it's happening anyways, and he doesn't like it. So, it's like one side of the family is really wanting to be healthy, don't be fat. And the other side is like nobody will like you if you're fat. So, it's like they both encourage us to be healthy, but one side is really sort of mean about it, while the other side is kind of encouraging.

Positive habits learned and seen from family. The overall positive influence from immediate family (parents, siblings, grandparents) was limited, as many participants acknowledged their family often times encouraged negative habits and beliefs growing up. Participants stated that many of the positive habits they practiced currently were learned mostly from family members (Cousin, Aunt, and Godparent) that weren't immediate and with whom they didn't spend a lot of time with. As a result, participants acknowledged that many of the positive health beliefs were seen when they visited distant family and would usually be contradicted when they returned home. The quotes in this section represent beliefs and experiences from distant family members.

> BM2: My uncle, he played sports in high school, he played college basketball, he did all that. He's a pretty healthy dude. He still plays with his college friends, actually every week, and he always stayed active when we were younger, and we would spend weekends over his house. I remember his kids [my cousins] being really active. He actually sends me workout plans still.
>
> BW3: I remember my Auntie on my mom's side would cook these big meals every weekend, and everybody would come over to eat. She really replaced my grandma after she died, and the food was actually better…like healthier. She would bake chicken, have a lot of healthy type vegetables and the tea would always be unsweet and we would have to add our own sugar.
>
> BW7: My cousins were really healthy and active, one of them was an all-state volleyball player. That's actually what got me playing volleyball. I started playing

in middle school on the YMCA team and lost a lot of weight. I was like "oh I'm getting fine, I'm going to stick with this" and It actually stuck, I still play today.

Interactions with immediate family members often times conflicted with the types of experiences participants had with distant family members. Participants discussed how their immediate family members had both positive and negative beliefs about body image, PA and diet. The majority of participants believed their immediate family had more of a negative influence with influencing bad habits as normal behavior. The quotes in this section represent attitudes and beliefs from immediate family members.

BW1: We never ate healthy, matter of fact my mom got diabetes when I was in high school and she still eat bad. Seeing that influenced me to want to eat better.

BW4: My mom always says; "Oh, I see your freshman 15 coming." "Oh, you need to get in the gym." "Oh, you need to exercise" and even though it kind of upsets me and she's annoying, I actually feel like that motivates me to stay kind of active in college.

BM4: But we are an athletic family, so my brother and my sister, they play basketball, and I dance, so we always be doing stuff, you know, fun stuff besides eating bad, you know, it keeps us active I guess; and now that I'm at school I still dance with the team here.

BM5: Well I feel like it's kind of like a conscious thing cause it's . . . you know how you're younger you start to see things and remember things, and you start doing things that your parents keep telling you to do, like oh they're overdoing. It becomes a subconscious thing actually. I feel like that kind of correlates with how

> you eat. Depending on your background, and how you were at home. If people are on you, you don't . . . self-discipline yourself to be on a certain diet, or certain way you eat is not gonna be a conscious thing.
>
> BW7: We would eat healthy and play outside whenever we stayed with my cousins, but soon as we got back home from the weekend; we were back to eating fast-food and nobody made us play outside or doing anything physical. It was like my parents were too busy working to really focus on what we ate.

Negative influences from friends. Participants provided several responses when discussing barriers, self-efficacy, and cues to action. The focus group questions centered around the role social circles; in particular the role friends play in health belief and behaviors. The theme *family and friends' words matter* were highlighted during this discussion, as many of the participants repeated the following words: *self-conscious, social media validation, Instagram likes, trending, popping.* Participants explained that although the response and words of their friends can appear negative, this actually motivates them to stay fit and keep their bodies in shape. Consequently, the participants agreed that when they are pressured by their friends' not to exercise it really impacts them and they will go weeks without working out. The main types of pressure experienced by participants were; negative social media comments, negative body image gossip, and peer pressure to prioritize academics over health. The quotes in this section represent negative influences from friends and how this perception of lacking motivation supports negative behaviors.

BW2: We're [roommates] are all eating the same thing, so we're all eating bad it's like who can say anything about eating healthy.

BW3: People gonna do what they want to do, so if I don't care that I'm gaining weight, if I don't care about eating right, I'm not gonna do it. I mean, these are college kids, so I don't really try and judge people.

BM2: I think what would motivate me is, seeing how many likes I get on my Instagram cause I done got big and when I look at my old posts when I was smaller, I was getting 100+ likes, now my posts be getting like 50. It makes me wonder if people think I'm too big, so yeah, I get a little self-conscious.

BW4: If you are popping on social media, you're probably not popping in real life. All this photo shop and filters people put on their photos it's so misleading, but it will have you judging yourself.

Participants discussed social peer pressure both verbally and inferred from friends and social media. This peer pressure to engage in unhealthy activity had significant influence over their beliefs and behaviors on campus. However, many participants acknowledged they were usually aware of how this peer pressure was negatively influencing their behaviors.

BW5: I think society always tells us; oh you need to be thick. You feel like people are trying to not eat right or gain weight to be thick. To be perceived as that or they eating to be thick cause you know they say collard greens and cornbread will make you gain weight in your chest and butt. So now most of my friends won't even worry about eating healthy.

BW6: My friends definitely have their stigmas on how your body should look. Right now, the thing is being thick with a small waist and having big breasts and being pretty in the face. That's what most girls want right now. Ten years ago, it was being skinny enough to work in a Victoria's Secret fashion show. It changes all the time, it's so much pressure to look a certain way, it messes with your head makes you wonder what's really popping.

BM5: I actually gained the freshman 15, me and my roommate both. We gained a lot of weight our freshman year and it really got her down where she was depressed. I remember when somebody posted a throwback picture of her on social media and it was when she was smaller. People were commenting and it was like they were talking about how she don't look the same.

BW7: All of my roommates are in honors classes, so we are usually studying all the time or attending meetings, or programs or something that basically leaves us no time to exercise. I've even noticed when I suggest going to the gym or going for a walk, they'll be like "who got time for that" or "you can go, but I got this work or this paper" and I don't wanna go by myself.

Support from friends and social networks. Many of the participants agreed that they received some type of support from friends and within their social networks regarding proper diet and exercise. Although, it was mentioned on several occasions that the support did not always appear genuine and would usually be followed up with something perceived as negative. Key themes that emerged during this discussion were; *positive examples, model behavior, workout partner, social media influence.* It is

important to note that most participants got information and motivation from the internet and social media about exercise plans, and to seek motivation when comparing body image. This discussion on social support displayed a high level of synergy amongst both focus groups and at times did not require any input from me as the moderator.

> BM1: My community was very healthy. There were cheerleaders, soccer players, football players, everyone was always doing things to stay fit, so I naturally picked up those habits and try to stay fit while I'm here on campus, it's seeing those positive examples. It's almost like a competition with us, we'll try and see who can win the most athletic awards.
>
> BW3: It wasn't until maybe junior and senior year [high school] when I really started realizing, okay, what I'm eating is not good for me, plus seeing all these fine models on social media, I was like "girl you need to do better". I actually became a vegetarian that summer and got my sister to be my workout partner. I think working out with her really held me accountable.
>
> BM2: I have motivation because of that psychological thing in my head, and then I'll work out because I like to look good. Being someone in the limelight, on the basketball team and I lettered in track, so I was like the model of being fit in high school. I got to college and got an injury and it was hard to stay motivated to workout, I gained some weight after my freshman year. My teammates really held me accountable and plus my scholarship was really based on me staying in school. So I guess you could say I needed to stay in shape to stay in school.

BM3: You would think I could deprogram it now because, like I said, nobody in my family is skinny. I'm probably the healthiest ... me and my cousin probably the healthiest so we're each other's partners with working out.

Research Question 2: Role of Campus Environment and Campus Health Services

This section will provide evidence and support to answer the second research question for this study: How does the campus environment and campus health services specifically influence HBCU student dietary health and PA behaviors? Responses revealed that the campus environment had a significant influence over students' ability to access healthy foods on campus and certain perceived barriers impacted their ability to obtain health information related to healthy living and PA promotion. Campus health services was revealed to be a positive factor in providing medical care and health information for improving health behaviors. Students who visited the student health center reported their experience being mostly positive and helpful with making more informed decisions around dietary health and exercise. Residence halls on campus were also seen as an impendent to PA due to the far proximity from health and wellness facilities, and many students reported that lack of resources (refrigerator, microwave, oven/stove) in residence halls made it difficult for students to eat healthy on a consistent basis.

The themes that emerged from this research question were *campus barriers, health center involvement, campus support services, and positive campus engagement.* Participants had varied responses to the role being on campus had on their health beliefs and behaviors about food choice and decisions to engage in PA. Male participants

acknowledged to using the campus fitness center more regularly when compared to female participants. Participants in both groups overwhelmingly agreed the campus environment is not supportive when encouraging PA and healthy eating. It was noted that many residence halls are far from health and wellness resources, school sponsored events usually have unhealthy food options, much of the exercise equipment in the fitness center is out of service, and the number of bus stops on campus discourage walking. There were 38 references to inconvenient hours in the health center and fitness center, 29 references to unhealthy food options in the cafeteria, and 14 references to there being limited student activities that support and encourage PA. Participants noted that providers in the health center did a good job of discussing benefits of exercise and proper diet during a visit when a student was being seen for a specific issue related to weight management or chronic disease, several students remembered seeing and/or receiving literature on healthy eating when visiting the health center.

Campus barriers. Barriers that exist on campus which have a negative influence on student's health perceptions and behaviors were referenced thirty-nine times during the first group and forty-six times during the second group. Key words that emerged during the discussion on perceived barriers and cues to action were; *limited events, appointment availability, resources on campus, no money, cafeteria options.* The most common reason given for participants not engaging in physical on campus was the location of resident halls in proximity to the health and wellness center. Participants also stated that physicians in the student health center rarely discussed options or

recommendations for PA and diet unless the student directly inquired or was being seen for an issue related to diet and/or exercise.

> BM1: I feel like being up here on campus, you only have certain food choices, and they usually are bad or just nasty.
>
> BW3: So not everyone has access to go to a grocery store and things for that nature. That's, like, four miles out. It may seem like a little bit, four miles. But really four miles is a very long time to walk, especially if you're carrying groceries. When the café close, you basically on your own.
>
> BW4: Not even then because even our residential halls have some rules. We can't even have refrigerators in our room that minimizes everything. You can't eat nothing really, nothing without a fridge. Anything besides ramen noodles, packaged foods, canned foods.
>
> BW6: Processed food, you can't really eat none of that, and we only have two microwaves really one microwave in the whole residential hall, and there's almost 200 girls living in there, so basically, it's either you have to eat in the cafe or eat some snacks.
>
> BM4: You have to ask the bus driver to take you to wellness center, we have stops all over campus, but the health and wellness center doesn't have stops, so you'll end up having to walk all the way over.
>
> BM5: The healthy food don't look as good as the unhealthy food in the cafe, cause I love eating vegetables and stuff, but the cafe just look unappetizing to me so I end up just getting French fries and go back to my room.

Health center involvement. Participants stated they engaged the student health center for various reasons, the most commonly referenced reasons were; *prediabetes management, meal planning, health coaching, and seeking medical referrals.* Information was shared verbally on the types of services offered by the health center because many participants (n=6) admitted they weren't fully aware of the services currently offered by the student health center. Regarding perceived benefit, it was mentioned by several participants that they had received useful information on diet and healthy eating from events sponsored by the student health center. Social media postings from the student health center account was identified as having the greatest impact on individual beliefs, with a majority of participants stating they've seen beneficial information shared from the account. Participants who acknowledged having minimal experience or knowledge with student health services were given the opportunity to ask further questions about student health services and I also gave a brief overview of the student health center.

> BM1: I feel like the health center should be seen more on campus, I know me personally, I only come here when I'm not feeling good. I've never gone to the health center or reached out to them about eating better.
>
> BW3: The health center should show the nitty gritty of it, of eating bad and not taking care of yourself. This could really help because one of freshmen just died, she had a heart attack and she's 18.
>
> BW4: No, but it's just, something not right. People just don't have heart attacks. It's just about taking care of your body and making sure those things are known, put out there. Not a lot of people knew that she had a heart attack. This could

happen to you, I know after I heard about it, I came and talked with the doctor here and was getting my blood pressure checked.

BM3: I follow y'all (student health center) on Instagram and I always learn something new when the post be about food and I remember seeing one that had shown what a portion should look like compared to what we really eat, that made me think, I even shared it on my "IG" Instagram page.

BW7: I had a good experience when I talked with one of the doctors here, she was a little aggressive, but she was speaking the truth about my weight and it made me eat better for a few weeks, but I still went back to eating bad.

BM4: These people right here? [participant pointed in direction of student health center] Umm. No. I wouldn't go to them to ask them (student health center) about stuff. I'll just stick to searching online for exercise tips.

BM5: I personally haven't been to the student health center since I've been on campus, but my roommate said he got help dealing with his prediabetes and I can tell he's lost some weight since last semester.

BW8: My doctor in the health center actually referred me to get more exercise, or not referred but recommended I guess, he gave me this app that shows you different workouts. I thought that was cool instead of trying to just put me on medication.

Access to healthy food on campus. The desire to eat better was shared by the majority of participants, however everyone agreed that accessing healthy options was very limited on campus. Themes that arose during this discussion was; *poor options in*

cafeteria, salad bar in cafeteria, junk food, can't cook in dorm room, limited café hours, campus in food desert. Data analysis revealed that campus layout can also impact access because many residence halls are far from the café unless you live in certain halls. Participants discussed a desire for vegetarian and vegan options in the cafeteria and asserted they had made these requests but had not received any feedback from administrators. As a result, many of the responses categorized as limited access were also similar to barriers on campus.

> BW1: When I hear diet, I think temporary. So, lifestyle is more long term to me, and I don't think I even know how to change my diet for the better to really change my lifestyle, especially with the poor options in the cafeteria.
>
> BW2: I usually just get stuff from the salad bar, but even that is always gone quick or the lettuce look all old and brown.
>
> BM2: We can't even have a microwave in the dorm I stay in, so it's either make it to the café before they close or eat some noodles. I probably eat noodles like three times a week.
>
> BW5: We have a microwave but they all the way in the basement, so like who wants to go down like four flights of stairs to heat up some food, by the time you back in your room; it's cold.
>
> BM3: I honestly eat junk food every day, so I won't have to eat the bad café food, and they got weird hours, it's like who eats dinner that early [6:30pm], by the time most people finish late classes they [café] is close.

BW7: I think I'm way unhealthier now because I was eating bad then, but now, I eat ... I can go days with just eating a pop tart or animal crackers or a lunchable and just be done for that day.

BM4: Now keep in mind, we had the traditional fish on Fridays, Fried Chicken Thursdays, and stuff. So I'll eat in the café but that stuff not healthy, they really think that's all people want to eat.

BW8: I don't even go in the cafe unless it's for breakfast.

Positive information and resources on campus related to physical activity. Although there were many stated barriers on campus that prevented PA, participants did acknowledge some unique information and resources that supported exercise. The most commonly referenced resource was health promotion activities/events hosted by the student health center and the wellness center. Participants said they received the most information and motivation after attending health events on campus. Exercise challenges, yoga, and weekly wellness news was referenced as outreach activities having the greatest impact. Participants stated that the campus could do a better job of reaching more students by coming to residence halls, handing out flyers, and using classroom time to announce events.

BW2: "Oh, I see your freshman 15 coming." "Oh, you need to get in the gym." "Oh, you need to exercise" That be the stuff I hear and see from flyers to social media stuff about exercise.

BM2: I think I could at least exercise. I have time, so I could put up at least an hour to exercise and my last class is in the wellness center, so I sometimes workout afterwards. It's a convenient location.

BW4: They used to have yoga on The Quad, in the middle of campus. It was usually in the middle of the day and they played some good hip-hop music. I know a lot of people liked that.

BM3: Especially when it gets warm, they have outdoor events every Wednesday. They have like exercise and aerobics and most times they'll have food out there too.

BW6: I don't really see that many things around campus, but I do hear about workout classes and events from my friends, they send these health newsletters out to our email, but people don't really read them like that.

BW8: The intermural program is really fun, I played on the basketball team and I was able to get three of my friends playing too. That's probably the only reason I'm fit and not obese now.

Summary

In this chapter I provided results from participants feedback transcribed from two focus groups. The results answered research questions outlined earlier in this study that focused on socioeconomic and socioecological factors that influenced health beliefs and the role of campus health services on diet and exercise behaviors. This chapter described the setting, participant demographics, data collection procedures and how the data was

analyzed. This chapter also discussed how I was able to ensure trustworthiness; this was achieved through creditability, transferability, dependability, and confirmability.

Relating to the role socioeconomic life experiences have on shaping HBCU student health beliefs, it was determined that all of these factors had an influence on dietary beliefs and desire to exercise however, based on the focus group responses participant feedback showed behaviors were also influenced by socioecological factors. Students reported they relied heavily on beliefs learned and lived experiences from their home communities. Although many students agreed many of their learned behaviors were unhealthy, they still had difficulty translating positive beliefs into cues to action. Results also revealed that peer influence both in person and social media had a significant influence on both benefits and barriers to exercising regularly and having a healthy diet. Students noted that visual images on social media had both positive and negative influences of self-body image. The campus environment presented more barriers than benefit, many of the barriers explained were limited events that supported healthy eating, the cafeteria having unhealthy options and the school bus system having multiple stops and not influencing walking. Students has positive interactions with the student health center, and this was seen as a positive influence in addressing conditions related to diet and exercise.

Findings from this chapter support the literature from Chapter 2 and supported my conceptual framework with incorporating the HBM in identifying motivating factors for behavioral change. The inclusion of the HBM in developing focus group questions also aided in establishing predetermined codes that emerged throughout the study. Finally,

chapter 5 will provide an interpretation of the findings, limitations of the study, recommendations for future research, and implications for social change.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The nature of this qualitative descriptive study was to determine the impact of campus health services on the attitudes, perceptions, beliefs, and behaviors of HBCU students related to diet and exercise. This study determined the role campus and familial factors played in helping to shape these beliefs. AAs develop chronic diseases at a higher rate than any other racial or ethnic group in the United States (Braden et al., 2015; Chen et al., 2017; Harrington & Ickes, 2016). More specifically, AA college students are exercising significantly less and reporting more instances of negative health behaviors (ACHA, 2017; Brown et al., 2014). It is important for student health centers to understand how student health beliefs and attitudes are influenced and what these centers can do to address negative behaviors. Previous studies have examined individual health beliefs, college health interventions, and social determinates of health but never in relation to campus health service delivery. College health research has found that students are engaging in risky behaviors and have identified barriers exist on campus that create challenges to staying healthy (Das & Evans, 2014; Egli et al., 2011; Harmon et al., 2016). Research has shown early interventions focused on health behaviors have a lasting impact on health outcomes, especially when delivered on a college campus (Brooks, 2015; Cowie & Hamilton, 2014; Das & Evans, 2014; Fennell & Escue, 2013).

This study was conducted at an HBCU in the state of Alabama and included currently enrolled AA students. The focus groups were held after normal class hours and involved a qualitative descriptive approach with 13 student participants. The focus group

questions were 20 open-ended questions that focused on (a) what socioeconomic factors have shaped student health beliefs, and (b) what role does the campus environment and campus health services have on diet and PA beliefs and behaviors. Each focus group lasted between 70 minutes and 85 minutes and participant responses were audio recorded and later transcribed for data analysis. I also kept field notes to record any nonverbal cues that occurred during the discussion. All notes and transcribed data were secured in password protected file folders and in a locked file drawer off site from where the focus groups were conducted. The research questions discussed in this study were:

RQ1: What socioeconomic (community, familial and societal) life experiences have shaped HBCU student health beliefs about diet and exercise?

RQ2: How does the campus environment and campus health services specifically influence HBCU student dietary health and PA behaviors?

During data analysis and interpretation, four themes emerged based on coded responses by participants. Theme 1, family and friends words matter, had a significant impact on both positive and negative perceptions and attitudes around healthy eating and PA. Theme 2, impact of the campus environment, triggered a response of the role of environmental, social, and academic influences to engaging in healthy behaviors. Theme 3, internal motivation for action, demonstrated participants being engaged based on body image and fear of developing a disease later in life. Theme 4, health center involvement, centered around the role campus health services have on health beliefs when students visit the center or attend health promotion events on campus. In this chapter I discuss an interpretation of the findings and limitations of the study, provide recommendations for

further research, describe positive social change implications, and conclude with a key message closing the discussion.

Interpretation of Findings

The student participants in this study had varied and descriptive feedback on their beliefs and influences related to diet, exercise, and interaction with the student health center. A group of currently enrolled HBCU students ($N = 13$) participated in two separate focus groups after reading and agreeing to informed consent. Students expressed how important the words of their family and friends were about eating healthy and exercising regularly, the way social media has a negative impact on body image, and the role that providers in the student health center play when they discuss chronic disease prevention. Students revealed that the cafeteria on campus often did not have a wide variety of healthy options, serving hours were always convenient, and the snack and quick options sold in campus vending machines were mostly junk food. As a result of these factors, students believed there were many barriers to accessing healthy food on campus that impacted body image by increasing the likelihood of consuming unhealthy options on campus. The shared experiences amongst this study group was similar to research on college student health behaviors presented in Chapter 2 and revealed similar beliefs and attitudes regarding campus health services, diet and exercise behaviors, and social influences. The following findings reflect the current literature and the data gained from participants in this study.

Theme 1: Words of Family and Friends Matter

Many of the students who participated in this study were originally from the Southeast and their beliefs reflected the literature, which usually finds that individuals who live in these areas tend to have poorer health behaviors and are at higher risk for developing chronic diseases like diabetes, obesity, and heart disease (Boutin-Foster et al., 2013, Chen et al., 2016, Petersen et al., 2019). Brooks and Moore (2016) concluded in a study of 22 AA young adults that their diet was negatively influenced by unhealthy food habits they learned from parents and immediate family. This phenomenon was reflective of student participants in this study where 10 of the 13 participants agreed they picked up a lot of unhealthy food habits (eating fast food regularly, minimal fruit and vegetable intake, high amount of fried food options) from parents and immediate family members that they knew were detrimental to health. Participants also revealed that more of their negative influences were learned from immediate family members whereas healthier habits were picked up from distant family members, similarly to findings by Brooks (2015) where a group of AA college students reported having more feelings of anxiety and worse eating habits when immediate family prepared most of their meals growing up. Cowe & Hamilton (2014) also found that first-in-family (first generation) college students reported their parents as having significant influence over their PA behaviors. Although parental influence was influential amongst this group of HBCU students, social media and friends significantly influenced their desire to engage in PA on campus. While I did not examine participants to determine if they were first-generation college students, results of the study were similar to findings of Cowe & Hamilton (2014).

Theme 2: Impact of Campus Environment

This study also confirmed the role health promotion and marketing can have on college students' PA behaviors. Studies on college health promotion and marketing by Szymona et al. (2012) and Kwan et al. (2010) supported the findings of my study, which found that the majority of advertisements on campus focused on exercise, and students responded more positively to messaging that was supportive and offered on-campus resources. Lastly, social media was shown to have the most significant influence over student body image with the vast majority of students acknowledging that social media can impact their mood and self-esteem. Most importantly, these findings were representative of the campus environment and the many nuances that can influence a student's daily experience and how they perceive health.

Ultimately, the findings of this study were similar to results of other research studies, but with an additional construct of a majority AA student group from an HBCU and examining the campus environment, which included the campus culture and how that influences student beliefs and behaviors. Culturally relevant positive impact messaging has the largest influence in student exercise and diet beliefs. Participant BM6 stated, "I like seeing positive Instagram posts from the health center, it motivates me, especially when its stuff about health I didn't know." Several participants agreed that social media can have a positive impact on beliefs related to a variety of topics (food choice, sexual health, and types of PA). Research has supported this belief and has confirmed that AA students have greater benefit when promotion materials have other AAs displayed in the

branding, uses simple terminology, and when messaging is primarily shared across digital formats (Romano & Scott, 2014; Sa et al., 2016; Yancu et al., 2011).

Students had a consensus that the campus environment was a barrier to accessing healthy food options, and the current layout of this particular HBCU presented a variety of challenges in both accessing and preparing healthy food options. Data revealed barriers such as residential hall polices against microwaves and refrigerators, poor cafeteria options, and healthy food options with distant proximity to campus. The findings of this theme can add to the literature on HBCU health beliefs and expand knowledge on college students' attitudes on diet. Szymona et al. (2012) found that campus policy can have an impact of cafeteria food options and how nutrition advertisements are displayed on campus. These findings support the need for comprehensive health policy on campus that supports positive health behaviors and makes available healthy food options in the cafeteria. To address physical campus barriers to accessing health services, Fennell and Escue (2013) conducted a pilot study to test the effectiveness of using mobile health clinics to reach college students. This study found that using mobile clinics on campus increased student access to medical professionals and increased follow-up appointments (Fennell & Escue, 2013). Due to the limited amount of research on the role of campus environment, there is an opportunity to further explore this factor in understanding student health behaviors.

Theme 3: Internal Motivation for Action

Participants were mostly driven by body self-image and how others would judge them. They were also motivated to exercise or visit the student health center due to

having a fear of developing a chronic disease later in life. The influence of internal factors to take action are seen in many studies that examine health behaviors. Das and Evans (2014) used the HBM to understand weight management perceptions in first-year college students, and James et al. (2012) developed culturally appropriate weight-management materials for AA women. These studies are reflective of how internal factors can influence an individual to take positive action to improve behaviors. Similar findings of this study demonstrated that students reported being more motivated to exercise when messaging was culturally appropriate and when they saw other peers being active. Seeing these images increased self-motivation and was a cue to action that students acknowledged motivated them to be active, especially when they felt disappointment when eating unhealthy foods.

Literature found that AAs die of chronic disease at a higher rate than any other racial or ethnic group (Lemly et al., 2014; Price et al., 2013; Petersen et al., 2019; Williams-York et al., 2013). Participants in this study agreed that fear of developing and dying from a chronic disease later in life was the primary factor for visiting the student health center, but it was not motivating enough to impact healthy eating behaviors. Yahia et al. (2016) found that nutritional knowledge and fear of early death motivated students to exercise and improve dietary habits, but it is important to note that only 13% of participants in this study reported being Black/AA. The differences that exist across racial/ethnic groups of college students related to nutritional knowledge, amount of PA engagement, and overall BMI was varied, but overall AA students tended to have higher BMIs, reported engaging in less PA, and ate less fruits and vegetables on a regular basis

than non-Black/AA students (James, 2006; Kemper, 2010; Osborn et al., 2016; Yahia et al., 2016). Overall, the results of this study supported the current literature that internal motivation for action can play a significant role in influencing health seeking behaviors to reduce the chances of developing a chronic disease later in life.

Theme 4: Health Center Involvement

Students perceptions about the role of the campus health services was varied and ranged from some students having no knowledge, most visit regularly, social media engagement being important, positive interactions with providers, and wait times seen as a barrier to access. Overall all but two of the students had visited the health center since being on campus. The utilization rates reported in this study were similar to previous studies such as Turner and Keller (2015), Lambert and Donovan (2016) and Lemly et al. (2014). Each of these studies determined that the majority of college students access campus health services for the primary reason of managing chronic medical conditions. Turner and Keller (2015) noted that over 60% of annual visits to campus health services were related to a primary and preventative care of chronic disease. A discovery from this study was the shared belief that students receive medical advice for risk factors of chronic disease from providers in the student health center on a consistent basis; however, students acknowledged they only receive this information if they ask specific questions about weight, diet, or exercise. These results are similar to a study by Lemly et al. (2014) that found forty-two percent of student health centers has no way of tracking students with chronic medical conditions and only twenty-four percent actively tracked and engaged students with a chronic medical condition. This study was important in

supporting the belief that when students are actively engaged with the health center and more is known about their lifestyle, providers are more likely to offer medical advice on disease prevention. Health promotion and outreach was described as the most effective method to educate and engage students across campus. Every student agreed they had seen outreach initiatives from campus health services such as; a campus screening events, exercise class, and positive marketing about diet. This form of outreach was consistent with the findings of Lambert & Donovan (2016), which found that provider outreach and student advocacy improved the patient-provider relationship and increased the likelihood of students visiting the campus health center.

Health Belief Model

Findings extended knowledge in the field of college student health and provided relevant data into understanding HBCU student health behaviors and how they are impacted by campus health services. To better understand the correlation of behaviors and campus health services, I utilized the HBM as a conceptual framework in developing focus group questions. Previous research studies have used this model to better understand behavioral change and develop initiatives that impact college students (Jones et al, 2014; McArthur et al., 2017; Scott, 2014). The HBM has been used to design health service programs and examine the effectiveness of how these programs effect health beliefs and behaviors. In this study, predetermined codes were developed, and responses were coded into categories based on HBM construct. Similar to the findings of Das & Evans (2014), perceived susceptibility impacted HBCU students' behaviors and influenced many of them to not see risk of disease a priority. Similarly, cues to action

was another HBM construct that seemed to have a significant impact on student beliefs. McArthur et al (2017) discovered that cues to action played a role in prompting students to engage in health seeking behaviors when they were promoted by marketing and health promotion outreach of health services. Students believed that a positive health cue such as seeing a flyer for an event often times reminded them to exercise or select healthier options from the cafeteria, this cue to action was a positive influence in campus health service outreach. Incorporating the HBM in development of the focus group questions yielded themes that were mostly reflective of the literature on college student health behaviors and beliefs about campus health services. The data analysis revealed patterns for incorporating the HBM to improve health behaviors amongst HBCU students using campus health centers.

Several research questions that incorporated the individual HBM constructs revealed important aspects of HBCU student behaviors. For example, *cues to action* and *perceived barriers* appeared to have the most impact on HBCU student beliefs and behaviors about the types of food choices made on campus and propensity to engage in a sufficient amount of PA. Students reveled they were likely to take a positive action towards health seeking behaviors when peers and social media acted as primary cues to motivate action. More specifically, BW2 explained that she is more likely to exercise with her peer and when friends are encouraging and supportive about staying healthy. These findings are reflective of research by Romano & Owens (2014), where AA participants in a peer health coaching program loss weight and reduced Body Mass Index (BMI) over a six-week period. *Cues to action* generated the highest amount of references

(*n*=22) from both focus groups with the majority of students agreeing that peers have a significant role in their decision making about exercising. *Perceived barriers* had the next highest amount of references amongst students (*n=19*). Research has shown that when barriers to accessing healthy food options and being able to engage in adequate exercise exist, individuals experience worse health outcomes and a decrease in lifespan (McArthur et al., 2017; Price et al., 2013; Stephens et al., 2013). The students expressed that due to the geographical location of many residence halls, it makes accessing the campus health center and the wellness center difficult. For example, BM4 said, "You have to ask the bus driver to take you to wellness center, we have stops all over campus, but the health and wellness center doesn't have stops, so you'll end up having to walk all the way over." Students acknowledged that although the campus health center was far from where most of the residence halls were, they would still visit the center if feeling ill, but not just for preventative care. Students also indicated many of the residential hall polices prohibited personal refrigerators and microwaves be permitted in rooms. Although current literature findings did not reveal resident hall policy as a factor or potential barrier in healthy eating, the students in this study believed not having access to a refrigerator in their room prevented them from storing and selecting healthier food options.

Limitations of the Study

The limitations to this study were reflective of qualitative descriptive focus group design. First, the focus group research design was a limitation due to the likelihood of deterring some students from agreeing to participate and be open and honest about their thoughts and beliefs. The nature of a focus group is to allow participants to openly

express their opinions amongst peers and due to the personal nature of discussing personal health habits a focus group could limit the number of participants who respond. Although focus group designs could deter participation, I was able to recruit an acceptable number of students within one-week of announcement, however four participants declined to participate after discussing details of the study. Although several students declined participation there was still sufficient participation to have a worthwhile discussion. Although this research design did not appear to significantly impact recruitment on an HBCU campus, this should be considered when applied to a different research setting.

Next, another limitation of this study is the nature of individual self-reporting where results of the study are dependent on the memory and perception of participant experiences. Results were dependent on the memory of participants and their ability to recall life events and experiences. Due to the sensitive nature of the discussion around family beliefs and neighborhood experiences it can limit the depth and transparency in student feedback. Several participants had difficulty recalling specifics about their childhood experiences related to food choice and admitted they couldn't relate to questions about influences of distant family members. This limitation is important to note when recruiting young adult AA participants and developing probing questions that seek to expand on childhood experiences.

Lastly, my role as Director of Student Health could create a potential for bias because I lead the student health center on campus and have a unique relationship to the subject matter being discussed. Although I am an employee at the research site my role

does not provide direct care and I did not know any of the students prior to recruitment and data collection. In order to limit potential basis and improve trustworthiness I disclosed my position prior to data collection. I also asked questions verbatim from the interview guide and limited my personal commentary during discussions. If students were unclear about certain questions, I provided explanations within context of the study and did not allow my background our current position to create the perception of basis.

Recommendations

AAs, and in particular AA young adults have disproportionally worse health outcomes and are exposed to most risk factors attributed to chronic disease (Mellman et al., 2015; Pauline, 2013; Sa et al., 2016; Stephens et al., 2015). Health promotion research has indicated that focusing on health behaviors early can improve healthy aging and longevity (Jalilian et al., 2014; Miller et al., 2015; Osborn, et al., 2016). College students are developing health problems related to inactivity and poor diet and AA students who attend HBCUs are at higher risk when compared to white students who attend PWIs (Sa et al., 2016; Saafir & Manuel, 2012; Topè & Rogers, 2013). Although research indicates chronic disease is a growing problem amongst college students, there is limited data which incorporates student health beliefs and HBCU campus health services. This study revealed several recommendations that were grounded in the strengths and limitations of the student feedback and literature review. The following sections reveal both practice and research recommendations for future application.

Practice Recommendations

The data suggested that students believed the campus environment influenced their perception and behaviors with a specific focus on; access to healthy foods, direct provider contact in the health center, and availability of healthy resources and information on campus. All of the students reported they have a desire to eat healthy but believe better options should be made available in the cafeteria and vending machines. Residential students believed the barriers to eating healthy were also present in residential halls due to policies that limited cooking using certain types of appliances such as; toaster ovens, hot plates, and portable grills. Other polices prohibited refrigerators in certain rooms while in other rooms, refrigerators could only be a certain size which students agreed limited the amount of food that could be stored and was usually shared amongst multiple roommates. BW3 indicated “It’s hard to keep any fresh food in your dorm room because we’re sharing a refrigerator with three other girls”. Future practice implications could focus on implementing campus policy around residential life and housing to improve students’ access to storing perishable foods by allowing small refrigerators in all rooms. In addition to allowing general appliances in residential halls that are used to prepare healthy food options, appliances could perhaps be in a common area to ensure health and safety considerations.

Due to the influence of social media on the beliefs and behaviors of college students and HBCU students specifically, student health services should consider a practice recommendation of increased outreach on social media using multiple channels. For example, the use of at least two social media accounts should be considered and used

to actively engage students online. Students can be encouraged to follow the account at orientation events and other campus activities. The use of positive messaging is important to HBCU students; therefore, health center staff should ensure social media messaging is positive and uses encouraging language and imaging.

The findings of this study revealed that students have a mostly positive experience with providers in the student health center. Students also indicated that when they ask providers about diet and exercise, they received valuable information and most times incorporated the clinical recommendations into their daily life. A practice recommendation would be to ensure that during a medical visit, all student health center providers ask specific questions related to social history and lifestyle as a standard practice. These questions could be recorded in a "social history" section of a patient file and help generate an ongoing patient-provider dialogue about healthy eating, weight management and exercise prescription as a form of preventative care.

Research Recommendations

A recommendation for further research would be to conduct a comparative analysis of campus health marketing and promotion using social networks as a primary medium. All students in this study agreed they get the majority of their information from social media and are heavily influenced by what they consume online. Every student in this study had at least two social media accounts and agreed they would like to see more tips and advice about eating healthy from professional sources in print and online. A study focusing on social media for health promotion could revel key findings and help campus health centers determine the most substantial approach to effectively

communicating and engaging with students. Another recommendation for further research is exploring the relationship amongst campus health providers and HBCU students. Research has shown that health outcomes are improved when patients feel like that have a positive relationship with their primary care provider (Lambert & Donovan, 2016). Students in this study indicated they receive helpful information and support on managing weight and eating healthy from campus health providers, but only when they inquire directly. A future study could incorporate this feedback in designing an exploratory study that examines how chronic disease is discussed and managed in a campus health center. Lastly, a research recommendation is to conduct a comparative study amongst other HBCUs in different geographical regions of the country. Due to the fact this study was conducted at one HBCU in the southeast, conducting a similar study amongst other HBCU students could possibly improve understanding in HBCU student health research.

Implications for Positive Social Change

The health disparities that exist amongst AAs are well documented and have been researched using different settings and populations. The importance of addressing inequities in health outcomes is a key indicator for The Office of Minority Health (2017) and has been identified as a primary cause of morbidity in the AA community. Understanding how health behaviors are influenced in HBCU students will enable campus health centers to develop more targeted culturally relevant programs and services. The results of this study are from the perspective of current HBCU students and help further understanding in a field with minimal research on HBCU student health

behaviors. Potential impact for positive social change at the individual level can be seen in understanding how health behaviors can be positively affected around diet and exercise behaviors. This is important because it allows students to develop positive exercise and eating habits at an early age which can results in a healthier life and decrease the prevalence of chronic disease. The results from this study can be used in developing programs that target healthy eating and help impact campus health centers that serve majority AA students. Potential for social change can be seen in the positive impact of a healthy campus environment and the lasting effects it can have on young AA adults throughout their lifespan. Students in the study expressed how the campus health center plays a vital role in influencing behaviors and their desire to have a more transparent relationship with providers in the center. Addressing health behaviors of young adult AAs from a clinical perspective and through prevention efforts can aid in closing the gap in health disparities that exist in the AA community. Higher education administrators could use the findings in this study to strengthen health delivery services on campuses and improve the health and wellbeing of students who attend these institutions.

Conclusion

Historically Black Colleges and Universities (HBCUs) play a significant role in the development of students, most especially those of AA descent. Many of these colleges have a holistic mission to cultivate and position young adult AAs to be productive citizens in society that support their communities. An important aspect of being a productive citizen is having positive health behaviors and reducing negative behaviors that can lead to developing chronic disease later in life. This study sought to

understand how AA student dietary health and PA behaviors are impacted by the HBCU campus environment and health services specifically. The outcomes of this study were similar to previous research on college student health, where health behaviors were usually poor, friends often times influenced bad habits, and there was limited access to healthy food options on campus. The research design was unique in that an HBCU was the primary setting and qualitative feedback was used to determine how influential campus health services were on student behaviors. Many HBCU students come from similar disadvantaged backgrounds who have multiple family members that have either died from complications of a chronic disease or are presently living with a disease. Student participants were engaged and transparent about their beliefs which lead to findings that help further understanding of how college campuses can design more engaging services that impact health behaviors. When campus health centers are able to effectively address poor health especially diet and exercise behaviors of students, it can have short- and long-term benefits such as, improved overall body satisfaction and a decrease in chances of developing a chronic disease later in life. These benefits can greatly reduce the high amount of chronic disease in AA communities such as; obesity, type II diabetes, high blood pressure, including metabolic syndrome. Finally, this study highlighted the importance of understanding young adult AA health behaviors and the role an HBCU can have on impacting these behaviors from the perspective of students. An important finding from this study was how intricate a campus environment can be to navigate for a student and many of them desire positive support systems. If HBCUs are to truly exemplify their holistic mission of developing productive citizens, then campus

health services must focus on wellbeing and advocate for it to be integrated into all aspects of campus life. The inclusion of health and wellbeing will ensure students have a productive experience on campus and develop positive health behaviors that last into adulthood and ultimately shape the health outcomes of their neighborhoods and communities.

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Appendix A: Demographic Questionnaire

Study: The Impact of Campus Health Services on the Attitudes, Perceptions, Beliefs & Behaviors of Historically Black College/University (HBCU) Students

1. **What is your gender?**

   ☐ Male

   ☐ Female

   ☐ Self-identify as ________________

2. **What is your classification?**

   ☐ Freshman

   ☐ Sophomore

   ☐ Junior

   ☐ Senior

3. **What is your current enrollment status?**

   ☐ Full-time

   ☐ Part-time

4. **Do you identify as Black/African-American?**

   ☐ Yes

   ☐ No, I identify as ________________

5. **What is your current age?**

   ☐ 18-20

   ☐ 21-23

   ☐ >24

6. **When was the last time you visited the Student Health Center (SHC)?**

☐ Within the past week

☐ Within the past month

☐ Within the current semester

☐ I have never visited the SHC

7. **Do you currently live on campus?**

☐ Yes, I reside in ____________________ (list residence hall)

☐ No, I live off campus

Appendix B: Focus Group Interview Guide

Interview Guide

The Impact of Campus Health Services on the Attitudes, Perceptions, Beliefs, and Behaviors of Historically Black College/University (HBCU) Students

Moderator:

Thank you for coming in today and being willing to take part in this important discussion. This discussion will be centered around your personal beliefs and ideas about health and what motivates/influences your behaviors. You will also have the opportunity to discuss your perceptions of the campus health center and the role that plays in your food and exercise habits.

I will be audio recording this session, so please speak clearly, loud enough so the group can hear you, and one at a time. You have the opportunity to speak openly and honestly about your beliefs and health influences, there are no right or wrong answers. Your ideas may not always align with what other participants are saying, but don't worry I encourage you to speak from your own individual perspective.

Please address each participant by the name on their nametag, this will allow us to better identify each other and be respectful of each speaker. All information will be kept in a secured locked file and no identifying information used in the study or reports. Also, transcripts from this focus group will be made available following completion of the study in order for you to review for accuracy of statements.

Are there any questions before we begin?

Do you consent to being recorded? [Await oral confirmation]

We will start by going around the room and having everyone introduce themselves and explain where you're from. Once we finish introductions, we will begin discussing your perceptions and beliefs about health.

Research Questions
RQ1- What community, familial and societal life experiences have shaped HBCU student health beliefs about diet and exercise?
RQ2- How does the campus environment and campus health services specifically influence HBCU student dietary health and physical activity behaviors?

Probe/Ice Breaker Question
Q1a: Thinking about the environment you grew up in, more specifically your family and circle of friends, how was diet and exercise discussed/viewed?
Q1b: Thinking about the environment you grew up in, more specifically your community and at school, how was diet and exercise discussed/viewed?
Q2: Thinking about the things you experience on campus including the student health center (SHC), what role does living and being on campus play in how you view eating healthy and exercising regularly?

Perceived Susceptibility
Q1a: Do you believe being physically inactive can put you at risk of developing chronic disease or shortening your lifespan?
Q1b: Do you believe eating unhealthy on a regular basis, 2-3 times a week can put you at risk of developing chronic disease or shortening your life span?
Probe Question
Q1: How did your experience growing up shape this belief?

Perceived Seriousness
Q2a: Have your beliefs about the consequences of not being physically active changed since you've been on campus? Are these beliefs significant enough to alter your habits? Why or why not?
Q2b: Have your beliefs about the consequences of not eating healthy changed since you've been on campus?
Q2c: How have your family and social networks influenced your beliefs about the consequences of not eating healthy?
Q2d: How have your family and social networks influenced your beliefs about the consequences of not being physically active?

Perceived Benefits
Q3a: What benefits can you identify for engaging with an HBCU student health center about topics related to being physically active? If so, what benefits do you receive from engaging with an HBCU student health center on these topics? If not, why?
Q3b: What benefits can you identify for engaging with an HBCU student health center about topics related to eating healthy? If so, what benefits have you received from engaging with an HBCU student health center on these topics? If not, why?

Perceived Barriers

Q4a: What barriers can you identify that prevent you from engaging with an HBCU student health center regarding physical activity?
Q4b: What barriers can you identify that prevent you from engaging with an HBCU student health center on topics regarding eating healthy?

Cues to action
Q5a: What cues to action or triggers exist on campus to help motivate you to exercise?
Q5b: What cues to action or triggers exist on campus to help motivate you to eat healthy?
Q5c: What triggers on campus do you believe may keep you from taking action to exercise?
Q5d: What triggers on campus do you believe my keep you from taking action to eat healthy?

Self-Efficacy
Q7a: How confident are you in being able to eat healthy and exercise regularly while on campus?
Q7b: What can an HBCU student health center do to increase your confidence in eating healthy?
Q7c: What can an HBCU student health center do to increase your confidence in engaging in regular exercise?
Probe Question
Q1: How did your experience growing up shape this belief?

Appendix C: Codebook

Code/Term	Definition	Purpose/Meaning	NVivo description
PSUS	Perceived Susceptibility	PSUS was important to understand individual belief about risk for developing chronic illness based on behaviors	*"Personally, until I was in this [health] class, I really didn't think about stuff like that. I wasn't really caring about my health or catching a disease."*
PSEV	Perceived Severity	PSEV determined if students believed certain health problems were serious enough to change negative behaviors	*"I know some really big people who are living their best lives, eating whatever and don't worry about eating healthy or nothing. It makes we wonder if eating bad and maybe getting a disease later is really that bad."*
PBEN	Perceived Benefits	PBEN helped understand health seeking behaviors and what influences positive action.	*"To me exercise should play some role in everybody's life because you never know the type of effect it could have on you, whether it's like physically, mentally, emotionally. I just feel like exercise is something that is a satisfactory type thing to everybody, like, for people to enjoy it."*

Code/Term	Definition	Purpose/Meaning	NVivo description
PBAR	Perceived Barriers	PBAR were impediments that students believed interfered with access to healthy food and physical activity.	*"Basically, the only thing you can cook in your room is stuff that goes in the microwave, and microwaved foods are never really healthy."*
CUES	Cues to Action	CUES described what factors influence certain health promoting behaviors on campus.	*"Seeing when they have yoga on the Quad or when it's a workout class, I can make it to; I'll go"*
SELF	Self-Efficacy	SELF was a code that gauged the level of confidence students had in engaging in healthy behaviors.	*"I'm confident I can get back to what I was doing; working out regularly. I just had an off semester. I had a different schedule, so it was hard to stay committed."*
BODY	Body Image	BODY is how students perceive their shape, size, and weight in comparison to social perceptions of a "perfect body".	*"My motivating factor is to maintain a certain body image. That's what encourages me to work out, and exercise. I want to take my shirt off when I play basketball and not have a big ol' gut, especially not as a young dude."*
BARPA	Barriers to Physical Activity	BARPA explained how campus barriers can impede access to physical activity.	*"I think I could at least exercise. I have time, so I could put up at least an hour to exercise but the wellness center is away from all the residence halls, so it's not like you will just walk by it."*

Code/Term	Definition	Purpose/Meaning	NVivo description
INFO	Information and Resources on Campus	INFO related to healthy eating and physical activity was discussed as a factor for influencing student beliefs.	*"I don't really see that many things around campus, but I do hear about workout classes and events from my friends, they send these health newsletters out to our email, but people don't really read them like that."*
FOOD	Limited Access to Healthy Food on Campus	FOOD what students have access to eating on campus and the ability to prepare healthy meals in residence halls.	*"I feel like being up here on campus, you only have certain food choices, and they usually are bad or just nasty."*
FEAR	Fear of Disease Later in Life	FEAR how students believed their current behaviors would increase the likelihood of developing chronic disease later in life.	*"I have a long string of heart problems and diabetes in my family. So, I already believe that I'm genetically prone to get it. So, it kind of scares me."*
VISIT	Visiting Student Health Center	VISIT how visiting the student health center impacted health outcomes including receiving care, information.	*"I had a good experience when I talked with one of the doctors here, she was a little aggressive, but she was speaking the truth about my weight and it made me eat better for a few weeks, but I still went back to eating bad."*
NFAM	Negative Influences from Family	NFAM were both traditions and beliefs students presented with on campus around healthy eating and physical activity.	*"We walked and stuff, but my family wasn't really high on diets and stuff, especially not regular exercise."*

Code/Term	Definition	Purpose/Meaning	NVivo description
PFAM	Positive Beliefs learned from Family	PFAM the beliefs and behaviors that students learned from family and still practiced on campus.	*"My cousins were really healthy and active, one of them was an all-state volleyball player. That's actually what got me playing volleyball. I started playing in middle school on the YMCA team and lost a lot of weight. I was like "oh I'm getting fine, I'm going to stick with this" and It actually stuck, I still play today."*

Code/Term	Definition	Purpose/Meaning	NVivo description
NFRI	Negative Influences from Friends	NFRI measures the impact of negative peer pressure and lack of support towards practicing healthy habits on campus.	*"I think what would motivate me is, seeing how many likes I get on my Instagram cause I done got big and when I look at my old posts when I was smaller, I was getting 100+ likes, now my posts be getting like 50. It makes me wonder if people think I'm too big, so yeah, I get a little self-conscious."*
PFRI	Positive support from Friends and Social Networks	PFRI was important to understand how social media and friends can positively influence health beliefs and perceptions.	*"My community was very healthy. There were cheerleaders, soccer players, football players, everyone was always doing things to stay fit, so I naturally picked up those habits.*

Appendix D: Word Cloud (Node Report)