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Project B.L.A.C.K.

Barriers Lifted After Cultivating Knowledge:

Assessing individualized barriers to obesity prevention in Black women using the Teach-back method

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“In partial fulfillment of the requirements for the Doctor of Nursing Practice Degree”

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Abstract

Background: Black women are diagnosed, disabled, and die from obesity and associated chronic diseases at higher rates than any other race or sex. Further exploration is warranted on how advanced practice registered nurses (APRN) can improve culturally relevant health education and counseling delivery.

Objective: Explore individualized barriers and the healthcare provider's roles in providing care affecting obesity prevention among Black women. While simultaneously assessing the effectiveness of educating Black women using the Teach-back method to understand health habits and attitudes.

Method: A mixed-method design was utilized in group sessions and surveys. Participants identifying with obesity and associated diseases were recruited from a predominantly Black church in Atlanta. After completing a demographic survey and pre-Readiness to Change (RCQ) questionnaire, they engaged in weekly, one-hour educational sessions via Zoom addressing the four common barriers identified in the literature. They ended with a 5-10 minute teach-back session. Participants completed a post-RCQ questionnaire after the 4-weeks.

Results: Twenty women completed the intervention. Descriptive statistics and qualitative data from surveys, audio, and emails were used for analysis. Paired sample *t*-test revealed no statistical significance and showed no correlation between pre and post-test RCQ scores after tailored health education was provided using teach-back. However, correlational analysis between BMI, education, and income level was significant with a *p*-value of 0.05.

Discussion: Black women depend on healthcare providers for counseling and solutions. Furthermore, they require different approaches in screening, health promotion, and interventions that consistently assess individual risks, tailored education, and the use of Teach-back. Results emphasized that Black women experience rates of obesity differently from other races despite income or education level that was predominantly cited to be secondary to stress. Stress was voiced as a considerable contributor to disordered eating, decreased engagement in physical activity, and lack of motivation.

Key words: Black women, obesity, prevention, APRN-led intervention, teach-back method, health literacy

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Background and Significance

Obesity has been labeled as an epidemic in the United States since the late 1990s; however, the topic of how to prevent further cases and complications associated with it remains a true problem for all parties affected (CDC, 2020). In 2016, obesity and its associated chronic diseases cost the U.S. approximately \$480.7 billion in direct health care costs, with an additional \$1.24 trillion in indirect costs secondary to a loss of economic productivity (Waters & Graft, 2018). The total costs of care in 2018 for chronic diseases due to obesity and excess weight was approximated at \$1.72 trillion equaling 9.3% of the U.S. gross domestic product (Waters & Graft, 2018). According to the Centers for Disease Control and Prevention (CDC), in 2017 roughly 43% of American adults over the age of 20 were obese, and 73.6% of American adults were overweight including those qualifying as obese (CDC, 2020).

Adults with a calculated body mass index (BMI) of 25-29.9 are classified as overweight and adults with a calculated BMI of equal to or greater than 30 are obese (CDC, 2020). There has been a shift in the amount of weight one carries and has surpassed the standard definition of obesity. Individuals with a BMI of 40 or greater are placed in the severe obesity category (Hales et al., 2020). Public health officials and healthcare providers have noticed the upward trend and there is a pause for concern given the presence of severe obesity is linked to an increased diagnosis of comorbidities (CDC, 2020; Hales et al., 2020). Severe obesity is more prevalent in women (11.5%) and non-Hispanic Black adults (13.8%), furthering the risk of obesity-related complications such as cardiovascular disease, end-stage renal failure, and other comorbidities (Hales et al., 2020).

Black women experience disproportionately higher rates of obesity in the U.S., equating to every four out of five Blacks classifying as obese (Hales et al., 2017; CDC, 2020). They account for 54.8% of all overweight and obese adults in the U.S. (Hales et al., 2017). The largest subgroup of Black women affected are those between the ages of 45-64 years; statistically this group has the highest numbers of diagnosed chronic diseases (CDC, 2020). Numerous studies contributed these high numbers to lower socioeconomic status, high school/General Education Development (GED) equivalent or less; decreased or minimal fruit and vegetable intake; lack of physical activity; and a plethora of cultural factors, such as body size perceptions and distrust of societal norms of weight and the American healthcare system in general (Agyemang & Powell-Wiley, 2013; Horton, 2015; Cameron et al., 2018).

According to the CDC, Black women account for 82% of overweight and obese individuals in the United States per BMI standards, while White and Hispanic women account for only 63.2% and 77.2% respectively (Dodgen & Spence-Almaguer, 2017). This percentage affects the community and continues to be an even larger public health issue. Within the Black community alone, the rates of chronic diseases are higher compared to Whites. Blacks are more likely than Whites to suffer from complications of chronic diseases resulting in higher death rates and shorter life spans (Gourdine, 2011). Economically the Black community, particularly the women, contributes heavily to the cost of healthcare as Black women are diagnosed, disabled, and die from chronic diseases at higher rates compared to non-Hispanic, White women (Dodgen & Spence-Almaguer, 2017). Chronic diseases such as hypertension (HTN), hyperlipidemia (HLD), type 2 diabetes (T2DM), cancer, and heart disease are just a few chronic conditions attributable to obesity and responsible for the greatest number of deaths in the Black community (Goudine, 2011). Obesity is considered a modifiable disease with adjustable risk factors

contributing to its cause; however, research continuously states the same things about culture and its influence on an individual's habits within ethnic communities (CDC, 2019). Current literature highlights the lack of success of weight loss programs in Black women due to the deficiency of postintervention maintenance, lack of representation and quality studies with Black women in the center, the effectiveness of group therapy, the importance of healthcare provider support, and that further research is required to explore why Black women continuously rank first in the diagnosis of obesity and associated chronic diseases (Dodgen & Spence-Almaguer, 2017; Agyeman & Powell-Wiley, 2013; Cameron et al., 2018; Schlint & Haglund, 2015).

Clinical Nursing Problem

“Genetic, behavioral, and social determinants likely contribute in a multifactorial and an inter-connected manner to the genesis of obesity in Black women” (Agyeman & Powell-Wiley, 2013, p. 379). These factors continuously shown in research and statistics further promote this epidemic within this highlighted population (Agyeman & Powell-Wiley, 2013). Integrating cultural influences such as hair care techniques, perceptions of body image, and consistent counseling with primary care providers are vital for rates to steady and eventually decrease on an international scale. Ultimately, programming needs to be implemented that will serve overweight and obese Black women at risk for developing chronic conditions stemming from increased body mass by assessing their barriers and habits to preventing obesity. Providers should be cognizant of the need to communicate and assess Black women's concerns and health issues on an individualized and cultural level, while considering that this population has their own inherent thoughts and feelings on the healthcare system, biases, and fears that potentiate specific barriers to weight loss and prevention of excess weight. Barrier assessment and education requires the provider to examine their own perceptions and biases that would prevent the fostering of open

communication, examine the health literacy and numeracy of the patient, and proctor care in language understood by the patient. Estimates show that 90 million Americans are affected with low health literacy levels (LHL) making it difficult to understand recommendations, medication indications, and treatment plans (Klingbeil & Gibson, 2018).

This Doctor of Nursing Practice (DNP) project utilized the Teach-back method to educate Black women aged 18-45 years on how to debunk myths about obesity, as well as, how to incorporate healthier and feasible practices for exercise, nutrition, psychological habits, and religiosity's role in promoting healthier living. Participants were recruited from a predominately Black church in metro Atlanta. Churches within the Black community hold a powerful influence and can positively impact physical beliefs and practices (Bauer et.al., 2017). Incorporating key community stakeholders, academic research institutions, and local healthcare providers in initiatives that look to decrease health gaps and disparities can increase the awareness of health disparities in addition to equipping community members with tools to live healthier lives for themselves and their loved ones.

Clinical Question

Will utilizing the Teach-back method in Black women to assess individual barriers to obesity prevention contribute to better health habits and attitudes towards weight loss to combat chronic diseases over a 4-week period?

Purpose of the Project

The project's aim was to identify and understand individualized barriers that influence excess weight and obesity by BMI standards in Black women. In doing so, providers, specifically the APRN, are able to care for obese Black women and streamline clinical processes

using the Teach-back method. The primary focus was not on weight reduction, instead, on how the individual perceives obesity, body image, their culture, and the present and future impacts obesity has on one's health.

Project B.L.A.C.K. consisted of a 4-week intervention with weekly classes on Zoom™ allowing participants to engage in open dialogue regarding their barriers to engaging in healthy eating and physical activity habits, chronic diseases prevention and maintenance, and emotional triggers that are known contributors to obesity.

Review of the Literature

Search Strategy

After screening for significant relevance and synthesizing the evidence for the purposes of the change project, 21 total articles were utilized. Several search terms were used including obesity and Black/African American women, obesity prevention in Black women, Health Promotion Model in Black women, Health Promotion Model and obesity, weight loss interventions and Black women, Nola Pender, teach-back method, Readiness to Change questionnaire (RCQ) and obesity, community-based participatory research (CBPR), and Transtheoretical Model for Change/Stages of Change (TTM/SOC). Search parameters spanned from 2012 through 2020, excluding one sentinel article dating back to 1993. Studies were excluded with sample sizes that included White women, women over the age of 65, studies conducted outside of the United States, or published in other languages other than English. In addition to peer-reviewed articles, one book was used published in 2011.

Search Results

The initial search from Galileo yielded over 100,000 articles including experimental studies, non-experimental studies, and literature reviews. The search was narrowed by using PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), American Psychology Association (APA) PsycINFO, and the Centers for Disease Control and Prevention (CDC) databases. One hundred and nine articles were yielded within the search parameters. Articles were narrowed and excluded including women of other ethnicities, studies focusing on women greater than 45 years of age only, studies conducted outside of the United States, and studies and recommendations that included adolescents. This resulted in 21 articles total varying among qualitative studies, quasi-experiments, literature, and systematic reviews on the complexity and multitude of factors contributing to obesity in Black women. Articles must have included interventions using Black women only, perspectives and studies on Black women's health and obesity, Teach-back method, interventions with adults, community-based participatory research, and RCQ/TTM. Fifteen articles were used for evidence appraisal and synthesis of the literature.

The Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) is a tool used in the reviewing of literature during a systematic review, this approach rates the level of literature from strong to weak (Mustafa, et al, 2013). Throughout the literature review, a microscopic assessment is done on each piece of literature assessing the validity of the evidence and then assigning a grade of "level I-V." The pieces of literature are graded by looking at the design of the study, the validity of the clinical question, sample size, certain biases, and inconsistencies of results. This system allows researchers to appropriately assess the population,

intervention, comparison, and outcomes (PICO) question; the findings of the studies, and confidently follow the recommendations.

Level I literature has the highest quality of evidence and is the best way to obtain and disseminate research, this approach uses randomization, adequate controls, and is consistent in their findings (Johns Hopkins, 2017). Randomized control trials (RCT), systematic reviews of RCT, and experimental studies are examples of Level I evidence (Mustafa et al., 2013). Level II evidence includes quasi-experimental studies, systematic reviews with a combination of RCT, non-experimental and qualitative studies with or without meta-analysis (Dang & Dearholt, 2018). Level III includes non-experimental studies, systematic review of a combination of RCTs, quasi-experimental and non-experimental, or non-experimental studies only, with and without meta-analysis (Dang & Dearholt, 2018). Additionally, qualitative studies or systematic reviews are included with and without meta-analyses. Level IV and level V evidence no longer consist of studies, but of opinions from respected authorities, and experimental and non-research evidence (Dang & Dearholt, 2018). These pieces of evidence consist of clinical practice guidelines, and consensus panels by respected authorities and/or nationally recognized experts; literature reviews, quality improvement evaluations, and case reports (Dang & Dearholt, 2018).

Synthesis of literature

The majority of the literature compiled for this DNP project ranked between Level III to Level V with high to good quality ratings. Evidence found throughout the systematic review supports the notion that Black women have a myriad of reasons for meeting obesity criteria instead of preventing it and its associated chronic conditions. Five key themes or topics repeatedly appeared in the literature regarding obesity prevention in Black women including: the

role of stress; lack of representation; body image and perception; the importance of a healthcare provider; and changing the language of obesity.

The Role of Stress

There is a growing body of evidence that stress leads to poor eating habits as a coping mechanism. Emotional eating is a term used frequently throughout the literature, citing the ingestion of comfort foods typically higher in sugar and fat content when encountering perceived stress. Stress and eating as a result of its presence has negative effects on Black women. Black women have been shown to experience stress at higher levels compared to women from other racial groups (Diggins et al., 2015).

Diggins, et al. (2015) conducted a study on the association of perceived and contextualized stress on emotional eating within college-aged Black women and found that perceived stress was correlated with emotional eating. However, there was no statistically significant evidence on the effect of BMI within the sample. In Lopez, et al. (2014), a causal study in Black women and obesity literacy in Florida, women cited that the main cause of their weight struggle was the presence of stress in their lives. Stress was linked to experiences in their personal lives at home, work, and relationships with significant others and children. With the presence of stress, Black women in the Lopez study felt that stress contributed to eating too fast, eating the wrong things, and prevented them from exercising (Lopez et al., 2014). In this study, women stated the most common reasons for their overweight and obesity status was secondary to their emotional or mental health, living stressful lives, and family issues.

Middle income Black women cite that the presence of constant stress in their lives is a contributor to experiencing overweight and obesity at greater rates than lower income Black women (Walker & Gordon, 2014). They cite that work, family and financial responsibilities, and

educational pursuits prevent them from engaging in more physical activity or cooking healthier foods at home (Walker & Gordon, 2014). These findings were highlighted in a review of National Health and Nutrition Examination Survey (NHANES) data from 1999-2010 on the effects of educational attainment impacted Black women's rate of obesity and C-reactive protein (CRP) levels (Curry, 2019).

Previous research states that women of other races have higher levels of obesity with lower education attainment and socioeconomic status (Banerjee et al., 2018; CDC, 2020; Walker & Gordon, 2014). Black women have become the most educated group in the United States compared to any other race or sex; however, their health outcomes have not followed the same trajectory (Curry, 2019). NHANES surveys from 34,888 Black women aged 20-84 were observed from 1999-2010, excluding pregnant women and showed a degree of obesity within every level of education (Curry, 2019). The most significant finding suggested that exposure to stress has a significant impact on body mass index compared to the reference group (Curry, 2019).

Lack of Representation

The majority of weight loss interventions that focused on Black women demonstrated poor longitudinal results for maintaining weight loss or successful interventions (Schlint & Haglund, 2015). Many findings in the review of the literature were compared to studies with White women as the majority of the participants further emphasizing the lack of success and need for different interventions. Statistically Black women are recruited at lower numbers for experimental studies, especially weight loss studies, compared to their White counterparts (Romano & Scott, 2014). Sample sizes of Black women in larger studies that focused on obesity in women have traditionally included a small percentage of these women if any. Further

affecting the small percentage of studies conducted in Black women only, the majority of weight loss and reasons for obesity within this population have been primarily conducted in churches and lower income areas. Recruitment sites characteristically used in these studies do not account for a number of Black women that may not belong to a religious affiliation nor those of higher socioeconomic status simultaneously struggling with obesity.

The lack of representation in studies that attempt at targeting chronic issues such as obesity, misses the opportunity at implementing tangible and reasonable programming in those affected most. As the obesity crisis continues garnering national attention and holding high rankings as a public health issue, it is vital that studies are constantly conducted with individuals representing the highest percentage according to national studies and databases.

Body Image and Perception

Statistics continue to point towards Black women as the largest representative of obese individuals in America; however, this statistic is not representative of their ideals on body image or attractiveness. Culturally, Black women are more comfortable and accepting of heavier frames as their inherent belief is that these body types are more socially accepted and appealing (Agyman & Powell-Wiley, 2013). The acceptance of larger body frames and rejection of “thinness” has potentially created an unrealistic view of health that can be detrimental over time. Throughout the literature, it was noted that interventions and prevention programming should be personalized to the different cultural factors that predispose Black women to the diagnosis of overweight and obesity (Walker & Gordon, 2014; Cameron et al., 2018). Eleven Black women were recruited for a study to assess their perspectives on health, attractiveness, and body image; these women rejected the thin ideal and accepted that there is no one body frame that fits all (Cameron et al., 2018).

Following the same thought process, a larger study with a more representative sample size of 240 women investigated whether demographic and health history factors, religious involvement, and beliefs about body image could explain motivation and confidence to lose weight among church-affiliated Black women. Researchers recruited women between the ages of 18-80 from six different predominantly Black churches to assess if a relationship existed. Findings from the study revealed that Black women put a greater emphasis on physical well-being and accepted the health benefits associated with weight management more than altering physical appearance. They felt strongly about their religious beliefs in relation to their body and its image in God's eyes (Bauer et al., 2017). Despite the lower number of longitudinal studies conducted on Black women as a whole, especially in regard to the causation of obesity, literature overwhelmingly highlighted the social and cultural differences experienced in minorities compared to White women. Black women are in a unique position as they juggle culture norms within the Black community and within society as a whole. These struggles experienced by Black women have been studied in higher numbers and from that theories and entire schools of thought have emerged such as intersectionality and the Objectification Theory.

Intersectionality explores the point where race and gender intersect and how a woman's lived experience of racism and sexism simultaneously compound with dueling body images and culture norms of Black and White communities (Watson et al., 2019). Objectification theory also performs a role in a woman's mind of what an acceptable body image is within society, leading to the creation of popular tropes in mainstream media like "Sapphire," "Mammy," and "Jezebel." Hollywood created the narrative of Black women being unattractive to the White man by dehumanizing them and using them as "the angry Black woman," the overweight, docile maid," or "sexual beings," respectively (Stings, 2020; Pilgrim, 2012). The Mammy and Jezebel

characters were created out of racist ideals from the majority in efforts to control Black women and their roles in society. By constantly seeing these Black actresses displaying personality traits and body types stereotypically synonymous to Black women, and their pseudo acceptance on screen, the Black community was expected to accept and adopt what the majority thought of Black women, their aesthetics, and role in society. These tropes, along with historical events, and traumas have negatively contributed to anxiety, depression, disordered eating, and body image within women in the Black community (Watson et al., 2019).

The Importance of a Healthcare Provider

Healthcare providers from physicians, nurse practitioners, physician assistants, and others are at the forefront of patient care and can evoke change, especially in the primary care setting. Within the primary care setting, Black women report a lack of consistent counseling on nutrition, physical activity, and behavior change that could impact their health behaviors and weight loss (Cameron et al., 2018). This factor was highlighted in the Lopez study as women were asked how they felt about seeking medical advice on weight loss. The majority of women stated that they were advised by their providers to lose weight but were not given the tools on how to lose it nor how to change their behaviors that contributed to weight gain (Lopez et al., 2014). In addition to not being told how to achieve weight loss, their providers did not provide any preventative education on how to avoid obesity and associated chronic diseases.

The impact of a primary care provider's obesity counseling with Black women in lower income areas revealed that they yearned for conversations about their weight and how to prevent obesity during office visits (Banerjee et al., 2018; Lewis et al., 2014). Most of the participants thought that having discussions on weight management, how excess weight contributed to chronic diseases, the ability to celebrate small successes in weight loss and maintenance with

their providers, and continuity of care regarding obesity education and ongoing conversations was important to their well-being and overall health (Banerjee et al., 2018).

While having a provider that provides counseling and tools for weight control and chronic disease prevention is important, a study in 2017 found a positive correlation in women who had a higher frequency of visits with their provider and the promotion of healthier behaviors (Smith et al., 2017). Over one year, researchers followed 180 prehypertensive/hypertensive and overweight/obese Black women as they followed up with their primary care providers to assess if discussing health promoting behaviors and their perceived health status was changed by the frequency of visits. After one year, researchers assessed the number of self-reported provider visits and how it positively affected their engagement in health promoting behaviors (healthy eating and physical activity). Despite the smaller sample size and the study was the first of its kind to be conducted, results indicated a relationship exists between care with a consistent provider in the primary care setting has encouraging outcomes in overall one's health status and self-efficacy.

Janet Shim, a medical sociologist, developed the concept of "cultural health capital" referring to the "health care encounter as a transaction between patient and provider and theorizes one's ability to reproduce certain cultural actions is central the patient-provider interaction" (Sacks, 2018, pg. 60). Statistically, Black Middle-class women have incurred many disparities affecting their overall health due to unconscious or unintentional biases at the hands of their own healthcare providers, leading to the "formation and collection of cultural skills, attitudes, behaviors, and interaction styles that are valued, leveraged, and exchanged by both patients and providers during clinical interactions" (Sacks, 2018, pg. 60; Shim, 2010).

Advocating for oneself and health is central to cultivating wellness that requires taking necessary

steps of creating healthy lifestyle habits and routines and interacting with consciously aware healthcare providers to the specific needs of Black women.

Changing the Language of Obesity

Black women often expressed their negative views of BMI and its use in determining whether an individual is considered overweight or obese often throughout literature. BMI was viewed as a “parochial tool for White Americans and thin individuals to prescribe other’s body sizes and promote thin bodies as healthy” (Cameron et al., 2018, pg. 1247). Traditionally, Black culture has rejected the thin ideal of mainstream society and accepted heavier frames and curves (Cameron et al., 2018). Part of the acceptance of a heavier frame has thought to contributed to the higher percentage of obesity within Black women and the lack of reverence to health status, as one participant stated within the study that the narrative in the Black community should focus more on health than aesthetics (Cameron et al., 2018). Apart from direct thoughts and feelings from the Black community; studies and data obtained from the 2004 NHANES study shows that BMI alone is of limited value and a poor proxy for overall health (Dodgen & Spence-Almaguer, 2017). Additionally, women within this population often expressed a desire for a more comprehensive tool than BMI; a tool that investigates and considers cultural norms and traditions, personal and family history, and behavioral habits that contribute to the diagnosis of overweight and obesity.

Overall, the language of obesity has more negative connotations than positive ones and as a way to adapt Black woman have modified and cultivated acceptance of their natural body frames. This cultivation has led to the creation and use of colloquial terms like “thick,” “big, beautiful women; BBW” or “brickhouse” to describe Black women carrying curvier frames as attractive, furthermore, rejecting the notion that a high BMI alone is an indicator of morbidity

and mortality (Dodgen & Spence-Almaguer, 2017; Lopez et al., 2014). Literature highlights those studies rejected the idea of a “normal weight,” and accepted that fitness over fatness is a better indicator of overall health, furthermore, stating that BMI is archaic and should include measures for women of all nationalities and cultures (Cameron et al., 2018; Dodgen & Spence-Almaguer, 2017). Societal terms used to describe obese and overweight individuals are viewed as polarizing and one dimensional. This one-dimensional view places an undue burden on the Black woman herself, their families, and society. However, this weighty burden cannot be lightened without an interdisciplinary approach.

Conceptual and Theoretical Framework

The intention of this quality improvement project was to assess the usefulness of a healthcare provider integrating the Teach-back method into counseling and education provided to Black women on decreasing individual barriers to obesity prevention and increasing their knowledge of the benefits of healthier habits. The theoretical framework used for Project B.L.A.C.K., the Health Promotion Model (HPM), focuses on how the advanced practice registered nurse (APRN) uses their assessment skills to understand how the multiple dimensions of an individual’s environment affects their pursuit of health.

Choosing this particular theoretical framework for Project B.L.A.C.K. was important because it gave the participants the opportunity to discuss their individualized and structural barriers that presumably lead to their overweight and obesity status. The educational sessions and Teach-back intervention provided by the APRN served as an opportunity to assess the participant’s current knowledge on how their barriers and habits contributed to obesity, the diagnoses of chronic diseases, and if the Teach-back intervention affected the quality of education delivered and retained. The goal was to increase the knowledge on risks associated

with obesity and decrease self-destructive habits that potentially impacted the quality and quantity of their lives. Assessing the Black woman's environment, culture, social support, and beliefs will assist her in identifying unhealthy habits or attitudes that are necessary to embracing health promoting behaviors and creating a positive state of well-being.

The Health Promotion Model (HPM)

Dr. Nola Pender, a nursing theorist, initially constructed the HPM in 1982 and later revised it in 1996 (Pender, 2011). The HPM is a grand nursing theory that defines health different from the normal definition; she believed that health was not merely the absence of disease but an “evolving life experience that involves the actualization of inherence and acquired human potential through goal-directed behavior, competent self-care, and satisfying relationships with others” (Pender, 2011). Within this combined patient care model and nursing framework, Pender intended for nurses to understand that there can be relationships between patient experiences and behaviors that have an effect on health promotion and habits. Nurses are able to provide personalized health promotion education and counseling when a patient's behavior is understood. This understanding of personalized behaviors and habits leads to improved health outcomes for the patient and family (Schub & Cabrera, 2018).

The HPM is rooted in three behavioral theories: The Theory of Reasoned Action, The Theory of Planned Behavior, and Bandura's Social-Cognitive theory. Combining these theories for the HPM specifically show how tailored nursing care towards human behavior experienced by patients with health issues can improve health outcomes (Schub & Cabrera, 2018). The theory was further narrowed by behaviors experienced by patients and three key areas were identified. Individual characteristics and experiences, behavior-specific cognitions and affects, and behavioral outcomes were the three key areas identified that influence choices and habits (Chinn,

2018). Breaking down the three key areas further, Pender organized six modifiable behaviors (*Figure 1*) that influence outcomes: perceived benefits of action, perceived benefits to action, perceived self-efficacy, activity-related affect, interpersonal influences, and situation influences (Miller, 2011; Schub & Cabrera, 2018).

APRNs are being utilized at higher rates in primary care due to the lack of physicians going into family practice, the lower cost of reimbursement from Medicare and Medicaid, and higher patient satisfaction as evidenced by a study done in 2016 (Barnes et al., 2018). Nurse practitioners have been heavily relied on in nonrural and rural settings, this increase was seen between 2008-2016 with 25.2% in rural and 23.0% in nonrural places compared to 17.6% to 15.9% respectively (Barnes et al., 2018). As the APRN becomes a greater change agent in patient care, especially within the primary care sector it is important that nursing theories are utilized more frequently for health promotion and chronic disease prevention.

The HPM was utilized within this population gauging the likelihood of engaging in healthier habits and reduction in their barriers contributing to obesity. Participants were recruited and asked to engage with a Black healthcare professional who educated them on specific barriers that influenced health behaviors. Providing tailored education, assessing thoughts, and using the Teach-back method has the potential to increase their pursuit of a better well-being and healthier habits.

Figure 1

Nola Pender Health Promotion Model: 3 Key Focus Areas¹

Individual Characteristics and Experiences	Behavior-Specific Cognitions and Affect	Behavioral Outcomes
<ul style="list-style-type: none"> ▪ Prior related behavior ▪ Personal factors: biological, psychological, sociocultural 	<ul style="list-style-type: none"> ▪ Perceived benefits of actions ▪ Perceived barriers to actions ▪ Perceived self-efficacy ▪ Activity-related affect ▪ Interpersonal influences: (family, peers, providers); norms, support, models ▪ Situational influences: options, demand characteristics, aesthetics 	<ul style="list-style-type: none"> ▪ Immediate competing demands (low control) and preferences (high control) ▪ Commitment to a plan of action ▪ Health promoting behavior

¹Note. From “Nola Pender Health Promotion Model,” by Susan Miller, 2011

(<https://nolapender.weebly.com/background.html>). Copyright 2011 by Miller.

Project Design

Dr. Pender laid the groundwork and formula for tailoring assessments, care and perception of health promotion, behaviors, and wellness to creating a better well-being for the individual. The HPM was utilized for the delivery of this DNP project to explore methods that lead to the improved quality of care within overweight/obese Black women by assessing their barriers and how healthcare providers can decrease the knowledge gap. The Health Resources and Services Administration (HRSA) defines quality improvement as “a systematic and continuous process that leads to measurable improvement in healthcare services and the healthcare statues of targeted groups” (Moran et al., 2020). Quality improvement measures are employed within healthcare organizations, systems, and private offices in efforts to improve care delivery to patients, furthermore, achieving the goals of the triple aim (Taylor et al., 2014). The triple aim of improving the health of the population is focused on enhancing the patient

experience and outcomes, reducing the cost of care per capita, and improving provider experience (Taylor, et al., 2020).

Over a four-week period, participants interacted with each other online within a focus group to increase their knowledge and discuss their identified barriers to health promoting behaviors and attitudes. The use of focus groups, community based participatory research (CBPR), and social support have been successful at addressing public health issues within minority groups, especially those within the Black community (Dodgen & Spence-Almaguer, 2017). CPBR, like the art of nursing, focuses on the individual from a holistic perspective with the intention on improving the delivery of care and well-being of those who face health disparities (Dodgen & Spence-Almaguer, 2017). Quality improvement encompasses the entirety of care within every setting. For care to be successful, the patient must be the center and therefore, the recruitment of participants from a community-based setting like a church can directly affect and change the upstream causes of obesity within this population.

Methodology

A mixed-methods design was used for this quality improvement project to assess the barriers and habits of overweight and obese Black women by using surveys, pre and posttests, and focus groups. Convenience and snowball sampling methods were used for the recruitment of participants in the form of flyers, the church's website, social media pages, email, and word of mouth. Aims behind the population of choice, sample size, setting, and resources are discussed in detail, in addition to how the project was carried out.

Population

Black women diagnosed as overweight or obese, between the ages of 18-45 years old were the target population for this project secondary to the multiple factors discussed in the background and significance of obesity within this population. The target age range of 18 to 45 years was chosen because statistics show the greatest chance of chronic disease prevention occurs for Black men and women during this period (CDC, 2017). Statistically, Black women and men are at higher risk of developing HTN, T2DM, cancers, and heart disease by the age of 45 (CDC, 2017 & 2020). Women that expressed interest in losing weight for their health were told by a healthcare provider they were overweight or obese or had been diagnosed with a chronic disease secondary to their weight were solicited for this DNP project.

Women were recruited using social media, word of mouth, flyers, email, and the church's website. Once recruited, potential participants had to meet the following inclusion criteria: identifying as a Black/African American woman, English-speaking, 18-45 years of age prior to the beginning of the intervention, not pregnant or planning on becoming pregnant during the four-week project, available one-hour weekly for four consecutive weeks, and had reliable internet access from an electronic device. Exclusion criteria included women not identifying as Black/African American, outside of the stated age range, those who could not consent for themselves, diagnosed with eating disorders including but not limited to anorexia nervosa and bulimia; and women diagnosed with chronic diseases that directly affected what and how they can intake food and liquids such as congestive heart failure (CHF), end stage renal disease (ESRD) on dialysis, and type I diabetes (T1DM).

Women interested in participating in the project were provided a link to a participant survey in Qualtrics™, an online survey tool used for collecting demographic information and

surveys throughout the intervention. The survey obtained a brief medical history allowing the student investigator (SI) to determine eligibility of each participant from three different questions (numbers one, three and eleven): Do you identify as a Black woman? Are you currently pregnant or intend to become pregnant in the next 6 weeks? Do you have any of the following health conditions (T1DM, CHF, ESRD on dialysis, or anorexia nervosa/bulimia)? The SI manually calculated participant's BMI from the weight and height provided on the participant survey for data purposes only; this information was not used throughout the sessions.

Sample Size

Throughout the literature there was a litany of sample sizes ranging from eleven to 600 Black women. Sample sizes differed for the methods of recruitment, length of study, and type of recruitment sites used. For quality and statistically significant results, a robust sample size is imperative to better understand the relationship between individual barriers and health habits that contribute to obesity and the motivation to change those habits after personalized education is received from a healthcare provider. Due to the social distancing restrictions enforced by Georgia State University's Institutional Review Board (IRB) secondary to COVID-19, the initial sample size of 100 was not feasible due to the limitation on recruitment methods. The target sample size was reduced to 50 Black women that attend or attended the church and met inclusion criteria.

Setting

Atlanta has a population of approximately 524,067 people and is the largest city in Georgia, currently growing at an annual rate of 1.67% (World Population Review, 2021). Blacks make up 50.95% of Atlanta's population, accounting for the second largest Black majority metro area in the country (World Population Review, 2021). With a population of half a million

people, 32.6% of them identify as Black and 51.5% of the Black population are female (World Population Review, 2021).

Statistically, the United Methodist Church is not ethnically diverse, but within the metro Atlanta area there is a higher percentage of Black women identifying as Methodist. In a sample of 166 women, 57% of Black women in the metro Atlanta area consider themselves Evangelical Protestants and 14% of them are between the ages of 18-49 (Pews Research Center, 2020). Evangelical Protestants are Christians that worship under the Methodist, Baptist, Holiness, Presbyterian, and Pentecostal denominations (Melton, 2021).

Participants were recruited from a predominantly Black church in Atlanta using online methods. The church is located approximately six miles south of downtown Atlanta and is associated with the Methodist denomination and specifically connected to the United Methodist Church.

On a weekly basis, this church services 5,000-8,000 parishioners in an online format. The majority of these parishioners live in Atlanta and over half of them identify as Black women within the targeted age range. On numerous occasions, literature has highlighted the importance of the Black church and its heavy influence on Black culture (Bauer et al., 2017). Within the Black community, churches and organized religion hold a powerful influence and can positively impact physical beliefs and practices (Bauer et al., 2017). Additionally, national studies reported that more than 80% of Black women considered themselves religious and about 60% reported going to church on a weekly basis (Bauer et al., 2017). Accounting for religion and church services being at the center of Black culture, initiating health initiatives within the Black church can have positive results and influence healthier habits to decrease health disparities and improve health equity for Black women.

Resources

This project was carried out utilizing the following resources: Qualtrics™, Zoom™, two flash drives for data storage and the master code sheet, printing, binding machine, presentation covers, Target™ gift cards, file box, and a biostatistician. Prior to project implementation, a budget of \$500 was set to carry out the project to its entirety. Project B.L.A.C.K. was carried out within the budget, a detailed-itemized list of project resources is located in *Appendix A*.

Participants were the greatest resource needed, they were acquired and interacted with using online methods only.

Implementation/Evaluation

Recruitment started after IRB approval was obtained from Georgia State University during the second week of October 2020. Recruitment was carried out for two and a half weeks and completed on November 6, 2020. Intervention classes started early November and took place weekly over four weeks. Classes concluded on November 29, 2020, and data gathering continued from post intervention surveys, intervention classes, and participant interactions for data gathering and cleaning.

Instrument/Tools

Two data collection instruments were used to gather and disseminate findings from Project B.L.A.C.K.; a demographic survey and The Readiness to Change Questionnaire (RCQ). Both surveys were completed in Qualtrics™ through a link sent to the participant's email address. The demographic survey assessed each participant's age, height, weight, any diagnosed medical conditions, insurance status, highest level of education obtained, occupation, annual income, pregnancy status; questions regarding how they feel about their weight, current weight in relation to their overall health, have they ever been advised to lose weight by a healthcare

provider, identified barriers, and their willingness to participate in the project. This survey took the participants approximately ten minutes to complete.

Once participants read the informed consent and completed the survey, participants were given a unique identification number and password to complete the pre-RCQ. This questionnaire was distributed pre and post intervention in Qualtrics™ and took participants approximately three minutes to complete. The original version of the questionnaire is a 12-item tool that assesses an individual's motivation and readiness to change lifestyle behaviors in order to improve overall health, quality of life, and well-being (Ceccanni et al., 2015). However, for the purposes of this project, the tool (*Appendix B*) was adapted to 14 questions: 12 questions were kept in the original format, however, the wording was changed to address their current eating habits and their effects on their state of health. The 12 questions are answered using a Likert scale with an individual's score ranging from -8 to 8. The two additional questions assessed current exercise practices and were written in an open-ended format, these were not scored and only used for data reporting. The RCQ was scored by hand using the "Quick Method," the calculating of scores is further detailed in *Appendix C*. An individual's stage is determined by the highest score obtained and places them in one of the three stages: Precontemplation, Contemplation, or Action (Heather et al., 1999). If the participant's score tied between stages, the more advanced stage was assigned (Forsberg et al., 2004). The original scoring manual does not account for Preparation, the stage that lands between Contemplation and Action in which the individual intends to take steps to change within the next month (Heather & Rollnick, 1993). The Preparation stage is included on later models of the RCQ, however limited data on its reliability and validity were found in the literature so this stage was not assigned to any participant from the pre or post RCQ. Maintenance is the fifth and last stage in the TTM, this stage is difficult to

assess via questionnaire as the individual has reached their goals and acquired the skills necessary, this stage is more about preventing relapse and management (Heather & Rollnick, 1993). Assessing an individual's readiness to change is an integral part in identifying habits or barriers that contributes to the diagnosis of obesity and related chronic diseases. The RCQ has been researched and widely used in alcoholics, individuals who smoke cigarettes, and those addicted to illicit drugs to gauge their recognition of these habits. Their stage of change (SOC) is measured and used to formulate plans and education to decrease and eventually eradicate the negative habit (Heather & Rollnick, 1993). The questionnaire models its assessment from the Transtheoretical Model of Change (TTM) and self-efficacy.

The intervention tool used for this DNP project has been used in many settings and countries for the assessment of different health behaviors (Heather & Rollnick, 1993). The reliability and validity of the RCQ has been verified by test-retest, internal consistency, criterion, and construct tests (Heather et al., 1999). Cronbach's alpha coefficient was calculated for each of the four-item scales representing the three stages of change in determining the internal consistency of the RTC within the RTC User Manual (Heather & Rollnick, 1993). Results for each stage are as follows: Precontemplation= 0.73; Contemplation= 0.80; and Action= 0.85 (Heather & Rollnick, 1993). Test-retest reliability was established in a study assessing excessive drinkers on hospital wards, by calculating correlations between two occasions of administration of the questionnaire one or two days apart: Precontemplation= 0.84; Contemplation= 0.86; Action= 0.78 (Heather & Rollnick, 1993). In addition to the RCQ, the APRN used the Teach-back method as an additional intervention for the evaluation of the retention of knowledge on health education and promotion, therefore advancing each participant to another stage of change.

Teach-back method and patient education

The Teach-back method was used at the end of each session to assess the translation and retention of the topic presented to participants. Teach-back is a technique that can be used by any healthcare provider to assess the accuracy and retention of counseling presented allowing the patient to “teach back” the education previously presented in their own words. Depending on the patient’s response, this technique allows the healthcare professional to verify understanding, correct inaccurate information, or reinforce the topic discussed (Klingbeil & Gibson, 2018). If the patient and/or family member does not grasp the concept being taught, it is the job of the healthcare provider to re-teach the information in terms understood by the learner and again reassess understanding (Klingbeil & Gibson, 2018). Used in various settings and patient populations, this method is a means of increasing patient and provider engagement to further improve health outcomes (Yen & Leasure, 2019). The language of Teach-back is often introduced at the literacy level of the patient in efforts to avoid the use of big words and complicated medical terms and presented in an open-ended question format allowing for increased dialogue and communication (Klingbeil & Gibson, 2018). Health literacy is defined as the degree to which individuals have the capacity to obtain, process, and understand basic health information and services available needed to make appropriate health decisions (Klingbeil & Gibson, 2018). It is estimated that eighty-seven million Americans have low health literacy (LHL) and disproportionately affects older adults, people of low income and educational level, and racial and ethnic minorities (Muvuka et al., 2020). An assessment done in 2003 by the National Assessment of Adult Literacy showed that 58% of Black individuals had basic or below basic health literacy compared to 28% of non-Hispanic Whites (Kutner et al., 2006; Muvuka et al., 2020). In addition to these alarming rates of LHL, it is estimated that a large proportion of

health care providers are unaware of these numbers meaning they will underestimate the percentage of those affected with LHL. Underestimating these numbers increases the missed opportunity to engage in patient specific communication leading further to the lack of patient understanding and retention of important health information (Muvuka et al., 2020). Applying additional health literacy principles and being cognizant of literacy levels throughout the intervention was a way for the APRN to personalize health promotion and chronic disease education provided while simultaneously assessing the response from middle-class Black women in a supervised setting.

Black women in the United States have endured past and present traumas such as racism and stereotyping that has negatively impacted their physical and emotional health. Public health specialists and social scientists continuously investigate why and how health disparities are carried out by a healthcare provider's implicit and unconscious biases. Recognizing the importance of the healthcare provider in decreasing morbidity and mortality secondary to obesity, communication understood by both parties is vital to the success of the patient-provider relationship. One domain of cultural health capital described by Shim is that Black women possess the "skill to communicate health-related information in a medically intelligible and efficient manner" in an effort to decrease minimize stereotyping and biases (Sacks, 2018, pg.65; Shim, 2010, pg. 3). Utilizing the Teach-back method with every encounter not only increases health outcomes for the patient but breaks down barriers and fosters a healthier and open relationship.

Data Collection

Prior to the initiation of the project's intervention, a pre-survey was disseminated via Google Forms™ to the target population for the assessment of common individual barriers.

Information from this survey was collected to ensure the topics discussed during the Teach-back sessions were in line and relevant to what Black women presently deem as barriers and used for the further application to clinical practice. Data collected from this survey was not used in the final analysis and utilized for informational purposes for the formulation of the four intervention sessions. The survey in Google Forms™ was closed and destroyed once IRB approval was obtained; the women surveyed were not asked to complete an informed consent as their responses would not be used for final data analysis and presentation.

Once recruitment began, participants interested in partaking were emailed a link to the informed consent and the participant survey in Qualtrics™. After completion of each survey, the SI ensured all interested participants qualified for the project by reviewing three qualifying questions that asked their age, pregnancy status, and diagnosed chronic diseases that met exclusion criteria. The data collected from participants was unidentified and identification numbers (ID) were assigned to eligible participants for use throughout the intervention. Participants were then emailed their ID numbers and a second link for the pre-RCQ in Qualtrics™. The 12-item questionnaire assessed their SOC regarding eating habits and took approximately five minutes to complete. Participants were required to complete the pre-RCQ prior to beginning of the weekly sessions.

Intervention classes occurred weekly via Zoom™ with a 20-25-minute education session on the aforementioned barrier of the week, followed by a question-and-answer session, and closed with the 5-10-minute Teach-back session. At the conclusion of the four-week intervention, participants took the post-RCQ in Qualtrics™ and given one week to complete to receive the \$5 Target™ gift card. Results were compared to the pre-RCQ score to assess for a progression to a higher stage of change, in addition to an improvement in health habits and

attitudes towards weight loss or healthier weight for the individual. Furthermore, qualitative data from the recorded sessions was acquired evaluating if an attainment of knowledge occurred on addressing cultural factors that have previously affected their individual health and wellness. Participants who completed the entire four-week intervention and post-RCQ were awarded a \$5 Target™ gift card sent to their emails. In addition to the gift card, the women were also mailed a resource guide in booklet format to reinforce topics discussed and a list of resources utilized during the project.

At the beginning of December 2020, data was analyzed with the project team and biostatistician. The subsequent variables were measured during data collection: BMI, age range, income range, education level, presence of chronic disease, and RCQ scores. Participants pre- and post- RCQ scores were analyzed using a Paired-sample *t*-test that evaluated whether the majority of women moved through a SOC and adopted better health habits and attitudes within the four-week intervention. The potential move to a higher SOC was thought to be secondary to tailored health education and the Teach-back intervention.

Analysis

Data was collected from participant surveys and RCQ (pre and post) scores in Qualtrics™ and placed in the Statistical Program for the Social Sciences version 27 (SPSS™) and Microsoft Excel™. From there, data gathered was analyzed using descriptive statistics, Paired-sample *t*-tests, Chi-square analysis, and a One-way analysis of variance (ANOVA). The project team enlisted the help of a biostatistician who assisted with data analysis and results. Raw qualitative data was extracted from the recordings of the live sessions in Zoom™ and used in the final project analysis.

Results

A total of 35 women were initially recruited, 29 women started the four-week intervention on November 8, 2020, and 20 women (N=20) completed the entire intervention on December 6, 2020. The attrition rate for the four-week intervention was 32%, resulting in nine participants that were unable to complete the entire intervention. The final results discussed in the next two sessions consisted of data from women that completed the entire intervention.

The mean age of Project B.L.A.C.K. participants was 34.3 years. The largest age group represented was 25-30-year-olds, followed by 31-36, and 37-45; the 18-24 age group was not represented in the intervention (*Table 1*). Ninety percent of the women had health insurance to cover their health needs, while 10% relied on self-pay methods for any healthcare needs that arose. Body mass index for each participant was calculated by the SI using self-reported height and weight from the participant survey, 5% of the women were classified as having a healthy weight, 20% were overweight, and 75% were obese. The majority of Project B.L.A.C.K.'s participants met obese criteria with an average BMI of 39.66, furthermore the BMI placed the sample within a Class 3/Severe obesity category (*Table 2*).

Participants were asked to give a brief health history detailing any chronic disease diagnosis in the Participant Survey. Ten women (50%) stated they had been diagnosed with T2DM, HTN, HLD, polycystic ovarian syndrome (PCOS), or pre-diabetes and two women (20%) had two or more chronic diseases (*Table 3*). The ages of chronic disease diagnosis ranged from 14 to 37 years of age. Participants were additionally asked their thoughts and feelings on their relationship with their weight and obesity.

The majority of participants had the same feelings and experiences with weight, with 90% stating “yes” if they had ever been told by a healthcare provider, they were overweight or

obese and needed to lose weight for their health. On whether the participant felt they were overweight or obese, 80% answered “yes,” and 90% stated “yes” they needed to lose weight to improve their overall health.

Occupations varied for the participants of Project B.L.A.C.K. and comprised of medical professionals (including nurses, nurse practitioners, speech-language pathologist, and a licensed mental health therapist), engineers, project manager, and a finance manager. One hundred percent of the women had at least a high school diploma/GED equivalent or higher; however, majority of the women (60%) had obtained at least a graduate degree, followed by 35% holding a bachelors/associates degree (*Table 4*). The annual income of participants ranged from \$50,000 to over \$100,000 with 30% earning over \$100,000 a year (*Table 5*).

The SI hypothesized that participants would move through a stage of change, adopt better health habits and attitudes towards weight loss to combat chronic diseases after the four-week intervention. To evaluate if the intervention was effective, a paired-sample t-test was conducted between the pre-and post-RCQ scores (*Table 6*). Analysis concluded there was no statistically significant change found between the stages of change in relation to the participant’s eating habits, however, question 13 of the questionnaire reflected an upward trend of significance with a $p= 0.056$. This question targeted the stage of Precontemplation and questioned participants on their agreement or disagreement of the following statement: “Eating more healthy foods/controlling my portion sizes would be pointless for me?” Before the weekly intervention, the SOC distributions are as follows (*Table 7*): Precontemplation (N=0), Contemplation (N=21), and Action (N=8). After the intervention, the distributions were as follows: Precontemplation (N=0), Contemplation (N=11), and Action (N=9). Three participants (15%) did advance through a SOC, moving from Contemplation into Action stage during the four-week intervention. Since

the questionnaire could not assess more than one habit contributing to obesity, participants were asked about their current engagement in physical activity on a weekly basis. Prior to the intervention, 75% of the participants stated they engaged in physical activity at least once during the week and 25 % stated they did not currently engage in physical activity weekly. There was no change post-intervention as 75% of participants engaged in some sort of physical activity during the week and 25% did not currently engage in physical activity. Reasons cited for not engaging in physical activity were “lack of motivation,” “poor time management,” “I left the gym due to COVID and haven’t found anything I like yet,” and “I am a mom and lack support right now.”

Statistically the risk of chronic disease diagnoses increases with age secondary to modifiable and nonmodifiable risk factors, the SI hypothesized there was a higher probability of the older participants having more diagnosed chronic diseases compared to the younger participants. A Chi-square analysis was utilized and found there was no significant differences between the age groups in diagnosed chronic diseases (*Table 8*). An ANOVA analysis was used to examine if there were any associations between education level and BMI as literature constantly cites a lower education level is associated with obesity; however, the SI hypothesized this would not be the case with the sample size. Analysis revealed there was no statistically significant differences in BMI when compared across education levels or income levels (*Table 9*).

A correlational analysis was used to examine if any there was an association between a high BMI and a chronic disease diagnosis. There were no statistically significant associations were found between BMI, education, and income level (*Table 10*). Disease diagnosis was dichotomized (Group 1: Chronic Disease Diagnosis, Group 2: No Chronic Disease Diagnosis)

and an independent sample t-test was employed to examine differences in BMI among the two groups (*Table 11 and Table 12*). Calculations revealed there were no significant diagnosis between the groups, most likely secondary to identical BMI scores.

Lastly, a correlational analysis was used to examine associations between BMI, education, and income (*Table 13*). There was a positive association found with BMI, education, and income ($r = 0.463, p < 0.5$) indicating that as Black women increase their education, their income will naturally increase, however, BMI follows the same upward trajectory. Overall, the results from the intervention were not statistically significant, yet the qualitative data from the educational sessions showed positive changes within the participants.

Discussion

This project had four specific aims: to identify individual barriers that produce high rates of obesity by BMI standards in Black women, understand from Black women why obesity may not be viewed as a health issue and if the connection to chronic diseases is understood, how healthcare providers have assisted or hindered lifestyle or behavioral habits, and the effectiveness of the Teach-back method and personalized education with participants on incorporating healthier and feasible practices. Statistical analysis showed no significant changes between the SOC pre-and post-intervention; however, the positive impact of time spent on needed communication and dialogue regarding individual and common barriers was emphasized by the participants as foreign topics were made clear and enabled participants to walk away with tools that increased their overall health. In addition to personalized education and the reassurance it provided in that information was properly received secondary to increased engagement with the Teach-back method, elements of CBPR were supplemented due to the high occurrence of health disparities within Black women and the Black community.

Project B.L.A.C.K. is one of the first nursing led interventions that merged the elements of CBPR, Teach-back, and assessing health promoting behaviors and attitudes that contributed to obesity and chronic disease prevention within Black women. The literature review revealed that previous nurse-led interventions focusing on obesity prevention have been carried out predominantly within children and adolescents. Throughout the weekly intervention sessions, there were positive changes in the women in their reception of information. Participants stated they were engaged in ways they had never been before and stressed the lack of choices given to them in the past on how health information and education was presented. Majority of participants gravitated towards small lifestyle changes, health promoting behaviors that could easily fit into their daily lives, information presented in a manner that made sense to them, and that their concerns were echoed and appreciated by a healthcare provider.

Literature emphasized the need for further research in the form of experimental or randomized controlled trials utilizing Black women as the control groups to gain better understandings on the cause and effect of obesity. Strong and valid evidence is presented throughout literature recommending improvement in practice standards and objectives, enhanced healthcare provider education and oversight, and further investigation on how to assess and provide services to Black women struggling with overweight and obesity. The manner in which health promoting behaviors and chronic disease prevention has been traditionally presented does not always consider an individual's health literacy status. Participants in the project demonstrated that regardless of how much education or income is obtained, it is a necessity for healthcare providers to set aside extra time to ensure an understanding of how health behaviors and promotion can be integrated into one's routine and how personal habits affect their overall health and wellness. Project B.L.A.C.K. confirmed that the presence of stress is a key factor in

the high incidences of obesity, the presence and practices of a healthcare provider matter, Black women are severely underrepresented in obesity research, and that the use of Teach-back is vital for health promotion and addressing individual barriers for obesity prevention. In spite of a large amount of data that echoed the literature's findings, qualitative data did illustrate some conflicting thoughts and sentiments on the needing to change the language of obesity and the concept of high body image and perception within Black women.

Stress plays a large role within the Black community, explicitly affecting Black women. Cited in the review of literature Black women state there are multiple sources of stress and their coping mechanisms run the gamut (Curry, 2019; Diggins et al., 2015; Dodgen & Spence-Almaguer, 2017; Lopez et al., 2014). Black women with middle level incomes reported that major life stressors, including work and family responsibilities, financial and educational pursuits make it difficult to engage in physical activity and food preparation within the home (Walker & Gordon, 2014). During the intervention, participants stated multiple times that stress prevented them from getting physical activity, contributed to disordered eating and unhealthy eating habits such as gravitating towards alcohol and consuming foods high in fat, sugar, and salt. The women also stated that the stress of cultural traditions add an additional component of stress that have created handicaps preventing them from asking for help, forming relationships with potential accountability partners, or from following regularly with a healthcare provider. Perceived stress was expressed by participants as fear and practicing avoidance. Fear was secondary to potentially hearing bad news in the form of a new diagnosis which prevented the individual from going to certain healthcare providers or utilizing their insurance to its fullest extent. Visiting a healthcare provider and imaging the dialogue that will occur underscores the frequently cited issue of mistrust and fear held of doctors and other healthcare providers in the

Black community (Banerjee et al., 2018; Knox-Kazimierczuk & Shockly-Smith, 2017; Wells & Gowda, 2020).

Healthcare providers, particularly the APRN, hold the service capacity to influence an individual's health and well-being. Specifically, the relationship between a Black woman, their healthcare provider and their actions can have lasting effects on their physical and mental health. Recognizing the risk and habits leading to obesity or associated chronic diseases does lie on the individual, however, the healthcare provider has the knowledge, training, and tools equipped to assist with delineating or decreasing risks and should be effectively communicated to that patient. Providing education to Black women on specific disease processes, the risks and harmful outcomes associated is desired and warranted within Black women and the Black community as a whole to begin tackling the problem. An assumption by the healthcare provider should not be made that a lay person has medium to high health literacy and presenting pertinent health information in this manner is to the detriment of society as a whole. It is because of these common mistakes and lack of literacy screening completed by the provider that participants verbalized an affinity for healthcare providers that look like them. This preference was voiced because the participants in Project B.L.A.C.K. and women mentioned in the review of literature yearn for providers that inherently understand Black culture and traditions, and ultimately make them feel "seen and understood" without having to explain practices and habits synonymous to their culture.

After navigating through the dating process and formulating a relationship with a healthcare provider, women throughout the literature and Project B.L.A.C.K. stated there was a lack or even an absence of provider counseling and communication on weight status, the gravity of excess weight on future health status, how habits engrained in Black culture contribute, and

the implications of their weight further contributing to their lack of awareness (Lopez et al., 2014). Black women desire healthcare providers to transition from a hands-off approach to an interactive and conversational technique that accommodates the development of rapport and comfort of exploring this sensitive topic (Lopez et al., 2014). Implementing this hands-off approach, however, does not mean the healthcare provider themselves has to bear the entire responsibility of education, coaching, and accountability. Collaborating with members of the interdisciplinary team in the form of referrals to a nutritionist, health coach, counselor, or personal trainer can provide additional avenues for learning, integration of healthier behaviors, and increase the chances of healthier choices. Providers can additionally encourage women to maximize their health insurance benefits by engaging in meetings with health coaches that specialize in assisting patients on lifestyle modifications, accountability, and supplying individuals with tools to prevent chronic diseases associated with obesity.

Evidenced by the qualitative findings over the four-week intervention, participants desired different and customized approaches to patient care. These approaches focused on patient-centered care, engaging dialogue, reassurance, and a development of trust. Project B.L.A.C.K.'s participants were not alone in their desires for new patient care practices. The theory of intersectionality was cited often in literature where the primary focus is Black women. Intersectionality theory explains the challenges faced within a societal context of the unique intersection of the simultaneous experience of racism and sexism (Watson et al., 2019). Applying the theory of intersectionality from the healthcare provider's lens considers the unique experiences of the Black woman and how her engagement in physical activity, diet, and day to day interactions create multiple avenues to obesity. Applying these practices with every patient encounter does require a new vision allowing engagement within the Black community by using

community-based partnerships, custom tailoring, and integrating technology (Versey, 2014). APRNs are in the ideal position to explore methods for teaching health promoting behaviors, chronic disease risk assessment, and prevention with Black women struggling with excess weight. The art and science of nursing molds the nurse to be a patient advocate while empowering them to achieve their optimal state of health and well-being. While this may not be the absence of disease, the nurse equips the patient and their families with tools to mitigate health risks. One of these techniques is the Teach-back method which continues to show positive results in improving health outcomes, compliance, and communication. Opening provider's minds and thoughts to the consistent implementation of Teach-back in a population that statistically has the highest levels of obesity and additionally has experienced the second largest educational attainment of all races or sexes in the United States could potentially break down barriers and gain a better understanding of how to effectively provide health services to Black women (DuMonthier et al., 2017).

Health information was presented in an engaging manner that encouraged dialogue within a group setting amongst women of the same socioeconomic status and sharing the same struggles. In efforts to drill the information home and ensure its retention, Teach-back was applied to assess understanding and communication/teaching strategy. By reaffirming their understanding and comprehension, foreign topics were made plain, and participants were able to leave each session with a better understanding of how their individual habits, thoughts, and attitudes have affected their physical and mental health. As mentioned before, Black women have been the group making huge social, educational, and economic strides in the past decade. With these accomplishments come many responsibilities and secondary issues that can lead to complications to existing health issues or the diagnosing of new health disorders. This project

intended to shed light on the negative outcomes associated with obesity and upon its completion echoed findings that regardless of how much education or income is obtained, Black women require additional attention and personalization, such as the teach-back method, to assess and intervene on the complexity of factors that lead to obesity and chronic diseases.

Despite the prevalence rates of obesity in American adults and specifically Black women, the CDC points to the absence of differences in the prevalence rates of obesity among the incomes in non-Hispanic Black women (CDC, 2021). Overall, the sample of Project B.L.A.C.K. earned higher degrees and annually obtained more than what has been traditionally studied in weight-loss interventions with Black women. These facts underscore that Black women in Georgia statistically have higher incomes compared to their peers in the rest of the country. Conducting research and interventions in Georgia can lead to generalizable results for the Black community as it is home to the second highest Black population in the country preceded only by Texas (World Population Review, 2021). Statistically the Black population is clustered in the South leading one to believe there are common ingrained cultural practices, stressors, and beliefs shared within overweight and obese Black women (World Population Review, 2021). A deep-rooted mistrust of the healthcare system and medical providers has traditionally been held by the Black community as a whole (Wells & Gowda, 2020). Historical traumas such as the Tuskegee Syphilis experiment, the nonconsenting and misuse of DNA from Henrietta Lacks, the performance of unnecessary and uninformed gynecological procedures performed by White physicians leading to the sterilization of Black women, and implicit biases affecting the treatment of Black individuals are a few examples cited for the continued mistrust in the healthcare system (Strings, 2015 & 2019; Watson et al., 2019; Wells & Gowda, 2020). These inhumane and demoralizing instances have contributed to Blacks not wanting to participate in

research studies as they do not want to be treated as “guinea pigs” or harmed intentionally (Wells & Gowuda, 2020). Lastly, the recruiting of Black women for studies from places such as the predominantly Black church, community settings, and doctors’ offices have limitations. The Black church has been cited as the “core” of the Black community but recruiting women from only the church neglects women who may not identify with organized religion, do not have a church home, or regularly attend. The same applies to women without a healthcare provider, or those who do not see one regularly, or those who are underinsured or uninsured. Black women continue to be burdened with issues secondary to the lack of representation in research that leave the door wide open for research findings from Project B.L.A.C.K. The recreation of this intervention using a larger sample size, extending the intervention time frame, and involving healthcare providers and community leaders provide additional opportunities to understanding the connections between Black women and obesity.

The greatest take away from these qualitative findings is that participants and women in the literature yearned for increased individualized health promotion to address their personal issues leading to improvement in health outcomes. Assessing the health literacy and communication techniques of an individual is imperative for the APRN to understand the communication qualities and strategies involved in the care between Black women and healthcare professionals in order to combat obesity and their associated chronic diseases. This approach may require a change in the terminology used when referring to obesity and putting pertinent health information into more of a cultural context for it to translate appropriately for Black women.

Literature has crafted an additional narrative that Black women have higher levels of self-esteem and body image perception in spite of their health and risk of chronic diseases secondary

to obesity (Watson et al.,2019). Given the dynamic state of emotions and feelings, it would be hard to prove and generalize that Black woman have a consistent favorable state of a larger body frame. Culturally, there is less stress placed on an “ideal body image” compared to the white community potentially contributing to the Black and White thought (Watson et al., 2019). A meta-analysis in 2006 revealed a more complicated narrative and results showed that as Black women assimilated to White culture the thin ideal could result in more body image issues hinting to the role of intersectionality (Watson et al., 2019).

Unhappiness with appearance, body perception, or image was not named as a barrier from participants, nonetheless, the reasons cited for wanting to join the project and learn how to improve their health would affect individual perceptions and engaging in healthier practices would alter their body image. Women from the same socioeconomic background and culture had the same ideas around obesity and chronic diseases, and this was stated as to why the connection was not always understood however, they held a yearning to improve their weight status and future health outcomes. As the desire to be healthier was understood the women did not have a general aesthetic to achieve. Project B.L.A.C.K. participants had an overall high self-efficacy and confidence in their respective fields that contributed to a great level of self-esteem and high regard for self, this thought process potentially points to the ingrained thought processes in the Black community downplaying obesity and its negative health effects.

In summary, participants gravitated towards this intervention because they had been told by a healthcare provider, they were obese or overweight and it was or could possibly affect their overall health. Despite their diagnosis or views of excess weight, a number of the participants were not able to connect how obesity realistically contributed to the presence of HTN and T2DM. This was secondary to the absence of expert explanation and education, complicated by

the negative connotations associated with the word obesity. The term obese has an overall negative meaning, one that has taken on a societal stereotyping that an individual is lazy, gluttonous, and lacks the discipline to take care of themselves (Strings, 2015). Investing in time to educate Black women on how excess weight can have negative effects on their long-term health, while simultaneously framing education in contexts that make sense to them, and their everyday lives could shift the narrative of Black women being chronically and systemically ill. This alone will not shift the entire narrative, further research is imperative with Black women in larger numbers, tackling social and health policies, increasing access to the healthcare system for Black women on the outside, addressing social determinants of health, and creating health initiatives in marginalized communities using CBPR.

Project Limitations

The greatest project limitation experienced were restrictions secondary to the Coronavirus (COVID-19) pandemic. Project B.L.A.C.K.'s sample size was limited due to governmental and university restrictions on face-to-face interaction secondary to social distancing guidelines. This restriction limited recruitment to online methods only such as email, social media, online church services, and word of mouth. Within the limited sample size and effects of the pandemic, the 18-24-year-old age group was not represented in this project. The use of the RCQ and adapting it explicitly for the population of Black women and obesity presented its challenges as well. There were no studies found during the literature review that used the RCQ/SOC in Black women only assessing individual barriers to obesity or modifiable chronic diseases.

Results were in large part reflective of a short project timeline, low recruitment numbers, high attrition rate, and the restriction to online interaction only.

Practice Implications

Advanced practice registered nurses and other healthcare professionals are essential to assisting in the reduction of the diagnosis obesity and its associated chronic diseases within this population. Black women within this sample highlight the social and cultural change that has taken place nationwide over the past decades within this population. Attaining higher education at accelerated rates, playing active roles in social justice, and climbing the ranks as business owners, Black women have different needs, wants, and requirements for their mental and physical health from their healthcare team like never before. Within these basic needs are increased two-way communication, partnerships, accountability, and transparency. The literature additionally highlights that Black woman need providers to be culturally sensitive to their thoughts and needs (Lopez et al., 2014; Banerjee et al., 2018).

Throughout the four-week sessions it was evident by the participant's comments, questions, and dialogue with each other that they gravitated towards personalized education, the identification of cultural and societal barriers, and focus groups proctored and attended by women that look and share the same struggles as them. This may be the ideal setting for most, unfortunately it may not be practical in the day-to-day office settings. Healthcare providers, specifically the APRN can begin conversations about health promoting behaviors and attitudes towards preventing obesity and chronic disease to all Black women. Beginning with assessing personal and family histories that potentially place Black women at increased risk for obesity, additionally paying close attention to Black women with higher levels of education, those who belong to the upper and middle classes, or have high stress jobs and/or demands placed on them. Screenings and appropriate health promotion teaching should take place at every patient encounter imploring the Teach-back method and other health literacy and numeracy principles.

These encounters should allow the woman to ask questions, gain understanding of the information presented, and recognize how their habits and thoughts may need to be transformed. The provider should mirror the needs of the women with appropriate follow up intervals and referrals if merited.

The current and lasting effects of COVID-19 has healthcare providers stretched thin and may not have adequate time for the proper counseling or extensive Teach-back sessions, however, that should not deter the conversation, providing resources, or engaging in partnerships outside of the office and within the local community. Pointing Black women to readily available resources such as health coaches provided through their insurance, the opportunity to come back at a later date for further health promotion counseling when the provider may have more time, or local community groups/organizations of interest should be a standard of practice within the outpatient care setting.

Conclusion

Evidence from this project echoes that Black women benefit and appreciate group settings with likeminded women who share the same body aesthetics and culture defined thoughts on body image. Engaging groups that focus on family and friend support and community engagement have been more successful in increasing physical activity, goal setting, while providing and receiving empathetic support (Versey, 2014). Black women are not a monolith, while one may state it is understood on a surface level, systems currently in place show otherwise. Successful interventions and the eradication of an epidemic birthed almost 30 years ago, depend on an understanding and reverence that Black culture and traditions are webbed into daily interactions affecting one's thoughts, beliefs, and actions. This collective approach must involve government agencies, research institutions, community leaders, and the

Black community. Obesity prevention and the reduction of chronic diseases in this demographic ultimately decreases the economic burden, addresses modifiable risk behaviors, decreases the rates of preventable deaths, and allows a culture to thrive physically and mentally. Coupled with the COVID-19 pandemic, health disparities and disease burden within the Black community were emphasized, commonly citing obesity as a huge culprit for morbidity and mortality (CDC, 2020). Assessing and treating the health and health literacy of the Black community is pertinent to the wellbeing of the culture, this can be accomplished by effectively engaging interdisciplinary members from the community like community stakeholders, diverse healthcare professionals, and those within academia (Muvuka et al., 2020). Exploring individual barriers and educating individuals on what personally affects them opens the door for providers to tailor care, counseling, prevention, and education. Placing informed and culturally sensitive healthcare providers that focus on empowering individuals and establishing partnerships has the potential to improve the health of the Black community by changing the narrative and trajectory of poor nutrition, morbidity, and mortality.

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Appendices**Appendix A***Project B.L.A.C.K. budget*

Item	Cost
Zoom Pro Account	\$91.95
Jump Drive	\$8.00
Printing and paper	\$70.00
File box	\$10.00
Binding presentation covers	\$18.00
Binding machine	\$56.00
Biostatistician	\$120
Target gift cards (20)	\$100
Total	~\$469.95

Appendix B**Project B.L.A.C.K.****Adapted Readiness to Change Questionnaire (RCQ-A)**

The following questionnaire is designed to identify how you *personally* feel about your eating habits right now. Please read each of the questions below carefully, and then decide whether you agree or disagree with the statements. Please click on the answer choice to each question.

Your answers are completely private and confidential.

1. **“I don’t think I eat too much of the wrong things.” (P)**
 - a. Strongly disagree
 - b. Disagree
 - c. Unsure
 - d. Agree
 - e. Strongly agree
2. **“I am trying to eat healthier than I currently do” (A)**
 - a. Strongly disagree
 - b. Disagree
 - c. Unsure
 - d. Agree
 - e. Strongly agree
3. **“I enjoy eating, but sometimes I eat too much of the wrong things.” (C)**
 - a. Strongly disagree
 - b. Disagree
 - c. Unsure
 - d. Agree
 - e. Strongly agree
4. **“Sometimes I think I could cut down on my unhealthy eating.” (C)**
 - a. Strongly disagree
 - b. Disagree
 - c. Unsure
 - d. Agree
 - e. Strongly agree
5. **“It’s a waste of time thinking about my unhealthy eating habits.” (P)**
 - a. Strongly disagree
 - b. Disagree
 - c. Unsure
 - d. Agree
 - e. Strongly agree
6. **“I have just recently changed my unhealthy eating habits.” (A)**
 - a. Strongly disagree
 - b. Disagree

- c. Unsure
 - d. Agree
 - e. Strongly agree
7. **“Anyone can talk about wanting to do something about their unhealthy eating habits, but I am actually doing something about it.” (A)**
- a. Strongly disagree
 - b. Disagree
 - c. Unsure
 - d. Agree
 - e. Strongly agree
8. **“I am at the stage where I should think about incorporating healthier eating into my life.” (C)**
- a. Strongly disagree
 - b. Disagree
 - c. Unsure
 - d. Agree
 - e. Strongly agree
9. **“My unhealthy eating habits are a problem sometimes.” (C)**
- a. Strongly disagree
 - b. Disagree
 - c. Unsure
 - d. Agree
 - e. Strongly agree
10. **“There is no need for me to think about changing my unhealthy eating habits.” (P)**
- a. Strongly disagree
 - b. Disagree
 - c. Unsure
 - d. Agree
 - e. Strongly agree
11. **“I am actually changing my unhealthy eating habits now.” (A)**
- a. Strongly disagree
 - b. Disagree
 - c. Unsure
 - d. Agree
 - e. Strongly agree
12. **“Eating more healthy foods/controlling my portion sizes would be pointless for me.” (P)**
- a. Strongly disagree
 - b. Disagree
 - c. Unsure
 - d. Agree
 - e. Strongly agree
13. **Do you currently engage in any physical activity on a weekly basis?**

- a. Yes
- b. No

14. Depending on your answer to question #13, please indicate what type of physical activity you engage in and often. If not, please indicate your specific barrier to physical activity and how motivated you are to change.

- a. "Insert text"

Key:

P=Precontemplation C=Contemplation A=Action

Appendix C

Scoring the Readiness to Change Questionnaire: Quick method

**Scoring the Readiness to Change Questionnaire
Quick Method**

The Precontemplation items are numbers 1,5,10 & 12, the Contemplation items are numbers 2,6,7 & 11. All items are to be scored on a 5-point rating scale ranging from:

-2 Strongly disagree
 -1 Disagree
 0 Unsure
 +1 Agree
 +2 Strongly agree

To calculate the score for each scale, simply add the item scores for the scale in question. The range of each scale is -8 through 0 to +8. A negative scale score reflects an overall disagreement with items measuring the stage of change, whereas a positive score represents overall agreement. The highest scale score represents the Stage of Change Designation.

Note: If two scale scores are equal, then the scale farther along the continuum of change (Precontemplation - Contemplation - Action) represents the subject's Stage of Change Designation. For example, if a subject scores 6 on the Precontemplation scale, 6 on the Contemplation scale and -2 on the Action scale, then the subject is assigned to the Contemplation stage.

Note that positive scores on the Precontemplation scale signify a *lack* of readiness to change. To obtain a score for Precontemplation which represents the subject's degree of readiness to change, directly comparable to scores on the Contemplation and Action scales, simply reverse the sign of the Precontemplation score (see below).

If one of the four items on a scale is missing, the subject's score for that scale should be pro-rated (i.e. multiplied by 1.33). If two or more items are missing, the scale score cannot be calculated. In this case the Stage of Change Designation will be invalid.

Scale Scores	Readiness to Change
Precontemplation Score <input type="checkbox"/>	Precontemplation <input type="checkbox"/> (reverse score)
Contemplation Score <input type="checkbox"/>	Contemplation <input type="checkbox"/> (same score)
Action Score <input type="checkbox"/>	Action <input type="checkbox"/> (same score)
Stage of Change Designation (P,C or A) <input type="checkbox"/>	

N.B. For the Refined Method of Stage Allocation, see User's Manual (revised version).

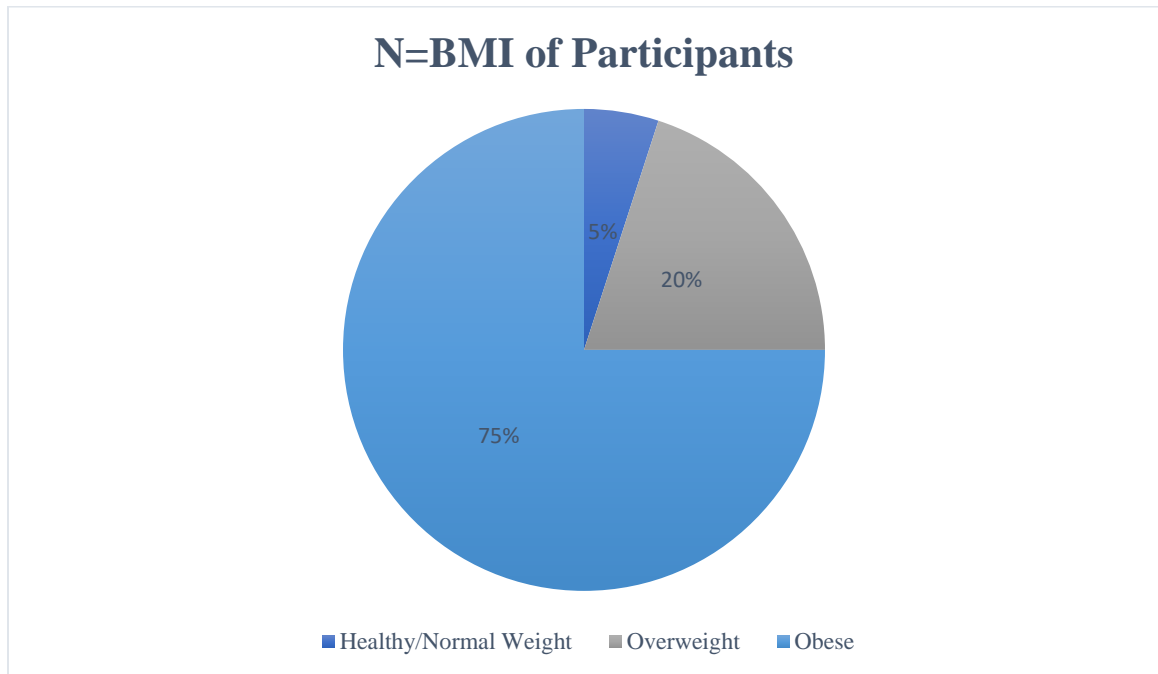
Note. This image was reproduced from "Scoring the Readiness to Change Questionnaire: Quick method," by N. Heather and S. Rollnick, *Readiness to Change Questionnaire: User's Manual (revised version)* (p. 21), 1993, National Drug and Alcohol Research Centre. Copyright 1993 by National Drug and Alcohol Research Centre.

Tables**Table 1***Age distribution of Project B.L.A.C.K. participants*

Age Group	Number of participants
18-24	0
25-30	4
31-36	13
37-45	3

Table 2

Body mass index (BMI) distribution of Project B.L.A.C.K. participants



²Average BMI of participants= 39.66*

Table 3

Chronic disease diagnosis of Project B.L.A.C.K. participants

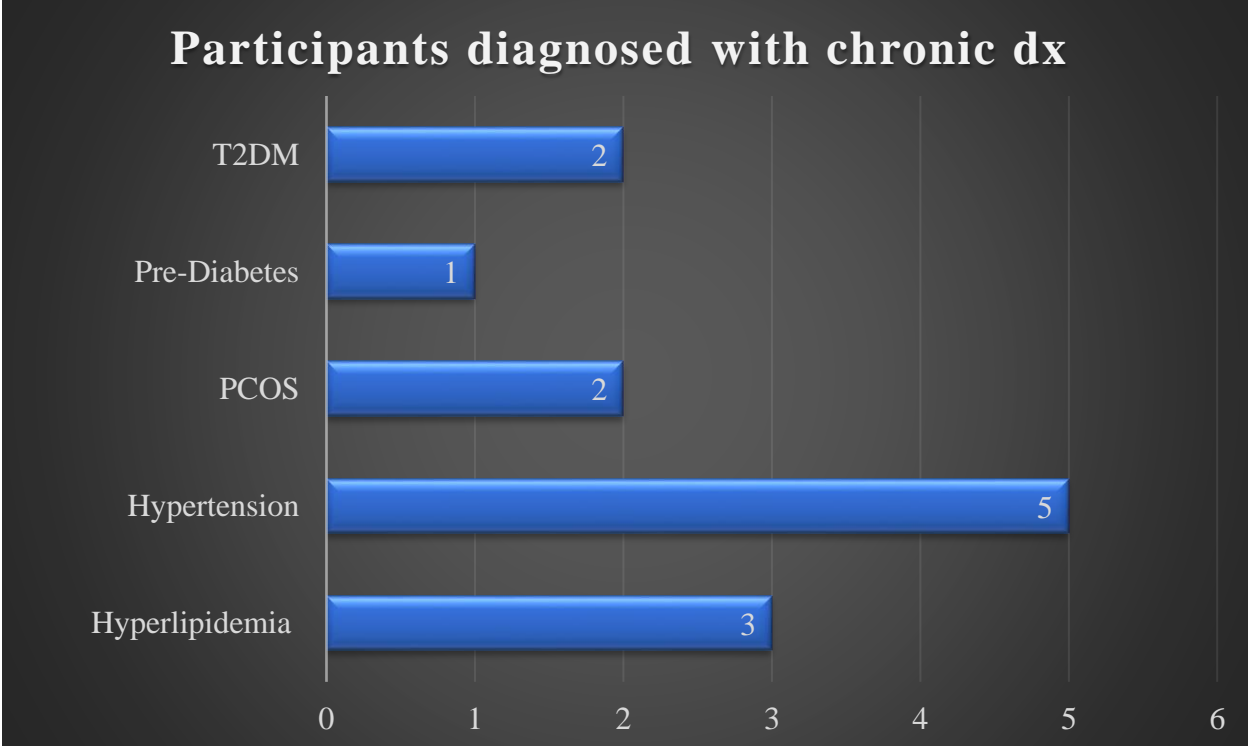


Table 4

Education levels of Project B.L.A.C.K. participants

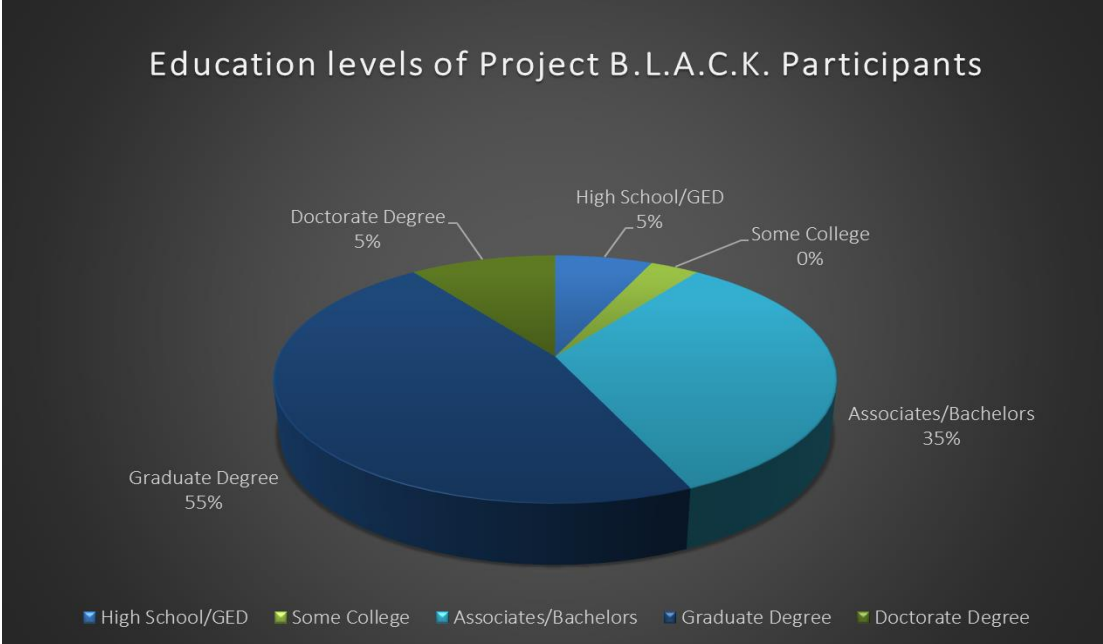


Table 5

Income distribution of Project B.L.A.C.K. participants

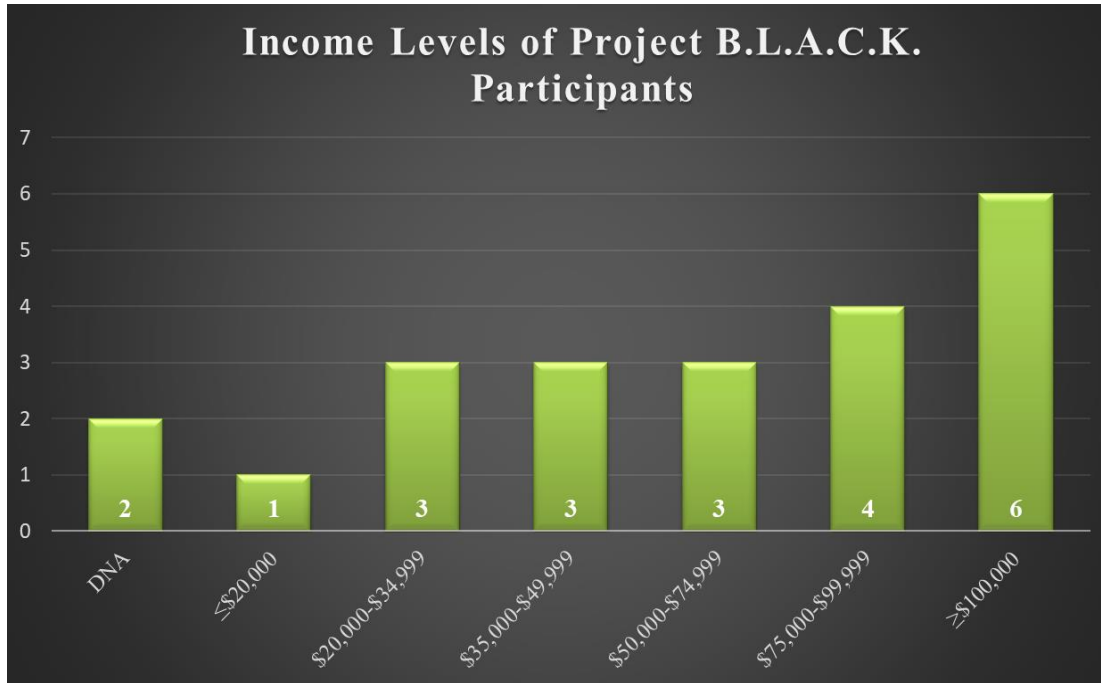


Table 6*Readiness to Change Questionnaire scores (pre-and post-intervention)*

Stage of Change	Participants scoring (pre-intervention)	Participants scoring (post-intervention)
Precontemplation	0	0
Contemplation ³	14	11
Action ⁴	6	9
Total	20	20

³ the number of participants in the Contemplation/Preparation stage decreased after the intervention.

⁴ the number of participants scoring in the Action stage increased after the intervention.

Table 7*Paired-sample t-test examining differences in pre/post RCQ scores before and after intervention*

Variables	Mean	N	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2- tailed)	
					Lower	Upper				
Pair 1	Q2Pre	3.05	20	1.276	0.285	-0.201	1.301	1.532	19	0.142
	Q2Post	2.50	20	0.946	0.212					
Pair 2	Q3Pre	4.20	20	0.894	0.200	-0.758	0.158	-1.371	19	0.186
	Q3Post	4.50	20	0.513	0.115					
Pair 3	Q4Pre	3.90	20	0.968	0.216	-0.499	0.199	-0.900	19	0.379
	Q4Post	4.05	20	0.887	0.198					
Pair 4	Q5Pre	4.20	20	0.696	0.156	-0.585	0.085	-1.561	19	0.135
	Q5Post	4.45	20	0.510	0.114					
Pair 5	Q6Pre	1.45	20	0.510	0.114	-0.624	0.424	-0.400	19	0.694
	Q6Post	1.55	20	0.945	0.211					
Pair 6	Q7Pre	3.30	20	1.174	0.263	-1.015	0.215	-1.361	19	0.189
	Q7Post	3.70	20	0.923	0.206					
Pair 7	Q8Pre	4.00	20	0.918	0.205	-0.340	0.340	0.000	19	1.000
	Q8Post	4.00	20	0.649	0.145					
Pair 8	Q9Pre	4.60	20	0.503	0.112	-0.234	0.134	-0.567	19	0.577
	Q9Post	4.65	20	0.489	0.109					
Pair 9	Q10Pre	3.75	20	1.070	0.239	-0.486	0.586	0.195	19	0.847
	Q10Post	3.70	20	0.979	0.219					
Pair 10	Q11Pre	1.40	20	0.503	0.112	-0.304	0.304	0.000	19	1.000
	Q11Post	1.40	20	0.503	0.112					
Pair 11	Q12Pre	4.05	20	0.826	0.185	-0.469	0.269	-0.567	19	0.577
	Q12Post	4.15	20	0.813	0.182					

Table 8

Chi-Square analysis examining differences in chronic disease diagnosis and age

Age	Diagnosis		Total
	Yes	No	
26-34	6	8	14
35-40	4	2	6
41-45	0	0	0
	10	10	20

Note. $\chi^2(2) = 2.35, p = .307$

Table 9*ANOVA examining associations between education level and BMI*

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1463.257	3	487.752	4.949	.013
Within Groups	1576.791	16	98.549		
Total	3040.048	19			

Table 10*ANOVA examining associations between income and BMI*

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	402.457	2	201.229	1.297	.299
Within Groups	2637.571	17	155.152		
Total ⁵	3040.048	19			

⁵ Test of homogeneity of variances was analyzed and calculated a $p = .082$, revealing no statistical significance between income and BMI

Table 11*Correlation analysis: Disease diagnosis and BMI*

	BMI	Disease Diagnosis
BMI	1	-.382
Disease Diagnosis	.892	1

Table 13*Correlation analysis of BMI, education, and income*

	BMI	Education	Income
BMI	1		
Education	.463*	1	
Income	-.170	.319*	1

*Correlation is significant at the 0.05 level (1-tailed).

Table 14*Evidence Matrix Table*

Agyemang, P., & Powell-Wiley, T. M. (2013). Obesity and Black women: Special considerations related to genesis and therapeutic approaches. <i>Current Cardiovascular Risk Reports</i> , 7(5), 378–386. http://doi: 10.1007/s12170-013-0328-7				Grade Level of Evidence: Strong recommendation; Low quality evidence (V)
Hypothesis/ Questions	Design	Sample	Measurement	Results/Implications
Obesity in Black women is in large part secondary to cultural, environmental, and psychosocial factors. Looking at the different factors that contribute to obesity in Black women and the need to tailor interventions towards those factors.	Literature review of current studies, meta-analyses, and current interventions targeted at Black women.	National Health and Nutritional Examination Survey (NHANES) from 1999-2010	Review of literature and NHANES data; compilation of recommendations.	More data needs to be collected on the different factors that contribute to obesity in women. Additional clinical trials/genetic studies to assess genetic factors. Interventions need to be targeted at the different cultural and environmental factors in weight loss programs. Limitations: review of studies and statistical facts; no experimentation done to see if targeting these factors have positive outcomes in weight loss and maintenance.

<p>Banerjee, E. S., Herring, S. J., Hurley, K. E., Puskarz, K., Yebernetsky, K., & Lanoue, M. (2017). Overcoming obesity: A mixed methods study of the impact of primary care physician counseling on low-income African American women who successfully lost weight. <i>American Journal of Health Promotion</i>, 32(2), 374–380. http://doi:10.1177/0890117117690853</p>				<p>Grade Level of Evidence: Strong recommendations; High quality evidence (I)</p>
Hypothesis/ Questions	Design	Sample	Measurement	Results/Implications
<p>Does interaction with a health care provider influence weight loss and weight loss maintenance in African American women?</p> <p>Do African American women who are told by their provider to lose weight have better outcomes and are more motivated?</p>	<p>Mixed-methods study (interviews and quantitative data from EMR)</p>	<p>763 women aged 18-64 (161 in positive deviance group and 602 women in control group)</p> <p>Women obtained from EMR system in an urban university-based family medicine practice.</p>	<p>Weight related medical problems and obesity listed in problem list in EMR. Documentation of dietary counseling listed in problem list.</p> <p>Surveys in person or mail.</p> <p>In depth person interviews with positive deviant group.</p>	<p>Documenting obesity or weight related disease in problem list provided motivation for participants.</p> <p>Participants felt motivated if their PCP mentioned the need for weight reduction.</p> <p>Participants wanted full discussions with PCPs regarding weight and weight reduction.</p> <p>A relationship with their PCP and support obtained from them was important to participants.</p> <p>Limitations: Lower income population, small number of survey participants, unable to speak on specific PCP counseling done with each patient-was it consistent?</p>

<p>Bauer, A. G., Berkley-Patton, J., Bowe-Thompson, C., Ruhland-Petty, T., Berman, M., Lister, S., & Christensen, K. (2017). Do Black Women’s Religious Beliefs About Body Image Influence Their Confidence in Their Ability to Lose Weight? <i>Preventing Chronic Disease</i>, 14, 1–10. http://doi: 10.5888/pcd14.170153</p>				<p>Grade Level of Evidence: Strong recommendations; high quality evidence (I).</p>
Hypothesis/ Questions	Design	Sample	Measurement	Results/Implications
<p>To examine the relationship of health history factors, religious involvement, and beliefs of body image in Black women explained motivation and confidence to lose weight.</p>	<p>Mixed methods /cross sectional study (qualitative interviews and descriptive statistics)</p>	<p>240 Black women aged 18-80 from 6 Black churches in specific area of FL.</p> <p>These 6 churches participated in larger study, Project FIT; baseline data was used to conduct a cross sectional study</p> <p>Identified as Black and female; did not have sickle cell anemia, were not pregnant or not planning to become pregnant, and willingness to participate in survey.</p>	<p>Surveys completed using pen and paper to assess health-related beliefs and behaviors.</p> <p>Collected over a 6-week period and assessed health care visits over the past 12 months.</p> <p>Perceived Stress Scale to assess stress.</p> <p>Religious Background and Behavior Scale to assess religiosity.</p> <p>Descriptive statistics was used to examine associations between predictor variables and motivation and confidence to lose weight.</p>	<p>BMI was significantly predicated to encourage weight loss which was consistently seen.</p> <p>Chronic disease diagnosis or prevention was not a primary reason to lose weight.</p> <p>Religiosity was not associated with motivation or confidence to lose weight-only seen as a common denominator amongst women in this population.</p> <p>Body satisfaction was not associated with motivation to lose weight</p> <p>Body image beliefs in relation to God predicated confidence to lose weight in the regression model.</p> <p>Limitations: One of the first studies of its kind to explore body image, religiosity, and health history to predict motivation and confidence in ability to lose weight.</p>

Cameron, N. O., Muldrow, A. F., & Stefani, W. (2018). The weight of things: Understanding African American women’s perceptions of health, body image, and attractiveness. <i>Qualitative Health Research</i> , 28(8), 1242–1254. http://doi: 10.1177/1049732317753588				Grade Level of Evidence: Strong recommendations; good quality evidence (III)
Hypothesis/ Questions	Design	Sample	Measurement	Results/Implications
<p>Study examined to see how African American women handle discourses related to body size, health, and attractiveness in and out of their community.</p> <p>Attempting to gain women’s perspective on health and body size.</p>	<p>Qualitative study</p> <p>One on one semi-structured interviews; allowed for structured questions along with open dialogue.</p>	<p>11 African American women aged 18-65 years old.</p> <p>Snowball technique was used to obtain participants</p>	<p>One on one semi-structured interviews; allowed for structured questions along with open dialogue.</p> <p>Researchers were able to direct conversation based on a list of pre-determined topics that allowed for freedom and candor during the interviews.</p>	<p>African American women have their own thoughts and issues with health, body image and attractiveness compared to their white counterparts.</p> <p>Participants have a negative view on BMI and want another scale developed that is more in tuned with the differences in body structure and cultural differences.</p> <p>Participants desired more individualized care that is culturally sensitive. They desire their providers to be sensitive to topics that have plagued and continue to plague the African American community.</p> <p>Achieving a positive body image by eating healthy and exercising is wanted instead of achieving a particular weight.</p> <p>Limitations: small sample size; size dispersed throughout United States; wide age range; need for more data and longer time frame. There is a need for stronger data collection.</p>

<p>Diggins, A., Woods-Giscombe, C., & Waters, S. (2015). The association of perceived stress, contextualized stress, and emotional eating with body mass index in college-aged Black women. <i>Eating Behaviors</i>, 19, 188–192. http://doi: 10.1016/j.eatbeh.2015.09.006</p>				<p>Grade Level of Evidence: Strong recommendations; high level of evidence (II)</p>
Hypothesis/ Questions	Design	Sample	Measurement	Results/Implications
<p>Examine the associations among emotional eating, perceived stress, contextualized stress, and BMI in African American college students.</p>	<p>Cross-sectional survey study</p>	<p>104 students attending a Historically Black College and University in southeastern US.</p> <p>Criteria included self-identification as an African American female between ages 18-30 years.</p> <p>Data from 5 students was not used due to missing data</p>	<p>Demographic questionnaire determined age, college classification, self-reported height and weight were used to determine BMI</p> <p>Jackson Hogue Phillips Contextualized Stress Measure developed to measure racial and gender stress for African American women.</p> <p>Perceived Stress Scale for stress measurement.</p> <p>Revised Eating Behavior Pattern Questionnaire subscale for emotional eating.</p>	<p>There was no direct association with BMI, perceived stress, contextualized stress, or emotional eating.</p> <p>There were findings that college aged, African American women reported more emotional eating with higher levels of stress. These women tended to eat foods higher in sugar and fat when stressed.</p> <p>There was a relationship seen between perceived stress, contextualized stress, and BMI, however it depends on the amount of emotional eating.</p> <p>Further studies should be conducted on college-aged/early adulthood AA women to assess rates of stress, emotional eating, and obesity.</p> <p>Stress (perceived and contextualized) is a large contributing factor to obesity rates in AA women.</p> <p>Limitations: Low rates of obesity and overweight status in the sample size.</p> <p>Self-reporting height and weight possibly skewed BMI results.</p>

<p>Knox-Kazmierczuk, F., & Shockly-Smith, M. (2017). African American women and the obesity epidemic: A systematic review. <i>Journal of Pan African Studies</i>, 10(1), 76–90.</p>				<p>Grade Level of Evidence: Strong recommendations. Lower quality of evidence (V)</p>
Hypothesis/ Questions	Design	Sample	Measurement	Results/Implications
<p>Reviewing literature that focused on behavior and weight loss in African American women.</p> <p>Reviewed the current literature at the time of review for gaps in recommendations and interventions within weight loss/obesity prevention in Black women.</p>	<p>Review of literature Articles published from January 1990 to December 2013 were included in the systematic review</p> <p>Healthy People 2000 was used as a timeframe and guide.</p>	<p>Peer-reviewed articles from 1/1990 to 12/2013 using the inclusion criteria of: English language, sample that included adults older than 18 years, sample population of Black females, primary outcome of weight loss, racial/ethnic determinants of obesity, sociocultural determinants of obesity, intervention strategies targeting behavior modification for weight loss, and description of intervention.</p> <p>23 studies were included in the literature reviewed.</p>	<p>Studies were narrowed down to 23 from 64 due to lack of inclusion criteria.</p> <p>Based on CDC recommendations of 5-10% reduction in body weight for disease management, studies were deemed effective if subjects achieved this loss.</p>	<p>Social Ecological model (SEM) should be utilized in any programming aimed at weight reduction.</p> <p>More studies are needed on the role of culture in health and lifestyle.</p> <p>Discussed more than one factor contributing to health and weight.</p> <p>Cultural adaptations did not have an impact on weight loss within those three weight loss studies.</p> <p>Limitations: 3 of the studies that focused on weight loss interventions, the sample was mixed and did not mention cultural factors.</p> <p>Multiple studies of all qualities were included which weakened the evidence and results.</p> <p>No distinction was made between ethnic groups among African Americans included in the studies. The authors thought this was significant as cultural practices differ.</p>

Schlicht, C., & Haglund, K. (2015). Weight Loss Intervention Efficacy Among Black Women. <i>The Journal for Nurse Practitioners</i> , 11(7). doi: 10.1016/j.nurpra.2015.04.028				Grade Level of Evidence: Strong recommendations. Good quality of evidence (V)
Hypothesis/ Questions	Design	Sample	Measurement	Results/Implications
<p>Identifying how to tackle obesity prevention and management in the primary care arena for Black women.</p> <p>Does participation for Black women in weight loss intervention groups promote positive weight loss?</p> <p>What weight loss interventions work best for Black women?</p>	Literature review	<p>16 articles published between October-November 2014</p> <p>Randomized controlled trials, systematic reviews, and quasi-experimental studies</p> <p>Inclusion criteria: English language, published after 2004, examined weight loss interventions, adults 18 years or older, weight loss and/or body weight change was an outcome, majority (>70%) of women participants unless the study specifically studied Black participants, and examined weight loss outcomes and/or weight loss intervention effectiveness.</p>	<p>Johns Hopkins Individual Evidence Summary Tool</p> <p>Included only overweight and obese individuals</p>	<p>Significant weight loss occurred mostly in experimental studies.</p> <p>Weight was gained in most studies after 12 months without any further interventions.</p> <p>Some positive results were noted with continued follow up after 12 months in the forms of phone calls, meetings or continued class offering.</p> <p>Black women prefer group meetings with women who are going through similar struggles, accountability partner.</p> <p>Provider intervention is important and should include diet, physical activity and behavior change when participating in weight loss counseling.</p> <p>Limitations: sample sizes, length of studies, need more focus on continued weight reduction and/or maintenance past initial intervention.</p>

<p>Smith, T. M., Tucker, C. M., Arthur, T. M., Wippold, G. M., & Tran, S. (2016). Frequency of visits to a health care provider, health promoting behaviors, and perceived health status among African American women. <i>Women & Health, 57</i>(5), 583–598. https://doi: 10.1080/03630242.2016.1178683</p>				<p>Grade Level of Evidence: Strong recommendations. Good quality of evidence (III)</p>
Hypothesis/ Questions	Design	Sample	Measurement	Results/Implications
<p>Assess if a relationship exists between self-reported number of health care visits to PCP during a calendar year was related to increased better or worse perceived health status in African American women who are pre-hypertensive/hypertensive and/or overweight/obese.</p> <p>The increased number of visits would be associated with engaging in health promoting behaviors.</p> <p>Is age, income level and education level associated with self-reported number of health care visits among African American women?</p>	<p>Cross-sectional study</p> <p>Secondary data from larger intervention study that evaluated a church-based health promotion program on its ability to increase health promoting habits of prehypertensive/hypertensive AA women.</p> <p>Surveys and self-reported data.</p>	<p>180 African American women</p> <p>Women 18 years of age or older, members of the participating churches, or individuals that lived close to 1 of 16 participant churches in the north-central Florida.</p> <p>Must be pre-hypertensive or hypertensive, and/or overweight or obese.</p>	<p>Self-reported information using age, annual household income, highest level of education completed, medical conditions, and perceived health status. Demographic and Health Data Questionnaire (DHDQ).</p> <p>Health Promoting Lifestyle Profile II (HPLP-II)-scale using 52 items to measure overall level of engagement in a health promoting lifestyle.</p>	<p>Increased frequency of visits to healthcare provider was associated with healthier eating.</p> <p>Higher numbers of self-reported visit and health promoting visits was seen in higher income households.</p> <p>Higher income might suggest the increased ability to see providers more often.</p> <p>Some thought that socioeconomic status will negatively or positively affect your participation in health promoting behaviors.</p> <p>Captured a population underrepresented in research.</p> <p>Limitations: Small sample size for results, one of the first interventions to assess this relationship, study design, and self-reported measures.</p>

Walker, R. E., & Gordon, M. (2014). The use of lifestyle and behavioral modification approaches in obesity interventions for Black women. <i>Health Education & Behavior</i> , 41(3), 242–258. https://doi.org/10.1177/1090198113492768				Grade Level of Evidence: Strong recommendations. Low quality evidence (V)
Hypothesis/ Questions	Design	Sample	Measurement	Results/Implications
Identify lifestyle and behavioral modification studies for Black women targeting weight loss.	Literature review	28 articles published between February 1992-January 2013. Articles were found from the following databases: PsychInfo, MEDLINE, CINAHL, and SPORTDiscus. Sample sizes of reviewed articles ranged from 16 to 1162 participants.	Johns Hopkins Individua Evidence Summary Tool Studies using various phases of obesity interventions using a lifestyle and behavioral modification approach. Studies using existing comorbid conditions as an inclusion criterion were excluded from the review. Importance of the intervention used, duration of intervention, and the setting of intervention were key attributes in the success of lifestyle and behavior modification.	Interventions that were in line with health promotion and behavior modification fell into 11 categories: nutrition counseling, goal setting, encourages health habits and behaviors, physical activity counseling, develops an action plan, promotes social support, identifies barriers to weight loss, assess individual readiness to change, improves self-efficacy, postintervention maintenance, and motivational interviewing. Intervention duration was a key factor in predicting success. Implementing the community, such as the church and community centers shows increased adherence and interest in this population. Tailor weight loss/obesity prevention interventions to be culturally sensitive and relevant. Limitations: literature review only, more research is needed to be done to identify the most effective way at promoting lifestyle change and habit formation.