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Nutrition and Physical Exercise Prevention Strategies to Reduce Obesity During the COVID-19 Pandemic

Carmesha Vajill Carter
Walden University

Walden University

College of Health Sciences and Public Policy

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Carmesha V. Carter

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Review Committee
Dr. Raymond Panas, Committee Chairperson, Public Health Faculty
Dr. Thomas O'Grady, Committee Member, Public Health Faculty
Dr. Sriya Krishnamoorthy, University Reviewer, Public Health Faculty

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Walden University
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Abstract

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by

Carmesha V. Carter

MA, Walden University, 2015

BS, LeMoyne-Owen College, 2006

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Public Health

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Abstract

Obesity has reached an epidemic level of 75 million obese adults and 15 million obese children in the United States. The research problem addressed in this study is the lack of information on how obese people manage their weight-loss strategies to prevent or reduce obesity during shut-in place restrictions for the COVID-19 Pandemic. This study included the Prochaska and DiClemente Trans-Theoretical Model of Behavioral Change and the Stage of Change Theory. The phenomenon approach using phenomenology described participants' lived experiences of being obese. The researcher completed data collection and evaluation among sixteen participants using email questionnaires to analyze participant's responses to answer research questions on the lived experiences of African American adult women in Horn Lake, MS. Findings and recommendations from the study indicated the impact the COVID-19 Pandemic had on the African American population for participants in Horn Lake, MS is due to limited access to healthy and fresh foods, supply chain disruption, and panic buying. Data showed decreased physical exercise due to the closure of gyms, closure of neighborhood parks, and cancellation of sports and other activities increased obesity rates. Future recommendations from the study should include researchers interviewing a more significant number of obese people to assess the relative prevalence of the general population to understand how obese people increase the risk of severe illness because of the COVID-19 virus. This study can influence positive social change through educational awareness programs by helping public health officials educate African American women on obesity and the COVID-19 virus to help the community better self-manage their health during COVID-19.

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Chapter 1: Introduction to the Study

Introduction

The topic of the study was how nutrition and physical exercise prevention strategies could reduce obesity during the COVID-19 pandemic. In this study, I collected data on the perceptions of African American adult women on nutrition and physical exercise. These data helped me create preventive and interventional strategies to treat, reduce, and prevent obesity during the COVID-19 pandemic. Finally, I explored nutrition and indoor and outdoor physical exercise preventive measures in this qualitative inquiry. African American adult women ages 20 to 45 years old with the COVID-19 virus living in Horn Lake, Mississippi (MS) can use preventive measures listed in the study to manage their weight to treat, reduce, and prevent obesity during the COVID-19 pandemic. The main research questions are as follows:

Research Question (RQ)1: What are lived experiences of African American adult women regarding good nutrition and physical exercise preventive strategies being promoted for healthy living to reduce and prevent obesity during the COVID-19 pandemic in Horn Lake, MS?

RQ2: What are the lived experiences of African American adult women concerning the main comorbidities related to overweight and obesity in patients who experienced complications associated with COVID-19?

RQ3: What are the lived experiences of African American adult women's attitudes, subjective norms, and perceived behavioral controls of obesity concerning

eating behavior and physical activity for self-management during the COVID-19 lockdown in Horn Lake, MS?

RQ4: What are the lived experiences of self-management for healthy eating plans and regular physical activity for obese African American adult women in Horn Lake, MS, during COVID-19?

RQ5: What are the lived barriers faced by African American adult women with obesity during the COVID-19 pandemic?

RQ6: What lived chronic diseases have African American adult women have encountered that are independent risk factors for obesity and severe COVID-19, including heart disease, lung disease, and Type-2 diabetes?

Background

This qualitative research study on obesity and its impact during the COVID-19 pandemic helped to bridge gaps in research by identifying outcomes not identified in previous research studies. This study was needed to identify valuable processes and results based on participant's lived experiences of obesity and COVID-19 to create preventive strategies to maintain patients' health with obesity. I examined how dietary intake experiences for decreasing saturated fat intake and sugar consumption and increasing fruit and vegetable consumption reduced obesity, using nutrition and physical activity interventions to maintain a healthy weight. The previous literature review article on obesity using a theoretical framework and a theoretical model (TTM) design demonstrated how improving dietary intake, and physical activity improved increased quality of life for patients diagnosed as obese (Copper et al., 2018). The researchers also

successfully identified a grounded theory approach once the data were collected and analyzed during the research process (Copper et al., 2018). Semi structured, in-depth interviews using memo writing and theme coding was used to measure reliability (Maher et al., 2018). Maher et al., 2018 explained how open coding processes allow segmenting data into single word sequences of words into meaningful expressions. I followed Maher et al. (2018) suggested interview guides, including member checks features, to investigate emerging themes, patterns, and categories to help me identify codes.

Although researchers have investigated issues about obesity, they have not addressed the gap in explaining how obesity is associated with COVID-19. In this study, I explored how obese people experienced maintaining weight-loss activities during COVID-19. Previous researchers have found that a healthy diet and physical exercise are vital components of reducing obesity (Copper et al., 2018). However, there is little to no literature on how nutrition and physical exercise prevention strategies for adults reduce obesity during the COVID-19 pandemic in Horn Lake, MS. Obesity cases in Horn Lake, MS, increased in severity during the COVID-19 Pandemic. More than 85% of obese patients suffer from chronic diseases such as Type 2 diabetes, cardiovascular diseases, hypertension, and cancer, resulting in morbidity and mortality rates (WHO, 2020).

Finally, the results of this study can affect potential social change by providing current healthy behavioral changes through social norms and attitudes for policy, practice, and theory changes. Indoor and outdoor physical activity interventions are tailored for work and home to treat, reduce, and prevent obesity and the spread of COVID-19 during the pandemic. Therefore, my research study can help influence social

change by implementing good nutrition and physical exercise strategies to help support optimal immune function to reduce the weight gained in individuals during the COVID-19 pandemic or a future global catastrophe.

Problem Statement

This research study was conducted in the United States to identify how obesity is a dangerous social and nutritional problem because of the harmful effects of poor nutrition, resulting in a lack of physical activity and sleep. An imbalance for a patient diagnosed as overweight or obese may result in risk factors of a lack of physical activity, unhealthy eating patterns, lack of sleep, and stress (Brooks et al., 2020). Risk factors of being overweight or obese may lead to a patient with Type-2 diabetes, hypertension, arthrosis, and many other complications, resulting in morbidity and mortality (Brooks et al., 2020; WHO, 2019).

The number of African American adult women diagnosed as obese has tripled by 78% during the COVID-19 pandemic (WHO, 2019). Curfews and quarantine altered lifestyle nutritional dietary habits due to the limited availability of fruits and vegetables during restricted food store hours during the pandemic (Hafeez et al., 2020). The impact of physical activity during quarantine also resulted in decreased exercise within populations (Hafeez et al., 2020). The problem is that obesity continues to be a global public health challenge for all races because of its association with a higher incidence of chronic diseases (Centers for Disease Control and Prevention [CDC], 2020). Moreover, obesity has tripled by 60%, including increased Type-2 diabetes, hyperlipidemia, heart

disease, and cancer in African American adult women during the COVID-19 lockdown (CDC, 2020; WHO, 2019).

Obesity is a significant independent risk factor for the COVID-19 virus that can adversely affect people's ability to manage their condition, leading to morbidity or mortality (WHO, 2019). There is strong evidence that the COVID-19 pandemic has collided with the obesity epidemic, resulting in a patient's risk of severe health complications, such as Type-2 diabetes, hypertension, arthrosis, and cancer (WHO, 2020). Prior research findings within the last three years have suggested that access weight makes COVID-19 more severe because individuals are faced with challenges of maintaining a healthy diet, engaging in physical exercise during the lockdown, and managing other aspects of self-management (Jakobbson et al., 2020). Obesity also increases chronic inflammation, which disrupts immune system function in response to the COVID-19 virus (WHO, 2020). Another problem is that people with obesity often have other underlying health conditions, such as heart disease, chronic lung disease, Type-2 diabetes, and liver disease (Hafeez et al., 2020). Those diseases are already associated with more significant COVID-19 risks, presenting additional challenges to the patient and the country's health system for the United States (WHO, 2020). From March 2019 to May 2021, the Horn Lake, MS government mandated a lockdown with restrictions and regulations, including a curfew that restricted the movement of closure of businesses, physical distance protocols, social and religious activities, and transportation in the county.

The need to address a gap in the research literature is urgent because obese individuals face challenges and risks of COVID-19. Results included an increase of patients admitted to hospitals with the COVID-19 virus by 115%, an increase in being admitted to an intensive care unit by 83%, and an increase in death by 67% (WHO, 2020). The African American population is experiencing the burden of infections, with more than 875,000 adult COVID-19 cases of hospitalization, symptomatic infections, and developed complications, resulting in 426,000 deaths in the United States from the beginning of the pandemic until May 2021 (WHO, 2019). The risk of fatalities from COVID-19 increased by 92% in people who were obese (WHO, 2020). The United States has had more than 25 million infections from the COVID-19 virus, resulting in billions of government dollars spent on healthcare costs for hospitalization and intensive care treatment (WHO, 2020). The CDC acknowledged that obesity is a severe risk factor, contributing to 30.9% of hospitalizations because of COVID-19. African Americans, Latinos, and Native Americans die of COVID-19 more than 2.9 times faster than White Americans (Brown et al., 2021). The CDC reported that the 15 million people living with severe obesity are twice as likely to die from COVID-19 than people who are not obese (CDC, 2020).

The lockdown to combat the COVID-19 pandemic has been successful from an epidemiological perspective (WHO, 2019). However, the COVID-19 lockdown has severe consequences for obesity awareness programs and indoor physical exercise (Elin et al., 2020). According to Nieman and Wentz (2019), many obese patients are concerned about finding awareness advice on obesity and its impact on COVID-19. They are also

concerned with findings and information on ways to self-manage healthy eating and physical exercise preventive strategies while under COVID-19 lockdown restrictions. Therefore, this study was timely and appropriate in mapping the current evidence on the impact of COVID-19 on weight management in healthy African American adults. This study identified literature gaps in addressing nutrition and physical exercise preventive strategies to reduce obesity during the COVID-19 pandemic to inform future research directions.

Purpose of the Study

In this qualitative study, I explored nutritional and physical exercise preventive measures to create strategies to reduce obesity. African American adult women ages 20 to 45 year's old who use adequate nutrition and physical activity health initiative strategies reduced and prevented obesity and COVID-19 rates in Horn Lake, MS. I conducted a phenomenological design using open and closed-ended questionnaires for semi structured face-to-face and telephone interviews to generate obesity and COVID-19 data. Respondents provided answers to social and environmental behaviors exploring their lived experiences while being diagnosed as obese during the COVID-19 pandemic.

Research Questions

Research Question (RQ)1: What are lived experiences of African American adult women regarding good nutrition and physical exercise preventive strategies being promoted for healthy living to reduce and prevent obesity during the COVID-19 pandemic in Horn Lake, MS?

RQ2: What are the lived experiences of African American adult women concerning the main comorbidities related to overweight and obesity in patients who experienced complications associated with COVID-19?

RQ3: What are the lived experiences of African American adult women's attitudes, subjective norms, and perceived behavioral controls of obesity concerning eating behavior and physical activity for self-management during the COVID-19 lockdown in Horn Lake, MS?

RQ4: What are the lived experiences of self-management for healthy eating plans and regular physical activity for obese African American adult women in Horn Lake, MS, during COVID-19?

RQ5: What are the lived barriers faced by African American adult women with obesity during the COVID-19 pandemic?

RQ6: What lived chronic diseases have African American adult women encountered that are independent risk factors for obesity and severe COVID-19, including heart disease, lung disease, and Type-2 diabetes?

Theoretical Framework

The theories that grounded this research study included the Prochaska and DiClemente (TTM) of behavioral change and the stage of change (SOC) theory. A theoretical framework using a trans-theoretical behavioral change mode was the best fit for my research study because it guided prevention strategies to prevent weight gain. Also, this model is extensively used in public health and in my study to predict adult's behaviors of being overweight or obese. The model suggested that changing one's

behavior was gained in stages to increase a healthy lifestyle. The TTM consists of six stages: pre contemplation, contemplation, preparation, action, maintenance, and termination that individuals move through to change behaviors. Therefore, this model was used in my study to guide health initiatives and interventions of health behaviors to increase exercise strategies and improve eating habits for obese patients. Finally, this model helped prepare stage-tailored interventions to change the behaviors of patients diagnosed as obese during the COVID-19 pandemic to meet healthy lifestyle goals to reduce and prevent obesity.

The logical connections between the theoretical framework presented and the nature of my study included Prochaska and DiClemente's theoretical work (Woodruffet et al., 2017). Prochaska and DiClemente's theoretical work has been used extensively in public health for dietary and physical exercise modification in weight–loss management, overweight and obesity of children and adults for indoor and outdoor intervention (Woodruffet et al., 2017). In this research study, I focused on the concept of perceived control related to the shut-in place indoor lockdown during the COVID-19 pandemic. This research study also relates to the impact COVID-19 has on African American women diagnosed with obesity and their ability to self-manage lifestyle modification of the disease.

Nature of the Study

The phenomenon approach was the most appropriate strategy for my research study. The phenomenon approach for my research study addressed the experiences of patients diagnosed as overweight or obese. I also used a phenomenology design to

describe the lived experiences (descriptive) or the meaning of lived experiences (interpretive) of overweight or obese participants. In this study, I sought to explore nutrition and physical exercise prevention strategies to treat, reduce, and prevent obesity during the COVID-19 pandemic. More specially, this general qualitative inquiry aimed to explore nutrition and physical exercise preventive strategies to reduce obesity for African American women (20-45 years) living in Horn Lake, MS.

Data Information and Source

For my research design, I recruited African American adult women ages 20 to 45 diagnosed as obese to participate in individual semi structured interviews. Next, I performed an interview protocol to address the study's problem and purpose statement by exploring participants' lived experiences of being obese during the COVID-19 pandemic. I also used audio recorders to record the interviews for transcript purposes.

I used a checklist to collect data about participants' specific behaviors, knowledge, and skills during the interview process. Finally, data collected from the interview questionnaires allowed me to explore responses of the participant's lived experiences of nutrition and physical exercise for adults diagnosed as obese who lived in Horn Lake, MS, during the COVID-19 pandemic lockdown.

Definitions of Key Terms, Concepts, and Constructs

The keywords and database searches included *African American, COVID-19, hypertension, leptin deficiency, nutrition, obese, obesity, overweight, physical exercise, social distancing, social isolation, and Type-2 diabetes.*

African Americans: The descendants of enslavement brought from African American homelands in 1809 to work in communities in the United States (Ozodiegwu et al., 2019).

COVID-19: An infectious disease that affects the respiratory system and is capable of producing severe symptoms. COVID-19 is also caused by the Coronavirus SARS-COV-2 of the genus Beta-coronavirus that affects the organs (Cuschier & Grech 2020).

Hypertension: Abnormal blood pressure caused by the lack of blood weakening the blood vessel wall (Sorjonen et al., 2021).

Leptin deficiency: Is a condition that causes severe obesity within a few months because it signals satiety to the hypothalamus (Johnson et al., 2021).

Nutrition: Obtaining good nutritional health foods for growth (Phillips et al., 2016).

Obese: A body mass index (BMI) of 30 or greater with increased risks of severe health conditions (Batsis, Zagaria, et al., 2020).

Obesity: is a disorder involving excessive body fat consumed from high-caloric intake, resulting in health problems consumed from high-caloric intake, resulting in health problems (Batsis, Zagaria, et al., 2020).

Overweight: Having more body fat than normal, with a BMI of 25 or higher, divided by an individual's weight in kilograms per height in meters squared (Batsis, Zagaria, et al., 2020).

Physical exercise: Planned strategies exercise structured routines for conditioning the body to improve health and fitness (Batsis, Dokko, et al., 2020).

Social distancing: maintain a recommended distance of one meter to avoid spreading the infection of the disease.

Social isolation: is the restriction of a social movement of individuals infected with the disease.

Type-2 diabetes: A chronic condition that affects how the body metabolizes sugar glucose; (Shi et al., 2020).

Assumptions

I assumed that the appropriate population was selected for my research study by using flyer recruitment for individuals who met the criteria and a snowball sampling technique. I also assumed that the questions were answered to the best of the participant's knowledge based on their understanding of the RQs I presented in the questionnaire. Moreover, I assumed that participants provided honest and open responses to questions to express their lived experiences of being obese. I can use these findings to assist communities at risk of becoming obese. Finally, this study was vital and relevant for future studies because it accurately represented results for participants without bias.

Scope and Limitations

One potential challenge faced during my research study was recruiting participants during the COVID-19 pandemic. Some potential candidates for the research study may have felt uncomfortable participating in the study because of fear of encountering individuals who had COVID-19 or coming into contact with individuals exposed to someone who had the virus. Another problem I faced during my research study was conducting one-on-one interviews under COVID-19 restrictions. The MS government-stipulated COVID-19 regulations because in-person contact was impossible

due to lockdown. Finally, response bias was also a challenge because data collection was based on participant's self-report.

The viability of Zoom was recommended to critically assess and advance innovation in online methods as a tool for collecting qualitative data. Zoom is time-effective and cost-effective, and data management features are easy to manage for the researcher (Archibald et al., 2019). According to Archibald et al. (2019), the disadvantages of using Zoom consist of the platform's challenges. For example, reflecting issues were associated with establishing call connection to join the session and audio reliability and quality. Although researchers can use Zoom communication technology to conduct research, participants often experience technical difficulties based on their education level (Archibald et al., 2019).

In addition, qualitative research has reliability issues. I ensured the data I collected was quality data through qualitative standards, and the observability element was essential. Therefore, it was my responsibility to ensure steps were taken to promote data. I promoted data through credibility, transferability, dependability, confirmability, and objectivity of qualitative data.

Significance of the Study

This study is significant because literature review evidence has emerged around the risk of obesity before and during the COVID-19 lockdown. Emerging research evidence has suggested that obesity is a risk factor for the progression of severe outcomes and significant complications of the COVID-19 disease for international populations and populations in the United States (Cuschier & Grech, 2020). For instance, the CDC (2020)

reported that the United States indicated that 53% of morbidity rates for hospitalization and 61% of mortality rates were affected by obesity and COVID-19 (CDC, 2020; WHO, 2020). According to Guillaume et al. (2021), people hospitalized in France in critical care with COVID-19 were 2.91 times more likely to be associated with the death from COVID-19 and obesity. Obesity is a complex disease that takes months to develop (Batsis, Zagaria, et al., 2020). However, while experiencing the COVID-19 pandemic, individuals have potentially seen weight gain among adults and children for some time in a short period while in solitary confinement due to the COVID-19 disease (Shi et al., 2020). Lifestyle changes in diet can change due to lockdown measures, self-isolation, and quarantine to reduce and prevent COVID-19 (Shi et al., 2020). Moreover, stockpiling and food shortages occurred early on in several states in the United States (Belanger et al., 2020).

This study is also significant because findings from the study provided insightful information on preventive nutrition and physical exercise strategies to combat the challenges of obesity for African American populations during solitary confinement lockdown in connection with COVID-19. The findings also contributed knowledge to Horn Lake's public health organizations, stakeholders, family clinics, families, and the general public on awareness and strategies to prevent obesity. Additionally, findings provided preparedness and management of the COVID-19 virus through self-management. This study can help inform policymakers and individuals diagnosed with obesity about more effective ways to manage the disease and virus during the pandemic. By filling this gap, public health professionals can be better prepared to address potential

barriers and challenges of obesity to reduce the number of deaths among COVID-19 patients who are obese. Furthermore, information about obesity and COVID-19 can be translated into action to prevent the spread of the virus and combat obesity in the African American population. This, I can impact positive social change on obesity and the COVID-19 virus in Horn Lake, MS. Policymakers can benefit from the information used in the study to provide essential information through the decision-making and planning process for African American women diagnosed with obesity.

According to WHO (2020), changes in food consumption and shopping patterns during the COVID-19 pandemic have increased food prices for fruits and vegetables. The expense of food prices has impacted foods with longer shelf life. Shorter life expenses on foods have decreased food costs (Belanger et al., 2020). Physical activity has also impacted individuals because government restrictions on gyms and other exercise facilities were shut down (Jakobsson et al., 2020). The shutdown of the gym and other exercise facilities resulted in fewer opportunities for individuals to exercise (Rodela et al., 2020).

Furthermore, social distancing during quarantine can negatively impact mental health, contributing to overweight and obesity because emotional distress can lead to overeating (Rodela et al., 2020). Therefore, my dissertation research can affect social change by implementing nutrition and physical exercise preventive strategies to treat, reduce, and prevent weight gain during the COVID-19 pandemic lockdown. I addressed social change among the population's strict lockdown measures for diet, physical activity, and weight for obesity and COVID-19. Obesity can become more relevant and

significantly impact those affected, resulting in mortality, increased costs in hospitalization, and treatment measures to reduce the disease (Cuschier & Grech, 2020).

Finally, African American adults diagnosed as overweight or obese must be provided self-care and implement preventive strategies to improve their overall health and well-being during the pandemic. It is critical because decreasing obesity rates decrease the mortality rates of COVID-19 for the obese population (WHO, 2020). Reducing the burden of obesity and the COVID-19 virus can also reduce the current economic healthcare cost of spending on the disease and the virus in Horn Lake, MS.

Summary

Chapter 1 highlighted the threat of chronic diseases and the economic burden obesity has on the United States. This chapter also explained how I explored how obese people have experienced struggles with increased weight gain during the COVID-19 pandemic. The introduction of Chapter 1 highlighted the reasoning for a qualitative inquiry to explore nutrition and physical exercise preventive measures for obesity. In the background, I summarized the study's scope and theoretical framework design to improve dietary intake and physical activity. The problem statement provided a relevant understanding of how the quarantine lockdown for COVID-19 caused a lifestyle change for obese patients. The questions guided the research study by providing participant's lived experiences and perceptions of obesity. In Chapter 2, I identify literature review evidence of the overview of obesity, challenges obese patients experience, and chronic risk factors supporting the research rationale for the study.

Chapter 2: Literature Review

Introduction

This chapter reviews literature on obesity trends and how individual factors have contributed to the link between obesity and COVID-19 during the pandemic. Obesity is a higher weight condition than a healthy weight for a given height, described as grossly fat or overweight (Cameron et al., 2018). COVID-19 is an acute respiratory illness in humans caused by the coronavirus that produces severe health complications and can result in morbidity and mortality (Cuschier & Grech, 2020). The New England Journal of Medicine shared one additional attribute COVID-19 patients shared: They had significant risk factors for obesity. According to Burton et al. (2020), lived experiences of COVID-19 related to social isolation by describing attitudinal, psychological, and behavioral responses to isolation with restrictions and regulations, including a curfew that restricted movement of closure of businesses, physical distance protocol, social and religious activities, and transportations in the county.

Social isolation has resulted in an increasingly sedentary lifestyle because routine changes have led to psychological and emotional impacts, decreased self-worth, and adverse health outcomes that have reduced physical interaction and have caused psychological distress (Melo & Soares, 2020). According to Torales et al. (2020), the impact of the pandemic on mental health is leading to an overburdened health care system. According to the CDC (2020), to mitigate the effects of COVID-19, social distancing is a vital strategy to prevent the increase in cases and deaths in COVID-19, identifying measures to promote self-management and weight management. Despite

some evidence about the psychological impact of quarantine, there is a need for more meaningful knowledge of the effects of COVID-19-related social isolation on hundreds of millions of people under lockdown (Brooks et al., 2020). Thousands of individuals have experienced anxiety, negative thoughts, sleep disturbances, and suicidal ideation from stay-at-home measures and policy implementations (Torales et al., 2020). Therefore, available research has demonstrated the importance of nutrition and physical exercise prevention strategies related to obesity and the COVID-19 problem (Cameron et al., 2018). In this chapter, I further discuss obstacles to the study and point out gaps to address in the research literature. The literature review reveals clear links and connections on logical progression to show past research and the objective of the current study.

The TTM of SOC for this research was based on combined diet and physical activity interventions. There are six identifiable obesity factors, genetics, metabolism, behavior, environment, culture, and socioeconomic status (SES), that relate to the severity of COVID-19 (CDC, 2020; WHO,2019). The relationship of each of these factors addresses individual combinations to determine the effectiveness of dietary intervention and physical activity interventions for lifestyle modification to produce sustainable weight loss in overweight and obese individuals (Nieman & Wentz, 2019).

African American adult females ages 20 years old and older have struggled more with being overweight or obese during COVID-19 solitary confinement than any other race (Jakobsson et al., 2020). As a result, physicians and researchers have sought to combat the obesity epidemic through education awareness, dietary intervention, and

physical exercise prevention strategies (Nieman & Wentz, 2019). This study provides information and advice from data collected on community insights to understand physical activity for overweight and obese African American adult women. The data can assist communities in helping individuals make healthier lifestyle choices, such as eating healthy meals and becoming physically active for lifestyle modifications. This study is significant because although researchers have found that a healthy diet and physical exercise are vital components of reducing obesity, people are still struggling with losing weight and maintaining their ability to manage their diet while in solitary confinement during the COVID-19 pandemic. Thus, individuals are faced with the challenges of maintaining a healthy diet and engaging in physical exercise while managing other aspects of self-management for shut-in place restrictions for solitary confinement (Jakobsson et al., 2020).

Another problem is that people diagnosed as being obese often have other severe underlying health conditions, such as heart disease, chronic lung disease, Type-2 diabetes, and liver disease (Hafeez et al., 2020). Those diseases are associated with more significant COVID-19 risks and present additional challenges to the patient and the country's health system for the United States (WHO, 2020). Obesity weakens the fight against COVID-19 because it hinders the immune system and lung function by increasing chronic inflammation, which disrupts immune system function in response to the COVID-19 virus (WHO, 2020).

There is still little to no literature on how nutrition and physical exercise prevention strategies can reduce obesity during the COVID-19 pandemic (WHO, 2020).

Likewise, few research studies or assessments on how COVID-19 has impacted the nation's weight have been reported (WHO, 2019; 2020). However, the government of Horn Lake, MS, mandated a lockdown with restrictions and regulations, including a curfew that restricted movement of closure of fitness businesses, social and religious activities, and transportation to gym facilities in the county based on physical distance protocol. The stay-at-home mandates to meet social distancing requirements, exercise facilities closures, and work from home mandates have resulted in fewer opportunities for individuals to exercise, causing them to be less active during the day (Batsis, Dokko, et al., 2020). In addition, social distancing is likely to impact mental health, which has been known to also contribute to overweight or obesity (Rodela et al., 2020). Therefore, literature review evidence is still emerging around the risk of obesity and how it makes COVID-19 more severe for adults during the COVID-19 pandemic (Hafeez et al., 2020).

This study can contribute to social change by addressing ways African American adult women are most likely to engage in dietary restriction techniques for weight reduction. Positive social change also occurs when individuals within the community health begin to improve after implementing obesity prevention strategies during the COVID-19 pandemic (Burton et al., 2020). Moreover, improvements in health can significantly impact those affected by obesity and COVID-19, resulting in increased treatment measures to reduce and prevent the disease and virus (Burton et al., 2020). Therefore, understanding social vulnerabilities and community strategies for environmental change are crucial in increasing obesity awareness locally and at state and national levels (Phillips et al., 2016). In the United States, positive social change for

social conditions of obesity can also result in social improvement for individuals, families, communities, organizations, and government to reduce the economic cost of obesity and the COVID-19 pandemic (Burton et al., 2020).

The keywords and databases searched included the following: *African-American* (ScholarWorks), body mass index (Medline with full-text PubMed), *COVID-19* (Medline with full-text PubMed), *COVID-19 complications* (Medline with full-text PubMed), *COVID-19 diagnosis* (Medline with full-text PubMed), *COVID-19 mortality* (Medline with full-text PubMed), *hypertension* (Medline with full-text Pub line), *Leptin deficiency* (Medline with full-text PubMed), *morbidity obesity* (ScienceDirect), *nutrition* (ScholarWorks), *obesity* (ScholarWorks), *overweight* (Medline with full-text PubMed), *obesity complications* (Medline with full-text PubMed), obesity *diagnosis* (Medline with full-text PubMed), *pandemic* (Medline with full-text PubMed), *physical exercise* (Medline with full-text PubMed), *quarantine-15* (Thoreau Multi-database), *Type-2 diabetes* (ScholarWorks), weight-*gain* (ScholarWorks), weight *loss* (ScholarWorks) and in the Pub Med database and Thoreau Multi-database search.

According to Copper et al. (2018), various articles from government sites such as the WHO and the CDC produced literature searches on the impact of obesity and its association with patients. The literature review is information obtained from the electronic database ScholarWorks and ScienceDirect at Walden University and online databases such as Medline with full text on Pub Med and Thoreau Multi-database search. Future data sources include hard copies and electronic versions of the American Journal

of Public Health, published by the American Dietetic Association, and the Journal of the American Medical Association (JAMA).

If research literature gaps are addressed, the literature can benefit overweight and obese individuals through the study's rationale. In this study, I aimed to create obesity awareness for the public by implementing nutritional diet plans and technique strategies for indoor and outdoor physical activities during solitary confinement. Engagement in lifestyle changes can alleviate obesity for MS populations. Frequently, patients are not aware of their (BMI) (Copper et al., 2018). The BMI is used as an indicator to monitor an individual's weight. Therefore, treatment of obesity is not possible without proper education, awareness, and diagnosis of the disease (Copper et al., 2018). Thus, in this study, I provided evidence-based research to promote obesity awareness and health concerns for African American adult women to manage, treat, and prevent overweight and obesity.

National Obesity Trends

Copper et al. (2018) studied the "Perception of adults with overweight and obesity and chronic musculoskeletal pain," which contributed to the theoretical framework of my present study. The authors examined patients' relationships between weight and pain from underlying health conditions (Copper et al., 2018). Cooper et al.'s study was based on sociodemographic factors defined by age, level of education, income, race, ethnicity, and gender as significant contributors to obesity. The authors found that sociodemographic factors for excess weight and abdominal obesity included lack of education and income for the study (Copper et al., 2018).

An estimated two-thirds of adults in the United States have become dramatically overweight or obese in the past 30 years (Phillips et al., 2016). Furthermore, the lifespan of an obese patient is shortened by 20 years for women and 25 years for men (Hafeez et al., 2020). Compared to other races, African American adult women had the highest rates of 83.2% for obesity in Horn Lake, MS, during the COVID-19 lockdown.

Table 1

Existing Disparities Based on Race and Ethnicity

Race/Ethnicity	Rates of obesity for ethnicity groups
Black women	83%
Hispanic women	78%
White women	52%

Individuals are considered underweight if their BMI is 18.5 or below (Sorjonen et al., 2021). An average healthy weight BMI for height that lowers the risk of developing severe health problems is 18.5 to 24.9 kg/m² (Sorjonen et al., 2021). However, a person is considered obese if their (BMI) ranges from 20 to 25 or equal to 30 kg/m² (Fitzpatrick & Hill-Briggs, 2017). Overweight individuals with a BMI of 25.5 to 29.9 kg/m² increase several risks for chronic diseases, such as Type-2 diabetes, high blood pressure, and sleep apnea (Fitzpatrick & Hill-Briggs, 2017; Okop et al., 2016). An individual with a BMI greater than 30 to 34.9 kg/m² is considered obese, leading to several chronic diseases of psychological issues, musculoskeletal conditions, and cancer (Sorjonen et al., 2021). In addition, the BMI classification chart for women tends to have more body fat than men

(Phillips et al., 2016). Therefore, the BMI classification for adults is as follows: underweight: BMI:<18.4 kg/m², normal health weight: BMI 18.5 to 24.9 kg/m²; overweight: BMI 25.5 to 29.9 kg/m²; and obese BMI > /30kg/m² (Fitzpatrick & Hill-Briggs, 2017). BMI is calculated for an individual's height, and its weight formula is BMI = weight in pounds ÷ height inches² X 703 (Fitzpatrick & Hill-Briggs, 2017).

In 2019, 67% of adults in the United States were not engaged with a healthy meal plan or physical activity strategies (Phillips et al., 2016). In addition, 29% of adults consumed fruits and vegetables at least 3 to 5 times daily (Belanger et al., 2020). The prevalence of obesity was 54.7% in 2021, 18.9% in 2020, and 16.8% in 2019 (WHO, 2019). Hafeez et al. (2020) indicated a 12% increase in the prevalence of diabetes in heart disease and heart attack associated with a high economic cost. Moreover, Burton et al. (2020) noted that a 42% average increase in medical expenses was attributed to obesity between 2019 and 2021. Therefore, obesity has placed a significant burden on the United States medical care delivery system spending (Burton et al., 2020). The medical costs for obese patients with COVID-19 were $1,429 higher than those with an average weight (Burton et al., 2020). Income inequality primarily influences a person's ability to afford health care to treat obesity in the United States and internationally (Burton et al., 2020; WHO, 2019). Therefore, critical steps are required to reduce the rise in medical costs and the enormous burden of obesity on the nation (Burton et al., 2020).

This research study is critical in addressing obese behavioral changes using the theoretical framework for African American adult women 20 years old and above by identifying missing information to understand how individuals perceive overweight and

obesity at risks associated with the disease. Educating populations on the risk of obesity through diet, exercise, sleep, and stress management can help individuals learn about their health and implement regular physical activity to support a healthy lifestyle (Brown et al., 2021). According to Copper et al. (2018), obesity is higher among adult women and men 30 to 45 years old at (72%), adults above 60 years old and older at (49%), and toddlers and adults ages 5 to 29 years old at (26%), and at a (35%) increase for African American populations. In 2020, there was a 71% increase in overweight and obesity for both men and women in the United States (Batsis, Zagaria, et al., 2020).

According to research literature conducted by WHO (2019), the United States has a low life expectancy of 1 million people. The life expectancy for individuals diagnosed as overweight or obese is improved by physicians when weight loss is equivalent to an optimal mass index of 24 kg/m² in the United States (CDC, 2020; Fitzpatrick & Hill-Brigg, 2017). The CDC (2020) identified the burden of mortality rates as higher for cardiovascular disease for women than men in the United States. During COVID-19, only 34% of African American adult women were engaged in healthy meal intake and 30 minutes of physical exercise 1 time a week from March 2019 to March 2021 in Horn Lake, MS.

Previous research studies suggest COVID-19 has upended routines associated with obesity (Hafeez et al., 2020). However, weight loss is still possible if individuals engage in physical activities three times a week to contribute to a BMI of 1-2 kg/m² (Toft et al., 2020). If diet and physical exercise is not incorporated into an individual's weekly routines, they may have a life-shortening effect because of obesity (Phillips et al., 2016).

Individuals who suffer from the risk of obesity during middle age carry the disease into older age (Hafeez et al., 2020). Continued information on obesity for African American adult women ages 20 to 45 years is essential to treat, reduce, and prevent morbidity and mortality for obese patients (West-Smith et al., 2019). Research suggests African American adult women are affected more by underlying health issues, overall physical experience, and a shorter life expectancy of obesity than any other race or national group (Rodela et al., 2020).

The Severity, Cause, and Effect of Obesity on COVID-19

The causes of obesity rising to an epidemic proportion are determined by an individual's morbidity, mortality, generational factors, environment, and socioeconomic factors (CDC, 2020). The World Health Organization [WHO] (2020) has identified the primary cause of obesity is an eating imbalance and lack of physical exercise associated with a person's mindset, habits, and behavioral choices about their health. Therefore, a better understanding of obesity is required for populations to address risk factors to meet health objectives for improved health (Copper et al., 2018). Data on obesity from 2019 to 2021 for the National Health and Nutrition Examination Survey show obese individuals' mindset detrimentally affects their health and is often the reason for overall poor health leading to obesity (Levine, 2019).

COVID-19 is a contagious disease identified in 2019, SRS-COV-2, caused by severe acute respiratory syndrome (Cuschier & Grech, 2020). The severity of the Coronavirus has caused millions of deaths around the world. COVID-19 is now a pandemic affecting many countries globally, causing 559,000 deaths and over 11,434,000

cases due to the illnesses from 2019 to 2021 (Abuelezam, 2020). The virus is spread through droplets and particles released into the air when an infected person breathes, talks, laughs, sings, coughs, or sneezes (Cuschier & Grech, 2020). The link between obesity and COVID-19 is becoming more relevant among patients (Cuschier & Grech, 2020). In the United States, 84% of patients admitted to the hospital for critical-care units for COVID-19 were overweight or obese (Abuelezam, 2020). The mortality rate was 68% among patients with a BMI>30 (Batsis, Zagaria, et al., 2020). Evidence from literature review data suggests a link to an increased risk of obesity infection is an increased severity of COVID-19 (Cuschier & Grech, 2020).

Genetics

According to Phillips et al. (2016), genetics is defined as the study of heredity and variation of inherited characteristics that deal with the way diseases and other conditions are transmitted from one generation to the next. Previous research studies have discovered several chronic diseases that show a propensity risk are associated with genetically inherited factors (Copper et al., 2018). In addition, Copper et al. (2018) confirmed that genetics play an essential part in specific behavior's susceptibility to obesity. Therefore, researchers are trying to understand why obese patients have multiple genes (Copper et al., 2018). For example, Fat Mass, Stearoyl COA Desaeurase-1 Gene, Tartrate Resistant ACID Phosphates (TRAP), and Oxyntomodulin play a significant role in COVID-19 patients becoming mild ill (Brandkvist et al., 2020).

In contrast, others become severely ill from multiple genes (Brandkvist et al., 2020). In addition, research studies identified ways physicians used behavior patterns in

genes to determine how vulnerable an individual is to obesity (Copper et al., 2018). For example, Brandkvist et al. (2020) identified obese patients with excessive eating habits, low levels of physical activity, genes, and behavior as overweight or obese based on their BMI (Phillips et al., 2016). In addition, obesity genetic traits such as BMI, antiviral immunity, and lung inflammation are associated with developing severe COVID-19 (Johnson et al., 2021).

Currently, researchers are using genetic research to understand the virus that causes COVID-19 (Guo et al., 2021). The WHO (2019) confirmed that genetically inherited factors play an essential part in obesity and COVID-19. Research has demonstrated that specific genetically inherited factors for obesity are passed down through generations (Guo et al., 2021). In addition, genetic factors for DNA polymorphisms and sequences influence the COVID-19 disease susceptibility (Johnson et al., 2021). Phillips et al. (2016) conducted a research study to demonstrate that the body reacts to diet by a person's genotype and the genes responsible for regulating energy in the body.

In addition, genetics has also been implicated as a precursor that increases genotype based on an individual's diet and environmental interaction (Brandkvist et al., 2020). Genes have been further demonstrated as being responsible for regulating energy in the body (Guo et al., 2021). For example, genes have specific responsibility for how the body is present to utilize energy (Guo et al., 2021). The gene identification reported that some gene indicators were associated with obesity and leanness (Guo et al., 2021).

An example of this would be the inherited auto recessive gene for leptin which causes a leptin deficiency (Johnson et al., 2021).

Obesity is also associated with mutations in the ghrelin and mitochondrial DNA; therefore, polymorphism genes for ADRB2, ADRB3, and GHRL can moderate weight loss in adult obese women (Johnson et al., 2021). Fitzpatrick and Hill-Briggs (2017) reported evidence that indicated an association between genetics and Type- 2 diabetes. The study examined African American patients' weight management perspectives for Type- 2 diabetes (Fitzpatrick & Hill-Briggs, 2017). Data from the survey suggested that weight gain prevention rather than weight loss should be the primary aim of lifestyle interventions for overweight and obese African Americans (Fitzpatrick & Hill-Briggs, 2017). In addition, environmental factors such as genetically regulated behaviors that influence energy intake and energy expenditures are associated with obesity (Brandkvist et al., 2020).

Although many gene variants have been pointed out and implicated in obesity, it is essential that gene interaction negatively influence weight gain (Johnson et al., 2021). Gene interaction is inherited genes that depend on the presence or absence of another gene in an individual (Guo et al., 2021). Physicians could predispose obese individuals with Type -2 diabetes to become obese by a gene variant depending on their family history and ethnicity (Brandkvist et al., 2020). For example, if a person's history of carrier behaviors lacks physical activity, unhealthy eating patterns, lack of sleep, and high amounts of sleep, they precipitate obesity (Brandkvist et al., 2020). However, they can move from the predisposition to obesity if they change diet, physical activity, lifestyle,

and environmental factors (Johnson et al., 2021). Therefore, if a person does not behave in a way that precipitates energy imbalance, they will not gain weight (Guo et al., 2021). The prevalence of gene variants, gene-obesity association, gene-environment interaction, and gene-gene interactions are variances that contribute to the genetic environment and behaviors that lead to obesity (Johnson et al., 2021).

Phillips et al. (2016) studied the perspectives of diet, physical activity, and obesity-related health in social and cultural contexts for women and their daughters living in South Africa. Findings from the study suggested that cultural norms shaped attitudes that reduced obesity through diet and physical exercise (Phillips et al., 2016). In contrast, perceived family behavior factors controlled unhealthy eating habits that demonstrated the need for community-based health awareness and educational, preventive strategies to promote physical activities and healthy diet intake to reduce morbidity and mortality for overweight and obese patients (Phillips et al., 2016).

Robinette et al. (2019) conducted a study to identify differential vulnerability to neighborhood disorder for gene-environment interaction study. The study aimed to understand neighborhood's relations to diabetes and obesity (Robinette et al., 2019). Research data collected from the study suggested that people who move out of high-poverty areas have a reduced prevalence of diabetes and extreme obesity (Robinette et al., 2019). Neighborhood poverty is well-established and associated with an increased risk of chronic cardiometabolic disease through age-related declines in cognitive and physical health (Xiang & Lu, 2019). Poverty is also uniquely associated with the heritability of Type-2 diabetes ranging from 40% to 85% of genetic risk for Type-2

diabetes and obesity (Brandkvist et al., 2020). About 26% of participants reported being obese with a BMI at or greater than 30, indicating that higher Type-2 diabetes is a perception of neighborhood disorder (Brandkvist et al., 2020). Therefore, it has been established that both individual-level and neighborhood-level factors were 90% related to the development of Type-2 diabetes and obesity among 250 participants (Brandkvist et al., 2020).

On the same note, Shi et al. (2020) studied the perceived barriers of patients with Type-2 diabetes to identify self-management strategies during recovery from COVID-19 while in isolation. The author concluded that barriers to diabetes self-management were categorized by inadequate knowledge of how patients with Type-2 diabetes are at a higher risk of COVID-19 (Shi et al., 2020). The evidence substantiates a genetic line between behavioral beliefs and the impact of obesity and COVID-19 (Guo et al., 2021). The study examined the shortage of resources, such as limited access to healthcare facilities (Shi et al., 2020). Health problems increase to obesity, the risk of being infected with COVID-19, little education, financial barriers, negative emotions, and lack of family support and motivation for change result in an individual becoming obese and infected with the virus related to the human genome (Xiang & Lu, 2019). This article showed an in-depth understanding of feelings, beliefs, and experiences of how obesity causes Type-2 diabetes, and obesity prevalence is 3 to 9 times greater in families with obese family members for overall populations (Shi et al., 2020). Finally, data from these heritability studies also indicated a 53% - 81% genetic link between obesity and COVID-19

identified intervention and formulation of medical isolation policies for patients with Type-2 diabetes (Guo et al., 2021).

Environment

Shut-in place restrictions and stay-at-home government orders for physical environments such as homes, schools, and communities are additional factors that comprise the obesity epidemic to prevent the spread of COVID-19 (Cloud et al., 2020). Precaution and modified operations placed on public health restrictions for outdoor activities were mandated and implemented to reduce the spread of the COVID-19 virus has increased the obesity epidemic (Cloud et al., 2020). Biqing et al. (2020) conducted research using a computer model using real-time high-fidelity simulation of a virus-filled cough released in the air during outdoor activities of an infected COVID-19 patient. Respiratory droplets from the person's cough released in the air contained infectious particles that spread the COVID-19 virus to others (Biqing et al., 2020). The study determined that SARS-COV-2 has easily spread in the air from an infected person and weather temperatures at 5 to 15º C or relative humidity at 70% to 80% (Biqing et al., 2020). Therefore, close contact with people within the environment increases the risk of being exposed to someone infected with the virus that causes COVID-19 (Biqing et al., 2020). Low to moderate risk outdoor activities such as walking, running, and rollerblading are strategies individuals can participate in as virtual outdoor fitness classes while wearing masks and maintaining a social distance of at least 6 feet from one another (Cloud et al., 2020).

People are working from home and schools due to shut-in restrictions for the COVID-19 Pandemic (Cloud et al., 2020). Adult college students complete virtual school at home during the COVID-19 Pandemic to reduce the risk of becoming infected with the virus (Cloud et al., 2020). Therefore, they eat unhealthy foods and junk foods throughout the day, causing weight gain (Williams-Bradford & Grier, 2019). According to Williams-Bradford and Grier (2019), dietary restriction and food well-being (FWB) approach to transition to healthier eating patterns. The study identified that food socialization and food literacy transformed their relationship with food (Williams-Bradford & Grier, 2019).

African American Culture

Culture is defined by perceptions, values, health care, education, and families in response to community engagement (Warren et al., 2018). To understand how cultural factor's influence obesity, one must know how practice, perception, and beliefs explain ethnic differences in obesity and COVID-19 health outcomes (Cameron et al., 2018). In addition, the cultural background may influence obesity on individual health behaviors related to attitudes (Cameron et al., 2018). For example, research suggests that cultural views in South African communities show a strong correlation between household income and obesity (Florez et al., 2018). In the United States, culture is a set of rules learned by sharing experiences between a specific group of people (Warren et al., 2018). Often, the same people who share the same culture share the same values and life experiences within their communities (Florez et al., 2018). For example, immigrants from one country migrate to another country and eat unhealthy foods familiar to them

(Cameron et al., 2018). Although those foods are harmful to people, they may be comfortable and eaten in excessive quantities (Cameron et al., 2018).

To build on cultural factors, Florez et al. (2018) researched the power of social networks and social support in promoting physical activity and BMI among African American adult men and women. The authors concluded that physical activity engagement for weight among African American adult women is crucial to maintaining energy balance to maintain a healthy weight (Florez et al., 2018). In addition, previously mentioned research found that social isolation was associated with less physical activity, and social network was associated with more physical activity. The social network was associated with more physical activity, and the social network was associated with more physical activity among African American adult women (Florez et al., 2018).

Social support and social networking are essential aspects of a social environment to promote and manage physical activity for weight loss (Florez et al., 2018). Significantly, 68.4% of African American adult women suffer from obesity. Therefore, culture strongly influences your weight and health through eating and lifestyle habits (Warren et al., 2018). Although there are ethnic differences concerning weight gain, this study proved that African American people with higher incomes also had low-quality diets (Florez et al., 2018).

According to Ozodiegwu et al. (2019), culturally, Sub-Saharan African women are expected to be overweight or obese due to unhealthy food choices among women and adolescent girls. In Sub-Saharan Africa, the overweight prevalence of adult women increased by 24% to 39% from 1980 to 2018 (Ozodiegwu, 2019). On the other hand,

obesity prevalence increased by 12% to 15% for adult women (Ozodiegwu, 2019). For instance, evidence from the study suggested that 80% of obese adolescents remain obese in adulthood and 70% after age 30 (Ozodiegwu, 2019). In a qualitative research synthesis approach, cultural expectations for overweight adult women were desirable because community members viewed women with large and voluptuous bodies as attractive (Cameron et al., 2018). Being overweight was linked to high blood pressure and diabetes because of purchased sugar-sweetened drinks and fast foods (Ozodiegwu, 2019). Being overweight or obese was acceptable due to a lack of facilities, and the financial ability to join a gym was identified as a barrier to physical activity (Cameron et al., 2018). In general, physical activity was viewed as the domain of younger girls by peers and authority figures, response to physical activity with health risks (Cameron et al., 2018). Finally, results from the study provided insights for appropriate obesity preventive interventional strategies to address barriers such as time, lack of knowledge, safety, and lack of recreational opportunities to engage in recreational physical activity (Ozodiegwu, 2019).

Socioeconomic Status (SES)

Existing research strongly suggests socioeconomic patterns of obesity determine social mobility while revealing several factors of an individual's health to explain why obesity remains a significant public health problem (WHO, 2019). Cameron et al. (2018) reported that African American adult women's perceptions of causes of obesity and unhealthy lifestyle are associated with Socioeconomic Status (SES). Conversely, Paniagua et al. (2019) also asserted that Salemonsen et al. (2020) argued that low-

socioeconomic income for African American adult women perceived obesity as a heritage caused by family genes and early stressful life experiences, responsibilities, and events. Thus, the perceptions of the causes of obesity for African American adult women from middle-income settings vary by genes, socioeconomic patterns, and nutritional status based on family traditions (Paniagua et al., 2019). Nevertheless, African American adult women with high incomes emphasized unhealthy diets on obesity development (Cameron et al., 2018). Therefore, despite the growing recognition of obesity as a public health challenge, (SES) influences a person's risk of developing obesity (Paniagua et al., 2019). To provide a positive outlook to obese patients, their mental, social, physical, and economic habits must be shifted from a negative mindset of poor health conditions to a positive attitude (Salemonsen et al., 2020).

According to Cameron et al. (2018), low income significantly correlated with a high prevalence of obesity due to a lack of resources. Therefore, despite the growing recognition of obesity as a public health challenge, (SES) influences a person's risk of developing obesity-related SES factors such as age, gender, and ethnicity (Cameron et al., 2018). For example, the authors noted that impoverished people with low levels of education have poor health, affected by cost and the availability of food (Paniagua et al., 2019). Healthy, high-quality foods in richer countries cost a significant amount of money compared to unhealthy foods. Paniagua et al. (2019) demonstrated how high foods such as fruits and vegetables were associated with higher costs. The study explained that people who lived below the poverty line predominantly purchased and consumed many low-quality foods while those who enjoyed abundant financial resources purchased and

consumed more fruits and vegetables (Cameron et al., 2018). Cameron et al. (2018) suggested that African Americans who grew up in poverty have an influential association with obesity. This study was also associated with educational level because people with low-socioeconomic circumstances tend to have less education (Cameron et al., 2018). Cameron et al. (2018) retrieved data findings for this study from the American Journal of Public Health, which demonstrated that low SES was associated with obesity for African American women (Cameron et al., 2018).

Lower SES is associated with links to obesity through distress and emotional eating resulting in higher BMI (Paniagua et al., 2019). According to Cameron et al. (2018), a recent Theoretical Model identified increases in psychological distress promoted maladaptive coping behaviors. Those behaviors lead to emotional eating and obesity in patients (Cameron et al., 2018). A total of 170 African American adult women aged 20 to 65 years old reported that their income and educational levels were indicators of their SES, resulting in psychological distress and an emotional eating disorder (Paniagua et al., 2019). The authors concluded that the relationship between SES and obesity is explained through psychological distress, and emotional eating is a coping behavior responsible for increasing obesity in low-income populations (Paniagua et al., 2019).

Obesity and COVID-19 Economic Cost

This research study will also address the economic cost of obesity for African American adult women 20 years old and above in the United States (WHO, 2019). Compared to women with average weight, the medical costs for African American obese

women were $2,238 more (Burton et al., 2020). Social and economic factors are key factors to consider when adjusting the financial cost of obesity and COVID-19 regarding morbidity, mortality, and life expectancy (Toft et al., 2020). Morbidity highlights the rate of disease and illnesses associated with overweight and obesity per 1,000 people in a population (Toft et al., 2020). Mortality represents the rate of deaths per 1,000 people within a given population (Toft et al., 2020). Finally, life expectancy may be defined as the average birth year a person is expected to live compared to age-specific death rates (Phillips et al., 2016). However, mortality cost is an estimated cost used to calculate the adjusted quality of life (Jakobsson et al., 2020). A study in France found that people hospitalized in critical care with COVID-19 were 2.91 times more likely to be obese than the general public (Burton et al., 2020). Obesity is a complex disease that takes months and, in some cases, a year to develop (Copper et al., 2018). Therefore, some individuals have potentially seen weight among adults and children while in solitary confinement due to the COVID-19 disease (Jakobsson et al., 2020). Lifestyle changes in diet will likely change due to lockdown measures, self-isolation, and quarantine to reduce and prevent COVID-19 (Copper et al., 2018).

Recommendations from previous literature reviews suggest that factors, solutions, and preventive measures associated with obesity are a problem that can be reduced by physicians (Toft et al., 2020). Researchers created strategies for a healthy diet plan, and physical activity strategies promoted healthy lifestyle choices (Phillips et al., 2016). Research evidence suggests that obesity may be a risk factor for severe outcomes and complications of the COVID-19 disease for international populations and populations in

the United States (WHO, 2020). For instance, the CDC reported that 53% of people in the United States and 61% of people internationally were obese when hospitalized with COVID-19 (WHO, 2020). In 2019, the National Health Expenditure Account (NHEA) reported that annual obesity inpatient, non-patient, and prescription drug spending was over an estimated 1.5 billion dollars (Burton et al., 2020). According to Burton et al. (2020), the United States spent $169 billion on health care costs for obese patients suffering from symptoms of COVID-19 (Burton et al., 2020). In 2020, the National Health Expenditures Account (NHEA) reported that $184.5 billion was spent annually on obese patients with COVID-19 in living care facilities and senior homes (Batsis, Dokko, et al., 2020).

Obese African American Females in Horn Lake, MS

Research has shown that African American females are at an increased obesity rate requiring additional research to address a public health epidemic (Shi et al., 2020). In addition, female rates of overweight and obesity continuously show a 25% health risk of arthritis and autoimmune disease (Shi et al., 2020). In Horn Lake, MS, obesity has reached an epidemic level for African American women (WHO, 2020). Public health faces many challenges in educating and addressing the disease's ongoing concerns for preventive strategies to reduce and prevent obesity (WHO, 2020).

DeSoto County is the county for Horn Lake, MS, and it has experienced a significant increase in overweight and obesity since 2019 (WHO, 2019; 2020). In 2020, the government of Horn Lake, MS, mandated solitary lockdown due to COVID-19 (WHO, 2020). Currently, 24.7% of African American adult women in Horn Lake, MS,

are overweight, and 50% are obese (WHO, 2019). Therefore, in the DeSoto County Health Department in Southaven, MS, health professionals routinely measure (BMI) and counsel patients on critically crucial healthy eating habits and physical activity (WHO, 2019).

Table 2

DeSoto County Health Statistics Percentages on Overweight, Obesity, and Physical Activity (2019-2020)

BMI	DeSoto	Southaven	U.S.
Overweight	24.7%	21%	45%
Obesity	50%	34%	75%
Physical activity	25%	42%	67%

Obesity is a multifactorial disease that requires a complex process for weight loss (Phillips et al., 2016). Also, obesity involves social, behavioral, cultural, and physiological genetic factors (Hafeez et al., 2020). Improving the physical and emotional aspects of obesity requires weight loss goals and a healthy lifestyle (Toft et al., 2020). Significantly, morbidity and mortality are associated more with obesity than average body weight (Jakobsson et al., 2020). Therefore, the practical guidelines for nutrition and exercise behavior maintenance demand identifying, evaluating, and treating overweight and obesity for adult self-gratification (Salemonsen et al., 2020). A medical provider can provide a two-step process for managing and accessing obese patients' treatment for weight loss and strategies to keep the weight off patients (Salemonsen et al., 2020). Management involves the maintenance process of weight loss through increased physical

activity of 30 to 45 minutes, 3-5 times per week (Toft et al., 2020). Assessment involves the degree of obesity recommended to reduce body weight to prevent the disease (Rodela et al., 2020). Evidence provided by Rodela et al. (2020) suggested that significant weight loss is a loss of 8% body fat within a year. A physician guide chart provides dietary therapy strategies, increased physical activity, and behavioral therapy (Phillips et al., 2016).

Dietary therapy instructs female patients to decrease their low-caloric intake by diet modification containing 1,000-1,200 kcal per day (Jakobsson et al., 2020). Therapies used intense treatment plans to increase physical activity using an extended length of treatment (Toft et al., 2020). Behavioral therapy provides techniques for overcoming barriers that predict dietary treatment or physical activity that encourage higher weight loss (Phillips et al., 2016). Batsis, Dokko, et al. (2020) used a systematic review to implement a successful weight loss program for six months using continuous maintenance. The research team suggested a weight loss program evolving around the enhanced motivation to prevent weight regain (Copper et al., 2018). Meal plans were one of the most successful weight loss and weight management strategies used to allow individuals awareness of their current status and hold them accountable for weight regained during the maintenance process (Belanger et al., 2020).

Coaching is an essential requirement to address weight loss maintenance barriers using individual feedback from semi-structured interviews and questionnaires (Salemonsen et al., 2020). Belanger et al. (2020) identified fifteen African American volunteer participants taking part in a weight-loss study that included weekly dietary

nutrition interventions led by a registered dietitian to access high-quality, nutritious food (Salemonsen et al., 2020). The authors also used open-ended questionnaires addressing ten questions about weight loss, weight management, barriers, and implementation strategies for reducing, preventing, and treating obesity (Brown et al., 2021). Weekly dietician sessions helped researchers report impediments such as self-control and lack of self-motivation during meal intakes (Belanger et al., 2020). This study aimed to find barriers to weight loss and healthy meals for families to prepare during COVD-19 lockdown (Belanger et al., 2020). Barriers to this research study included lack of education about healthy food habits, health problems, lack of self-control, lack of self-motivation, increased prices to implement meals, lack of social relations, and lack of physical activity (Phillips et al., 2016).

Dietary Meal Replacement Programs

Dietary meal intake at six months in consumption is evaluated by energy (kcal/day), fat (% kcal), fiber (g/1000 kcal), and vegetable (serving/day) (Jakobsson et al., 2020). According to WHO (2020), changes in shopping patterns for food prices for fruits and vegetables impacted diets during COVID-19 because food prices increased worldwide due to food shortages. In addition, individuals with access to financial economics purchased more foods than needed monthly for their household (Brown et al., 2021). As a result, they were stockpiling, which led to significant increases in diet intake because of calories consumed, which resulted in overweight or obesity in the United States (Batsis, Zagaria, et al., 2020). The severity of COVID-19 associated illness in people diagnosed as obese explained the pandemic's disproportion for poverty, lack of

access to healthy food, lack of health insurance, and poor indoor and outdoor exercise opportunities.

Some overweight and obese patients are combating obesity through weight management programs (Toft et al., 2020). Weight management programs are for managing a lifelong commitment to a healthy lifestyle change (Salemonsen et al., 2020). Dietary meal programs help create sustainable and enjoyable eating patterns by providing nutritious meal options (Salemonsen et al., 2020). Result emphasis is placed on a diet with food provision and physical activity to improve weight loss success (Jakobsson et al., 2020). Drinking water with a pH scale of 7.1 to 14.0 is alkaline, which may help suppress an individual's appetite and not consume as many calories (Jakobsson et al., 2020). Meal replacement is successful because it increases calorie estimation accuracy to improve grocery store purchases and formula preparation at home (Belanger et al., 2020). In addition, meal preparation helps individuals who have difficulty achieving weight loss adequate to control multiple illnesses such as Type-2 diabetes associated with obesity (Shi et al., 2020).

A research study used 70 obese participants randomly assigned to two groups, a meal plan and an iso-caloric food-based program (Belanger et al., 2020). Studies revealed that participants had an active weight-loss period ranging from 1 hour to five weeks to a 25-week maintenance period (Shi et al., 2020). At the end of 17 weeks, participants lost 90% of meal placement, which resulted in > 6% of body weight. Significant weight loss resulted from 5% of body weight loss in a year (WHO, 2019). At the same time, the body

fat percentage is a significant difference between groups with a 15.5% reduction in meal replacement and only a 3.2% food-based reduction (Phillips et al., 2016).

Prevention and Intervention

Obesity prevention requires lifestyle intervention, including reducing caloric intake (Nieman & Wentz, 2019). In addition, an increase in physical activity effectively decreases adipose tissue mass to reduce cardio-metabolic diseases in communities and families (Batsis, Dokka, et al., 2020). Prevention results from all efforts put forth in the research study to identify crucial elements to address obesity (Phillips et al., 2016). African American adult women in Horn Lake, MS ages 20 to 45, associate overweight and obesity with economic instability (CDC, 2020). Previous research, such as The National Preventive Strategies for overweight and obesity, focused on the causes of obesity during COVID-19 solitary confinement and whether the effects of obesity create preventive methods for overweight and obesity (Brown et al., 2021). The three most common weight-loss strategies for African American adult women in the United States are reducing calories consuming less fat, exercising, or increasing physical activity (Toft et al., 2020).

Preventive care strategies are necessary to educate borderline individuals about becoming obese (Toft et al., 2020). The Centers for Disease Control and Prevention developed a generational scale to highlight ways individuals can prohibit obesity by facilitating a healthy and safe community environment (CDC, 2020). There are three health departments for DeSoto County, Southaven, Hernando, and Olive Branch, MS (WHO, 2020). There are also 16 clinics in Southaven, Horn Lake, Hernando, and Olive

Branch, MS (WHO, 2020). The clinics' research information proved to the CDC and WHO helped the researcher identify health disparities to reduce, treat, and prevent obesity for children and adults (WHO, 2019; 2020).

For this reason, community involvement is a comprehensive tool used to develop preventive methods for obesity deterrence during and after the COVID-19 disease (Brown et al., 2021). An individual's health is thought of as merely a segment of the community's overall health based on their beliefs, attitudes, and behaviors about obesity (Copper et al., 2018). Conclusively, stakeholder engagement enhances partnerships formed in communities to effectively create awareness of strategic management's health issues on a federal, state, and community level (Salemonsen et al., 2020). In addition, prevention strategies are essential in identifying what has detrimentally affected a population to determine how lack has caused individuals to suffer from the disease (Jakobsson et al., 2020).

For my research study, a theoretical framework will be used to understand participants' experiences exploring the general environment of food, physical activity, and health and nutrition during COVID-19. I used a theoretical framework to guide the development and delivery of the intervention using the (TTM) (Alulis, 2017). The TTM constructs focused on the stages of change, self-efficacy, decision balance, and change process for patients not ready to self-manage Type-2 diabetes (Maher et al., 2018; Phillips et al., 2016). In addition, the model focuses on changing behavior through the motivation of individuals who changed and currently maintain behavioral changes (Batsis, Dokko, et al., 2020). This framework supported weight loss for food and physical

activity maintenance during a six-month weight loss intervention conducted from semi-structured interviews (Maher et al., 2018).

Participants will meet weekly to learn behavioral strategies to help with weight loss and weight maintenance (Salemonsen et al., 2020). The 6-month weight loss goal is for the participant to lose 8% of initial body weight (Toft et al., 2020). The intervention is projected to be successful at six months for participants ages 20 to 45 with at least 5% baseline weight and a 25% reduction in hypertension (Batsis, Zagaria, et al., 2020). Also, systolic blood pressure is expected to fall to 1.05-1.09 mmHg, for diastolic blood pressure and 0.93-0.99 mmHg when experiencing weight loss, resulting in a reduction of 19% or less than 22% (Copper et al., 2018). The weight loss maintenance intervention will focus on participants' attitude-behavior changes to identify significant correlations between the maintenance and weight loss phases (Batsis, Dokko, et al., 2020).

Gaps in the Research Literature

Several research studies have shown individual weight loss and nutrition programs that relate to the constructs of interest and methods that are consistent with the scope of my study (Batsis, Dokko, et al., 2020). However, several research studies have failed to identify and report the gap in the research (Shi et al., 2020). For example, meal replacement and health coaching have significantly impacted weight loss in the United Stated (Batsis, Dokko, et al., 2020).

However, there are still barriers to addressing how meal replacement and health coaching are successful when combined to reduce obesity (Brown et al., 2021). Therefore, the researcher's strengths are determining the barriers and facilitators

individuals face when participating in a nutritional and physical exercise program by implementing both components (Brown et al., 2021). Weaknesses: Researchers require additional research to explain how nutritious food and physical exercise work together to address barriers when implementing strategic health plans (Copper et al., 2018). Also, there is a lack of research describing ways health coaches impact weight loss and meal replacement programs (Copper et al., 2018).

The United States obesity epidemic continues to increase as individuals remain in solitary confinement during the COVID-19 Pandemic because of the Mississippi governor's extended mandated laws (Groeniger et al., 2021; Jakobsson et al., 2020). This study will fill in research gaps by monitoring participants' weight through knowledge gained from a questionnaire to implement weight–loss strategies (Toft et al., 2020). The study's primary goal is to understand critical aspects of weight loss processes to transform individuals to contribute to long-term nutrition and weight-loss success (Shi et al., 2020). In addition, this study will provide valuable education awareness to populations about dietary meal replacement and weight loss to prevent obesity and allow people to maintain a healthy lifestyle (Toft et al., 2020).

Future Research

There is a gap in the literature on information that impacts self-management of nutrition and exercise to reduce and prevent obesity and the COVID-19 virus (Jakobsson et al., 2020). Obesity-related morbidity and mortality continue to rise for shut-in place restrictions during the COVID-19 pandemic (CDC, 2020). Future research is suggested to assist the public health community discover more effective prevention strategies to

combat the obesity epidemic in the United States (Nieman & Wentz, 2019). The RQs in this qualitative study design will use a phenomena approach to address semi-structured interviews. Although researchers have investigated this issue, there is still no literature on how nutrition and physical exercise prevention strategies for adults reduce obesity during the COVID-19 Pandemic lockdown in Horn Lake, MS (WHO, 2020). According to Maher et al. (2018), future research will address awareness advice on obesity and its impact on COVID-19.

Furthermore, the prevention of obesity using nutrition and physical exercise is a primary method to fight against the COVID-19 Pandemic (Cameron et al., 2018). By filling this gap, public health professionals will be better prepared to address potential barriers and challenges of obesity to reduce the number of deaths among COVID-19 patients who are obese (Belanger et al., 2020). Information about obesity and COVID-19 can be translated into action to prevent the spread of the virus and combat obesity in the African American population (Burton et al., 2020). Therefore, I will be able to impact positive social change on obesity and the COVID-19 virus in Horn Lake, MS (WHO, 2020). Policymakers can benefit from providing essential information through the decision-making and planning process for African American adult women diagnosed with obesity (Burton et al., 2020).

Nevertheless, African American adults diagnosed as overweight or obese are provided self-care and implemented preventive strategies to improve their overall health and well-being during the pandemic (Belanger et al., 2020). Finally, this study is critical because decreasing obesity rates will also decrease the mortality rates of COVID-19 for

obese populations (WHO, 2020). In addition, reducing the burden of obesity and the COVID-19 virus can reduce the current economic healthcare cost of spending on both the disease and the virus in Horn Lake, MS (WHO, 2019).

Summary and Conclusion

Research has shown that obesity is a generational disease and disorder that affects African American women ages 20 years old and above in Horn Lake, MS (WHO, 2020). Historically significant themes in the literature review findings on obesity are an epidemic resulting in several health conditions such as inadequate physical activity, poor eating habits, and attitudes and behaviors (Brown et al., 2021). External factors, such as environmental, societal, and genetic, known as internal factors, increase an individual's propensity to become obese (Hafeez et al., 2020). External and internal elements are dependent processes that may cause an individual to exhibit behavioral changes in attitudes, perceptions, and behaviors regarding obesity (Rodela et al., 2020).

Preventive measures for behavioral change are critical in addressing the obesity gap to decrease the high risks of heart disease, stroke, and other health conditions to impact life quality. In addition, attitude plays an essential role in reducing obesity (Hafeez et al., 2020). Education awareness is a critical indicator of why African American adult women ages 20 years old and above should understand how critical factors such as age, ethnicity, and socio-demographics relate to overweight and obesity (Toft et al., 2020).

A clear perception of obesity for African American women lacks information linked to the same age range and gender-oriented factors to understand the cause behind

obesity (Hafeez et al., 2020). Future research studies will address social change by building upon facilitators to address barriers to improving nutrition and weight loss strategies (Fitzpatrick & Hill-Briggs, 2017). This research study seeks to bridge the gap between overweight and obesity to reduce the increasing prevalence of obesity for African American adults in Horn Lake, MS (CDC, 2020; WHO, 2020). Successful weight loss strategies are established, but most programs do not remain permanent lifestyle changes (Jakobsson et al., 2020). This study will prove that weight-loss strategies successfully implement meal plan guides to help individuals stay on track to reduce, treat, and prevent obesity during the COVID-19 Pandemic (Batsis, Dokko, et al., 2020).

Chapter 3: Research Method

Introduction

In this chapter, I describe the research design and approach, study concept, rationale, and viewpoints of the researcher based on the participant's lived experiences. Data resources, data collection, and data analysis procedures are described, and the reliability and validity of the data are also discussed in this chapter. Using the phenomenological approach, I explored the lived experiences of participants' nutritional and exercise strategies to reduce obesity during the COVID-19 pandemic through the perspective of African American adult women in Horn Lake, MS. Information usage policies and the most appropriate research methods are also described in this chapter.

Purpose of the Study

This qualitative study aimed to explore nutritional and physical exercise strategies to reduce obesity for African American women during isolation of COVID-19. On January 1, 2020, the World Health Organization (WHO) activated an emergency response framework to address the COVID-19 pandemic that impacted human health and welfare globally. Obesity and COVID-19 have increased in epidemic proportions at alarming rates (Cuschier & Grech, 2020). Based on the patient’s body weight, more information on obesity and overweight patients from studies has been used to assess possible risks and outcomes associated with COVID-19 (Abuelezam, 2020). I planned to create prevention and intervention strategies to curb the obesity problem in public health.

Methods

Research Design and Approach

This qualitative study was conducted as part of a phenomenology approach to explore nutritional and physical exercise prevention strategies to reduce obesity during the COVID-19 pandemic. I also focused on interventions that integrated various stakeholders, clinicians, and community leaders' perceptions of obesity and COVID-19 in African American adult women. The study consisted of semi structured face-to-face and telephone interviews with adult women ages 20 to 45 whose BMI was ≥ 30 kg/m^2. Additional semi structured face-to-face and telephone interviews were conducted for participants of the African American populations at the DeSoto County Health Department to verify and confirm answers received from their online questionnaires. All interviews were conducted at the DeSoto County Health Department in Horn Lake, MS, with a geographic area exceeding 27,454 thousand people.

The phenomenon approach was the most appropriate strategy for this study because I sought to explore experiences using phenomenology to describe the lived experiences (descriptive) or the meaning of participants' lived experiences (interpretive). The planning approach consisted of content analysis, analysis of existing research, and historical-comparative data analysis to examine the relationship among six identifiable obesity factors, including genetics, metabolism, behavior, environment, culture, and (SES) in the United States.

Sampling and Recruitment

Upon approval by the Institutional Review Board (IRB), my role as observer and observer-participant was to post flyers for individuals interested in the research study throughout the DeSoto County Health Department in Southaven, MS. I invited the designated target location for potential participants. Secondly, I used a purposive and snowball sampling approach to capture the opinions of potential participants for the study's intent. Thirdly, obese African American adult women participants were self-identified through Health Department volunteer recruitment via study flyer advertisements. I conducted research sampling within the DeSoto County Health Department to prevent sample bias. I also conducted open-ended questionnaires and submitted them through personal emails for qualified participants to complete for data collection. The questionnaire asked about risk factors linked to weight gain during COVID-19 because of a lack of nutrition and physical exercise.

Study Participants

The target population for this study was African American adult women residing in Horn Lake, MS. Maher et al. (2018) argued that a qualitative study tends to be smaller in number than a quantitative study. Therefore, this qualitative study required a minimum sample size of 16 participants to reach data saturation. I focused on insights about obesity experiences in three different stakeholder groups. Those groups consisted of rural, community-dwelling for older African American adults and clinicians for community leaders, using an approach that enhanced credibility via the triangulation of lived perspectives of obese patients. I conducted 15semistructured face-to-face and telephone

interviews with obese African American adult women ages 20 to 45 who had encountered experiences with obesity and COVID-19 during the COVID-19 pandemic. The remaining samples were gathered through snowball sampling within the Community Health Departments in DeSoto County. Approximately 50% of African American adult women had the highest prevalence of obesity and COVID-19 in rural areas of the South, including Alabama, Arkansas, Kentucky, Louisiana, Mississippi, South Carolina, and Tennessee, resulting in a total of *(*N=21) participants. Upon receiving approval from the IRB to conduct my research study, individuals who qualified for inclusion were evaluated to participate in the research study in a locked and secure room with space for data collection provided by the organization. A small sample size reduces the risk of an increased margin of error. Therefore, if I had a sample size that was too small, I planned to recruit more participants by extending the survey window or considering widening the population with IRB approval.

Inclusion and Exclusion Criteria

Inclusion criteria for the study consisted of:

- English Language
- A sample population of African American obese females 20 to 45 years old.
- Participants residing in Horn Lake, MS, during the study period.
- Participant's tested Positive for the COVID-19 virus.

- Participants previously participated in a weight loss intervention on physical activity such as No Load Restriction Training (NLRT) and Blood Flow Restriction (BFR) interventions (Salemonsen et al., 2020).

Exclusion criteria for the study consisted of:

- Any language other than English.
- Prior weight loss surgery administrated to African American adult women 20 years and older.
- Obese patients who have not experienced the COVID-19 virus.

Informed Consent

All participants were required through (IRB approval#01-25-22-0423552) to give verbal consent to participate in the research study. As the primary researcher, I provided participants with a consent form via email, which indicated approval and an approval number from the (IRB) for the study. A formal introduction was made, informing participants that the study was voluntary and could withdraw at any given time. Participants were also notified that I planned to use an audio recorder during the 60 to 90-minute interview for the data collection for practical analysis. Upon receiving acknowledgment and approval of the consent form, I provided interview questions via email to participants for the data collection on demographic data, including age, race, gender, marital status, education, income, and calculated BMI for height and weight. All conducted data will be kept safe with a security password and strictly confidential.

Interview Content

Participants were asked to share their lived experiences, thoughts, beliefs, and perceptions of their personal experiences with obesity and COVID-19. The interview questionnaire was developed based on knowledge, perceptions, daily activities, meal intake, and beliefs. I asked RQs to capture individuals' views on whether obesity is a disease, a treatable condition, a significant risk factor for the COVID-19 virus, or solitary confinement, identified as a significant reason contributing to an inclined rise in obesity.

Interviews

After obtaining informed consent from participants via email with the words "I conducted semi-structured interviews after business hours at the Mississippi State Health Department in Southaven, MS. Individual semi structured interviews lasted 60 to 90 minutes in length to allow flexibility and probing. Participants received reminder emails the day before their scheduled interview. Participants were also informed that their information and identities would be kept confidential. Each participant was provided an interviewee code for data sources to maintain confidentiality. The research study was voluntary. Therefore, a participant could exit the study at any time.

The purpose of the RQs was to ask a range of gaining, wellness, and fitness questions to develop obesity prevention strategies to reduce, treat, and prevent obesity. I designed an interview guide based on an intensive preventive obesity intervention literature review. The purpose of the interview questions was to identify significant research gaps that could address barriers and challenges to obesity, creating solutions for

healthy living for African American adult women (20 to 45 years old) living with obesity during the COVID-19 pandemic Horn Lake, MS.

Data Sources

Data used in this study were nationwide archival data from the Behavioral Risk Factor Surveillance System (BRFSS), examined by the Mississippi State Department of Health, the U.S. Census Bureau (2020), and the CDC (2020). The BRFSS consists of ongoing surveillance methods collected through the joint effort of the United States, territories, and the CDC to measure behavioral risk factors (CDC, 2020). I also collected primary data from participants at the Health Department in Southaven, MS, and secondary data on obesity and COVID-19 from the WHO (2020) for Mississippi. Similarly, the U.S. Census Bureau (2020) provides essential data on the U.S. population by investigating obesity and regional trends. Lastly, the CDC (2020) has relevant information about the SES, culture, food environment, and physical activity in various regions of the United States published in the last five years. These data sources provided a comprehensive background for my research study. My goal was that the structure of these data sources would prove helpful for this study because the data included responses from adults diagnosed as obese who lived in Horn Lake, MS. I used interview question guides to explore participant's lived experiences with nutrition and physical exercise to create prevention strategies to reduce obesity during the COVID-19 pandemic lockdown.

Procedures

Geographical obesity and COVID-19 trends and factor procedures are available (CDC, 2020). In 2019, the CDC extracted data from the U.S. Census on morbidity and

mortality rates (CDC, 2020). Reports to examine the morbidity and mortality rate increased for COVID-19 (CDC, 2020). In 2021, primary data were electronically accessed for data collection through the BRFSS and the U.S. Census Bureau to identify obesity factors and their association with COVID-19 (WHO, 2019). All procedures were adhered to by public sites to use data collected and made available for public use.

I provided written research materials for submission to IRB for approval. The CDC (2020) data included geographical, cultural diets, and physical activity prevention strategies. The data consisted of regional breakdowns in each state related to cultural diets and physical activity in the United States. The data were solely used to provide insightful information on preventive nutrition and physical exercise strategies to combat the challenges of obesity for African American populations during solitary confinement lockdown in connection with COVID-19. Preliminary data from the CDC (2020) suggested that obesity worsens outcomes from the COVID-19 virus. Thus, African American adult women overweight or obese are at an increased risk for worsening outcomes from the COVID-19 virus (Ozodiegwu et al., 2019).

According to the WHO (2020), obesity and the COVID-19 epidemic have great importance in all areas of the United States. All data were collected, scrutinized, compared, and correlated by me in the same manner until all aspects had been correlated, examined, and reported to the database. These correlation procedures allowed the study to emerge, yielding comprehensive information regarding geographical significance in obesity prevalence trends among African American adult women. I applied appropriate stratification methods to abstract the most factual and relevant data from participants to

support the research goals. Thus, every effort was made to use the most recent information to serve as a basis for research on current obesity prevalence trends.

Instrumentation

The data collection instrument and sources included field notes, observations written in a diary, interviews with open-ended questionnaires, triangulations of member-checking techniques, and transcripts using codes, categories, and audio recordings. I published the video field notes to gather data on the association between obesity and COVID-19. After collecting and coding data, I trained nutritionists to evaluate data collected from the research study at the DeSoto County Health Department in Southaven, MS. I created QRs from previous research topics to answer the gaps in the study. The questionnaire contained sociodemographic questions, including sex, age, education, and marital status. The interview questionnaires guided me to obtain information on the participant's lived experiences to answer the study's RQs on healthy eating and physical activity. Face-to-face observational aspects of data collection entailed field notes and memos on participants' behavior and physical activity. I also conducted 60 to 90-minute telephone interviews in a few instances where the participant's pertinent information was needed to clarify previously interviewed participant's responses.

Demographics

Demographics for the African American population in the United States are collected through public health surveillance consisting of the BRFSS, U.S. Census Bureau, and National Notifiable Disease Surveillance System. According to the Horn Lake Health Department data, there are no culture-specific issues with the African

American population in Horn Lake, MS, addressing the obesity epidemic during the COVID-19 pandemic due to increased obesity. Public health surveillance is a continuous improvement process that involves essential planning and evaluation of data collection, analysis, and interpretation (Klingler et al., 2017). It is also the impact of an intervention or tracking process towards specific goals to monitor and clarify epidemiology health problems (Klingler et al., 2017). Finally, public health surveillance is essential to allow priorities to be set and inform public health policy and strategies (Klingler et al., 2017).

To make state-to-state and regional comparisons, stakeholders can use data from the above surveys and data sources. Currently, the BRFSS is considered the nation's premier ongoing telephone health survey system for tracking in all 50 states, including Puerto Rico and the District of Columbia health systems, for health-related telephone surveys that collect data for the U.S. population (WHO, 2019). This survey information system can provide essential data regarding health-related risk behaviors and chronic health conditions such as obesity, COVID-19, and COVID-19 related health factors for preventive services (Kumar et al., 2021). The National Health Initiative is a valuable component of the U.S. Census Report used by the nation's government to tackle the most pressing health problems (CDC, 2020). It provides a host of information used for action planning to collect essential data analysis relating to the U.S. population to implement intervention initiatives to improve population health (CDC, 2020). Also, the databases are reliable, credible, transferable, dependable, and confirmable resources used to evaluate resource findings, which can be part of other data collection methods (Pour & Chamkhani, 2018).

The National Notifiable Disease Surveillance System (NNDSS) assists the CDC in monitoring, controlling, and preventing over 125 diseases in local communities through local and state public health departments (CDC, 2019). The NNDSS supports nations in response to the unprecedented threat of obesity and its association with COVID-19 from 2019 to 2021 (CDC, 2019). The NNDS ensures data from the reaction of obesity and COVID-19 is sent to the Center for Disease Control and Prevention to understand better, track, and respond to the pandemic to improve national surveillance (Klingler et al., 2017).

The RQs about obesity as a health risk stems from eating patterns from depression, not getting outside to exercise, isolation, culture, and behavior (Antes et al., 2018). As a source for historical and regional data, the CDC has classified nutrition and exercise to provide valuable and pertinent information for this research (CDC, 2019). Geographically defined data such as poverty rates and income levels appeared to impact obesity prevalence (WHO, 2020).

Geographical Data on Obesity and COVID-19 Trends

A PubMed search will continue screening literature review articles reporting obesity and outcomes of confirmed COVID-19 in African American adult women 20-45 years old (Batsis, Zagaria, et al., 2020). The CDC collected and published national secondary data surveys on obesity and COVID-19 from March 2019 to June 2021 for South Mississippi (CDC, 2019; WHO, 2020). Literature reviews on primary exposure to obesity will evaluate the history of chronic conditions, defined as self-reported mental health conditions such as Type-2 diabetes, asthma, sleep apnea, hypertension,

cardiovascular disease, cancer, depression, overweight, and obesity (Abuelezam, 2020). I will also use primary outcomes websites to track COVID-19 symptoms to evaluate attitudes toward COVID-19 health tools, including mobile cell phones, to follow COVID-19 signs and receive suggestions and recommendations on tracking locations (Abuelezam, 2020). The researcher can use secondary collected data without modifications to identify and uncover essential concepts about the pandemic using qualitative coding (Maher et al., 2018). Also, this qualitative study will seek to explore how the COVID-19 pandemic and obesity continue to rise in Mississippi (WHO, 2020). Finally, this study will examine the impact COVID-19 has on family relationships by monitoring obesity and its association with physical activities and the food environment (Belanger et al., 2020).

Data Analysis

Data analysis in qualitative research consists of three analysis strategies: collecting, preparing and organizing the text data in the transcript for analysis (Saldana, 2016). I plan to audio record interviews and transcribe and upload the data into the MAXQDA-12 database software for coding and data analysis (Predictive Analysis Today, 2016). I also plan to review each transcript while allowing participants to reflect upon field notes and memos using similar themes and information obtained from the interview (Maher et al., 2018). According to Creswell and Creswell (2018), codes are placed into themes, represented by categories of experiences unified into a comprehensive description of the phenomenon. Therefore, all themes will be identified and stored on a password-protected computer desktop and a jump drive (Maher et al.,

2018). The codebook will be developed using prior researcher-driven codes and an inductive review of transcripts for salient concepts (Maher et al., 2018). A second researcher reviewed all regulations to identify discrepancies to extract statements that describe the phenomenon and participant's experiences which a third reviewer mitigated (Maher et al., 2018). I will use codes to enhance trustworthiness, credibility, transferability, and dependability to improve codes after evaluating research findings (Ravitch & Carl, 2016).

Research Questions

The following RQs build on previous research on obesity and obesity-related factors associated with COVID-19 (Maher et al., 2018). Obesity-related factors will be based primarily on individual health factors from a medical perspective of isolation during the COVID-19 Pandemic (Cloud et al., 2020). Obesity factors such as genetics, metabolism, behavior, environment, culture, and SES are listed in detail in Chapter 2 literature review (Woodruff et al., 2017). The RQs consisted of the following:

Research Question (RQ)1: What are lived experiences of African American adult women regarding good nutrition and physical exercise preventive strategies being promoted for healthy living to reduce and prevent obesity during the COVID-19 pandemic in Horn Lake, MS?

RQ2: What are the lived experiences of African American adult women concerning the main comorbidities related to overweight and obesity in patients who experienced complications associated with COVID-19?

RQ3: What are the lived experiences of African American adult women's attitudes, subjective norms, and perceived behavioral controls of obesity concerning eating behavior and physical activity for self-management during the COVID-19 lockdown in Horn Lake, MS?

RQ4: What are the lived experiences of self-management for healthy eating plans and regular physical activity for obese African American adult women in Horn Lake, MS, during COVID-19?

RQ5: What are the lived barriers faced by African American adult women with obesity during the COVID-19 pandemic?

RQ6: What lived chronic diseases have African American adult women have encountered that are independent risk factors for obesity and severe COVID-19, including heart disease, lung disease, and Type-2 diabetes?

Reliability and Validity

Triangulations of member-checking techniques and data quality will show research findings and member checking techniques for credible, reliable, and valid research data from participants' perspectives in the research study (Pour & Chamkhani, 2018). Research sources can help me develop methods that address weight, height, and BMI (Sorjonen et al., 2021). I will conduct several questionnaires through one-on-one semi-structured interviews and the data collected by these sources to determine if the data is reliable (Pour & Chamkhani, 2018). Resources used in this research study are significant in offering positive responses to data quality, validity, and reliability issues (Pour & Chamkhani, 2018). Trustworthiness will be established in this research study

through validity and reliability among the researcher and participants (Ravitch & Carl, 2016). Also, credible, transferable, dependable, and confirmable will be established using strategies to evaluate research findings (Ravitch & Carl, 2016). Nevertheless, this study will reflect reflexivity and triangulation by allowing me to dig deeper into the research study's complexity and rigor (Ravitch & Carl, 2016).

Ethical Considerations

Ethical challenges faced by researchers in qualitative research require developing guidelines to interact between the researcher and participants as they are involved in different stages of the study (Ravitch & Carl, 2016). Therefore, the formulation of specific ethical guidelines and protocol is essential for the anonymity, confidentiality, and informed consent of the researcher and participant (Ravitch & Carl, 2016). I will carefully plan all aspects of this study for data collection and reliability. Questions in the interview will be worded effectively to prevent unbiased and gain truthful responses from the interview questions from the interviewer. Also, the instruments I plan to use in this study are vital in reducing the potential for participant bias (Pour & Chamkhani, 2018). Ethical consideration is considered and observed concerning human subjects, as set forth by requirements obtained for the IRB for Walden University (Slovin & Semenec, 2019). I plan to cite sources and attributions appropriately following the Publication Manual of the American Psychological Association (White et al., 2019).

Summary

This chapter presented the research methods, including the research design, purpose, and phenomenological approach (Levitt et al., 2021). Plans are for the

interviewer and interviewee to review archival data sources and their reliability (Pour & Chamkhani, 2018). Data collection and data analysis procedures will be described, and ethical considerations will be summarized (Klingler et al., 2017). The results of the study will be presented in Chapter 4 in textual and tabular form.

Chapter 4: Results

Introduction

In this qualitative study, I examined the relationship obesity had on adult African American women during the COVID-19 pandemic in Horn Lake, MS. The purpose of the RQs for the study was to explore nutritional and physical exercise preventive measures to create strategies to reduce obesity through the perspective of adult African American women in Horn Lake, MS, during the COVID-19 pandemic. I also examined the contribution of related individual obesity factors to the overall COVID-19 prevalence within Horn Lake, MS. According to WHO (2020), significant factors of obesity, such as genetics, metabolism, behavior, environment, culture, and socioeconomics, have contributed to the prevalence of severe COVID-19 complications. I captured demographics relating to the factors through the (CDC) and data prevention. The WHO was used for recording and measuring analyzed data on the COVID-19 virus.

Therefore, I examined genetic factors by integrating qualitative data techniques from the previous literature to validate the concept that 83% of patients diagnosed as obese in the United States have a genetic tendency. Many factors such as genetics have influenced the risk of illness from SARS-COV-2. SARS-COV-2 is the coronavirus responsible for COVID-19 susceptibility and severity (Xiang & Lu, 2019). The genome of SAR-COV-2 is composed of a single strand of RNA with 50 positive strands of proteins of non-structural, structural, and accessory functions (Xiang & Lu, 2019). Genetic insight for COVID-19 is activated through the receptor-binding domain (RBD) that recognizes the membrane receptor (Xiang & Lu, 2019). The membrane receptor of

angiotensin converts enzyme two into a protein expressed in the lungs, heart, kidney, and intestines (Xiang & Lu, 2019).

Recent research has measured metabolism as an obesity factor to identify how excessive fat and oxidation can cause insulin resistance of carbohydrates (Xiang & Lu, 2019). Insulin resistance causing Type-2 diabetes in obese patients is a significant risk factor for COVID-19 severity. Xiang & Lu (2019) reported that the body recognizes and responds to hyperglycemia when individuals have too much glucose in their blood. As of July 2020, the CDC (2020) reported that infection from the COVID-19 virus causes potential immune responses and demonstrates increased mortality. Type-2 diabetes is correlated with hyperglycemia on systemic inflammatory responses and immune system dysfunction for COVID-19 patients. Therefore, COVID-19 is severe and progresses quicker for Type 1 and Type 2 diabetes patients. As a direct effect, COVID-19 significantly affects blood glucose, resulting in increased insulin resistance in patients with diabetes mellitus.

Furthermore, individual behavior during COVID-19 has determined how individuals may cope with insensitivity to social interactions (Melo & Soares, 2020). Findings have suggested that many people feel the impact of health-related behaviors and hospitalization for COVID-19 (Melo & Soares, 2020). According to recent studies, the pandemic and economic and social consequences have impacted mental health disorders, such as mood and anxiety disorders, resulting in higher levels of psychological stress related to COVID-19 (Melo & Soares, 2020). The emotional, behavioral, and psychological impact of the COVID-19 pandemic has affected COVID-19 patients during

this ongoing health crisis. Indeed, the emotional stress linked to social distancing, social isolation, and quarantine has been mainly used to minimize the spread of COVID-19.

Meanwhile, social distancing and isolation have prevented the contagious disease from spreading throughout the United States. COVID-19's effects on human behavior and physical activity are due to daily restrictions placed on recreation facilities. Lower physical activity levels may significantly impact inactive populations for obese patients' lifestyle behaviors during the COVID-19 lockdown. For example, eating behaviors of people with obesity during the COVID-19 pandemic may have caused stress-related eating behavior disorders, such as nutritional, depression, and stress conditions, requiring dietary therapy for a nutritious diet to improve their health.

In addition, environmental effects of the COVID-19 pandemic have been linked to harmful emissions in the air and a lack of access to a clean water supply and healthy foods. The COVID-19 pandemic has led to public health challenges because of unhealthy eating habits and a lack of physical activity. Air pollution has also been linked to increased hospitalization and death from COVID-19 infection of the respiratory system (Burton et al., 2020). Another recent study suggested that air pollution transmitted the virus (Burton et al., 2020). Individuals can be at risk of contracting the COVID-19 virus due to a lack of unclean water supply and limited handwashing. The impact of culture on the pandemic has also affected members of society for the Africa American community differently than any other race. As of September 12, 2020, more than 8.1 million people across the United States and its four territories responded positively to the COVID-19 virus (WHO, 2020).

Finally, the socioeconomic impact of COVID-19 is likely to increase poverty, pushing an estimated 90 million to 120 million individuals into extreme poverty by 2025. Income earned by individual families can directly or indirectly affect their health during the COVID-19 pandemic. The CDC (2020) identified that nearly 55% of African American men and women with low-wage essential jobs deny them sick leave. Therefore, they must continue interacting with the public, despite shut-in place government restrictions for a community outbreak that exposes them to a higher risk of COVID-19 infection, possibly resulting in hospitalization or death. The African American population has been disproportionately diagnosed with chronic diseases such as Type-2 diabetes, hypertension, arthrosis, cancer, and asthma, underlying health conditions that make COVID-19 more detrimental to a person's health (Shi et al., 2020). The pandemic has caused a socioeconomic disruption to the food system, which has caused an increased demand for food because of panic buying and stockpiling of food products (Sun et al., 2020). According to Brown et al. (2021), food security for nutritional food for families is under threat. The pandemic has decimated jobs, resulting in reduced access to healthy foods. People are put at risk of becoming obese when experiencing a loss of wages during the pandemic. Therefore, staying active and eating healthy during the COVID-19 pandemic is necessary to help prevent obesity, high blood pressure, liver problems, and Type-2 diabetes. Also, observing public health measures and nutritional health is essential for keeping the immune system healthy. Healthy meals to prevent obesity during the COVID-19 pandemic may consist of small portions of meat, emphasizing whole grains, vegetables, and fruit servings (Brown et al., 2021). However, in previous

studies, participants stated that a lack of physical exercise during COVID-19 solitary confinement led to unhealthy behaviors leading to a rise in mortality (Nieman & Wentz, 2019). Participants also said they spent more time sitting at their desks while adapting to working online from home, sitting on the couch watching movies, engaging on social media for hours, homeschooling their children, and ordering food via Instacart (Melo & Soares, 2020). The socioeconomic implications of the COVID-19 pandemic can jeopardize the lives and livelihood of families and individuals for years if this problem is not addressed. Social distancing, self-isolation, travel restrictions, direct contact with the virus, and school closure have reduced the workforce for millions who remain without jobs.

This chapter garners the responses and perspectives of 16 participants through interview guide questions for this study. I used the MAXQDA-12 database software to organize participants' responses into themes coded for data analysis. I also used the interview guide questions that I carefully posed to glean participants' answers, and reactions to the RQs stated in Chapters 1 and 3 of the study. The RQs that guided this study are as follows:

Research Question (RQ)1: What are lived experiences of African American adult women regarding good nutrition and physical exercise preventive strategies being promoted for healthy living to reduce and prevent obesity during the COVID-19 pandemic in Horn Lake, MS?

RQ2: What are the lived experiences of African American adult women concerning the main comorbidities related to overweight and obesity in patients who experienced complications associated with COVID-19?

RQ3: What are the lived experiences of African American adult women's attitudes, subjective norms, and perceived behavioral controls of obesity concerning eating behavior and physical activity for self-management during the COVID-19 lockdown in Horn Lake, MS?

RQ4: What are the lived experiences of self-management for healthy eating plans and regular physical activity for obese African American adult women in Horn Lake, MS, during COVID-19?

RQ5: What are the lived barriers faced by African American adult women with obesity during the COVID-19 pandemic?

RQ6: What lived chronic diseases have African American adult women have encountered that are independent risk factors for obesity and severe COVID-19, including heart disease, lung disease, and Type-2 diabetes?

Recruitment

After receiving approval from Walden University IRB (Approval #01-25-22-0423552) and The Mississippi State Health Department IRB (Approval #012722-2) to conduct the research study, I recruited 12 to 15 participants for the study. Recruitment for the research study was conducted at the Mississippi State Health Department in Southaven, MS. Sixteen participants met the criteria consisting of an English-speaking language. Additional criteria consisted of African American obese females 20 to 45 years

old, weighing 174lbs or greater (BMI is 30 or more), and participants residing in Horn Lake, MS, who tested positive for COVID-19 during the study period. Finally, participants had previously participated in a weight loss intervention on physical activity such as NLRT and BFR interventions as potential exercise strategies for training home base tools.

I approached participants with the research study and adequately introduced myself as a Walden University Ph.D. student completing my doctoral dissertation. After introducing myself and explaining the purpose of my research, I hung flyers (Appendix A) in the lobby of the Health Department in Southaven, MS. All participants interested in the study and who met criteria requirements were provided a "Consent Form" to review and express their willingness to participate. Participants interested in participating in the study were asked to reply, "I Consent," and email me the consent form. After receiving consent, I provided participants with an attached questionnaire (Appendix B) and the location for the follow-up interview in an email. Participants were also offered a date and time to choose a suitable schedule to conduct the follow-up interview. Participants were ensured I would not violate their privacy due to interviews being conducted in a private room provided by the Mississippi State Health Department. I also confirmed they would be comfortable in the designated location. Therefore, they could answer the interview questions to the best of their knowledge. Participants agreed with the research study after IRB approval. The demographic information obtained from the research questionnaires for all participants was coded using MAXQDA-12 software.

Participants Profile

The initial potential participants were 18 African American females ages 20 to 45 interested in the research study. I had two potential participants who did not meet the requirements for inclusion due to their age and not testing positive for the COVID-19 virus. After recruitment, I had 16 African American participants willing to participate in the study. They agreed to be audio recorded in a face-to-face or telephone interview in a room provided by an employee at the Mississippi State Department of Health in Southaven confidentiality of the participant's identity. I assured the participants who met the requirements for the study that their responses would be kept confidential. I also assured the participants that the public would not know their identities because I provided interviewee codes instead of using their names, date of birth, or social security numbers on their questionnaires and audio recordings. Listed below is a profile summary of each participant's biography.

- Participant Number 1 was a 30 to 35-year-old African American female, was married, had a household income of $0 to $20,000, resided in Horn Lake, MS, and had a High School Diploma as the highest level of education achieved.
- Participant Number 2 was a 30 to 35-year-old African American female, had an annual household income of $60,000 to $80,000, and resided in Horn Lake, MS.
- Participant Number 3 was a 30 to 35-year-old African American female, was single, had a household income of $20,000 to $40,000, and resided in Horn Lake, MS.

- Participant Number 4 was a 40 to 45-year-old African American female, was married, had an annual household income of $20,000 to $40,000, resided in Horn Lake, MS, and had an Associate's Degree at the highest level of education completed.
- Participant Number 5 was a 40 to 45-year-old African American female, had an annual household income of $20,000 to $40,000, and resided in Horn Lake, MS.
- Participant Number 6 was a 25 to 30-year-old African American female, was single, had an annual household income of $60,000 to $80,000, resided in Horn Lake, MS, and had a Master's Degree as the highest level of education completed.
- Participant Number 7 was a 20 to 24-year-old African American female, had an annual household income of $100,000 to $120,000, resided in Horn Lake, MS, and had a Master's degree as the highest level of education completed.
- Participant Number 8 was a 25 to 30-year- old African American female who had an annual household income of $0 to $20,000 and had a GED as the highest level of education completed.
- Participant Number 9 was a 40 to 45-year-old African American female who had an annual household income of $60,000 to $80,000 and resided in Horn Lake, MS.

- Participant Number 10 was a 30 to 35-year-old African American female, had an annual household income of $20,000 to $40,000, and resided in Horn Lake, MS.
- Participant Number 11 was a 20 to 24-year-old African American female, was single, had an annual household income of $0 to $20,000, and resided in Horn Lake, MS.
- Participant Number 12 was a 25 to 30-year-old African American female, was single, had an annual household income of $40,000 to $60,000, resided in Horn Lake, MS, and had a Bachelor's degree as the highest level of education completed.
- Participant Number 13 was a 25 to 30- year–old African American female, was married, had an annual household income of $40,000 to $60,000, resided in Horn Lake, MS, and had a Bachelor's degree at the highest level of education completed.
- Participant Number 14 was a 40 to 45-year-old African American female who had an annual household income of $40,000 to $60,000 and resided in Horn Lake, MS.
- Participant Number 15 was a 30 to 35- to year-old African American female, had an annual household income of $0 to $20,000, and resided in Horn Lake, MS.
- Participant Number 16 was a 25 to 30- to year-old African American female, was single, had an annual household income of $20,000 to $40,000, resided in

Horn Lake, MS, and had completed some college at the highest level of education achieved.

Although participants were not asked about their marital status or educational achievements, they responded to one of the categories on the questionnaire or during the interview. However, some participants did not respond to their marital status or education. For example, participants 3, 7, 8, and 11 provided responses to only one category of their marital status or education. Participant 3 said, “I am single.” Participant 7 stated, “I have a Master’s Degree.” Participant 8 said, “I achieved a GED,” and participant 11 said, “I am single.” Participants 2, 5, 9, 10, 14, and 15 did not state their marital status or education. Participants 1, 4, 6, 12, 13, and 16 responded to their marital status and education. Participant 1 informed me I am married with a High School Diploma. Participant 4 stated she is also “married with an associate’s degree, and Participant 6 was “single with a Master’s Degree. Participant 12 said, “I am single and have a Bachelor’s Degree, Participant 13 is “married with a Bachelor’s Degree.” Finally, participant 16 is “single with some college education. Table 1 illustrates participants’ marital status and their highest level of education achieved.

Table 3

Participants Marital Status and Highest Level of Education Achieved

Participants	Marital status	Education
Participant #1	Married	High school diploma
Participant #2	No marital status	No education
Participant #3	Single	No education
Participant #4	Married	Associate's degree
Participant #5	No marital status	No education
Participant #6	Single	Master's degree
Participant #7	No marital status	Master's degree
Participant #8	No marital status	GED
Participant #9	No marital status	No education
Participant #10	No marital status	No education
Participant #11	Single	No education
Participant #12	Single	Bachelor's degree
Participant #13	Married	Bachelor's degree
Participant #14	No marital status	No education
Participant #15	No marital status	No education
Participant #16	Single	Some college

Data Collection

I posted flyers (Appendix A) in the lobby of the Mississippi State Health Department in Southaven, MS, for individuals interested in participating in the research study. I recruited eighteen participants for the research study. Two participants failed to meet the requirements for the research study due to their age and not testing positive for the COVID-19 virus. Therefore, I recruited and interviewed sixteen participants for the qualitative research study. I emailed consent forms (Appendix B) to volunteers interested and met inclusion for the research study. Volunteers who wished to participate replied to the consent form stating, "I consent," and became participants in the study. I also used a snowball sampling approach and provided flyers to three participants and encouraged them to pass them on to others interested or eligible for the study. One participant passed

the flyer out to two of her co-workers. One co-worker met inclusion for the research study, and the other did not meet the requirements for inclusion because of her age. The study recruited participants diagnosed as obese and who experienced the COVID-19 virus during the COVID-19 Pandemic. I designed a questionnaire with twelve open-ended questions to serve as an interview guide for participants. I emailed the questionnaire with an interviewee code to each participant who consented to the study to conceal their identity. After obtaining the completed questionnaire (Appendix C) from the participants via email, I (the interviewer) scheduled 60-90 minutes of agreed interviews with a date and time between me and the participant (interviewee). I scheduled ten verbal face-to-face interviews. Also, I scheduled six telephone interviews in a private room provided by the Mississippi Health Department to capture participants' lived experiences of being obese during the COVID-19 Pandemic. Nevertheless, the interview was scheduled to clarify responses to all twelve questions for accuracy of the questionnaire interview guide to answer the six open-ended RQs.

I interviewed my first participant for the research study on February 22, 2022, and the last participant was interviewed on March 11, 2022. Participants were comfortable having their responses audio recorded at the Mississippi State Department of Health in Southaven, MS. I used field notes as written verbatim to capture the date, time, and additional responses of feedback from participants besides information on the questionnaire, participants' facial expressions, and body language. Using an Olympus digital voice recorder, I recorded participants' responses and memos during the 60-90-minute interview process. All sixteen participant's interviews lasted 45 minutes to 1 hour.

Before validating participants' responses, they were informed there were no benefits or incentives, such as thank you gifts, compensation, or reimbursements for out-of-pocket expenses. After participants reviewed their responses to confirm whether the researcher's interpretations were accurate, their feedback was edited if necessary and checked using member-checking techniques to validate their answers. All transcripts and tools used for interviews were stored in a secure file on a USB jump drive and backed up on a cloud drive.

The questions helped me (researcher) obtain core themes, coded into categories and nodes for analysis. A debriefing via telephone or face-to-face involved asking participants whether the RQs were understandable and comfortable to answer. Participants also helped me determine the time needed for each interview, so the study's consent form accurately estimated the study's time commitment.

Data Analysis

My data analysis started with transcribing participants' questionnaires, audio recordings, and verbal typing responses from field notes and memos into Microsoft Word. After carefully reading the data, I determined that the theoretical framework using the trans-theoretical behavioral change mode was the best fit for my research study. I uploaded data into the MAXQDA-12 database software for coding and data analysis. I coded the responses into eight nodes and then classified all the nodes. Interview responses from all sixteen participants were imported into the MAXQDA-12 database software for examination by me. The coding process led to the formulation of twelve

themes that would enable me to answer the six RQs presented to participants during the interview process of the study.

According to Creswell & Creswell (2018), methods of the phenomenological approach design use significant in the study. Responses of participant lived experiences through statements to generate a purposeful meaning of descriptive phenomenology. I transcribed raw data from audio interview recordings, field notes, and memos. Once the data was transcribed, I read, organized, and prepared it for analysis. Finally, the data were coded into themes, interpreting the themes' meaning and their descriptions (Creswell & Creswell, 2018). The MAXQDA-12 software allowed me to group similar and different participants' responses to generate themes from the six RQs governing the study. I recorded and noted verbatim for thematic analysis of participants' responses and details of facial expressions and body language of all sixteen participants.

Evidence of Trustworthiness

Validity, reliability, and generalizability are significant strengths that contribute significantly to a qualitative study. The validity of research findings refers to whether a study accurately represents the phenomena' viewpoint. I ensured the trustworthiness and credibility of this study; I incorporated validity strategies to ensure participants provided accurate responses to the best of their knowledge based on their lived experiences of being overweight and obese with the COVID-19 virus. Triangulations of member–checking were conducted after transcription of the interviews to verify the accuracy and credibility of my findings. Also, I used credibility to clarify research bias during the planning, data collection, and analysis to influence the study's conclusion. The study

could be extrapolated to a similar target population generating similar results on obese women experiencing the COVID-19 virus during solitary confinement during the COVID-19 Pandemic.

Transferability was established in this study by carefully selecting participants and transferring raw primary data context from the interview into transcripts for coding. Sixteen participants met the criteria for this qualitative study. Their responses enabled me to address the RQs for the study that correlated the relationship of findings between lack of nutrition, lack of physical exercise, and the COVID-19 virus among African American women living in Horn Lake, MS, during the study period. The sample size was too small to incur bias. However, discrimination was avoided by framing open-ended questions for participants to provide truthful and honest answers. The sample size was not too large to produce the risk of redundant data. Therefore, I could extend the study to a larger population by conducting future research on obesity and COVID-19 for African American women during the COVID-19 Pandemic.

Nevertheless, I used dependability to measure the research findings' established stable or consistent trustworthiness. Trustworthiness determined consistency and repeatability to conduct future research on the study. While conceptualizing my research study, I ensured dependability by inquiring about processes for data collection, interpreting findings, and reporting results. Recruiting and interviewing participants at the Mississippi State Health Department was consistent among the participants. The confirmability of my study was successful by having a sample size that confirmed the results of findings from data collection examined and analyzed through procedures using

triangulation techniques. Also, results obtained from the study supported confirmability. My results were consistent with previous research findings that implemented triangulation techniques, methodological, data sources, research investigations, and theoretical confirmed results.

Demographic Information

Table 4 represents the sixteen participant's age, gender, height, and demographic information. Parameters listed in Table 4 are essential for the imputation of BMI to understand obese patients diagnosed with COVID-19 during the COVID-19 Pandemic for this study. The best responses on age, gender, height, and weight measurements were self-reported by participants in the questionnaire emailed to them. The youngest age for obese African American participants was 20-24 years of age, with less than 20 being the lowest age range and 40-45 being the highest age range. Participants in the 20-24 age category were 7 and 11. Participants ranging in age from 25-30 years of age consisted of Participants 6, 8, 12, 13, and 16. Participants ranging from 30 to 35 years of age consisted of 1, 2, 3, 10, and 15. Finally, participants ranging in the highest 40-45 were participants number 4, 5, 9, and 14. The sixteen participants in the research study gender were female.

Participants height was calculated in inches. Therefore, 60- 65 inches = (5ft-5.4ft), 66 -71 inches = (5.5ft-5.9ft), and 72-74 inches = (6ft-6.2ft). The lowest height in inches was 60 inches (5ft) and the tallest height in inches was 74 inches (6.2ft). Participants 1, 3, 4, 5, 6, 7, 9, 11, 14, and 16 Height was 60-65 inches (5ft) and Participants 2, 8, 10, and 15 Height was 66-71 inches. Participants 12 and 13 Height was 74-73 inches.

Table 4

Demographic Characteristics of 16 African American Research Participants

Participants	Age (Years)	Gender	Height(Inches)	Weight(Pounds)
Participant #1	30-35	Female	60	283
Participant #2	30-35	Female	67	180
Participant #3	30-35	Female	63	217
Participant#4	40-45	Female	61	267
Participant #5	40-45	Female	63	259
Participant #6	25-30	Female	62	177
Participant #7	20-24	Female	62	186
Participant #8	25-30	Female	67	198
Participant #9	40-45	Female	62	209
Participant #10	30-35	Female	71	278
Participant #11	20-24	Female	63	206
Participant #12	25-30	Female	74	232
Participant #13	25-30	Female	73	261
Participant #14	40-45	Female	65	282
Participant #15	30-35	Female	70	319
Participant #16	25-30	Female	62	333

Table 5 indicates the City and State parameters where participants reside and their test results for the COVID-19 virus. Participants one through sixteen live in Horn Lake, MS. Also, participants one through sixteen tested positives for the COVID-19 virus.

Table 5

Participants City and State and Test Results for COVID-19

Participant's	City and state	Test results for COVID-19
Participant #1	Horn Lake, MS	Positive
Participant #2	Horn Lake, MS	Positive
Participant #3	Horn Lake, MS	Positive
Participant #4	Horn Lake, MS	Positive
Participant #5	Horn Lake, MS	Positive
Participant #6	Horn Lake, MS	Positive
Participant #7	Horn Lake, MS	Positive
Participant #8	Horn Lake, MS	Positive
Participant #9	Horn Lake, MS	Positive
Participant #10	Horn Lake, MS	Positive
Participant #11	Horn Lake, MS	Positive
Participant #12	Horn Lake, MS	Positive
Participant #13	Horn Lake, MS	Positive
Participant #14	Horn Lake, MS	Positive
Participant #15	Horn Lake, MS	Positive
Participant #16	Horn Lake, MS	Positive

The summary for the parameters indicated in Table 6 is BMI, physical activity, healthy diet, and the participant's annual income. BMI is a measuring tool used to calculate an individual's body fat based on height and weight. The formula for computing BMI for adults is BMI = Weight in Pounds ÷ Height Inches ² X 703 (Fitzpatrick & Hill-Briggs, 2017). Their BMI calculated participants' weight. One participant's weight was average, and one participant's weight was overweight. Four participants were obese. The remaining ten participant's weights fell in the category of incredibly obese. A BMI of 18.5-24.9 kg/m² is considered average/normal weight. Also, a BMI of 25.5-29.9 kg/m² is deemed overweight at 169lbs-202lbs. A BMI greater than 30-34.9 kg/m² was considered obese at 203lbs or more. Finally, a BMI of 36.0 kg/m² or greater is considered incredibly obese. The weight ranged from 283lbs (Participant 1) to 333lbs (Participant 16). For

example, a person who weighs 198 pounds and is 67 inches tall BMI would be calculated as follows: [198 ÷ (67) ²] x 703 = 31.0078. The calculated results of 31.0078 were rounded to a whole number, resulting in 31kg/m². Therefore, participant 8 calculated that a BMI of 31 was considered obese.

Participants 2 and 12 were deemed overweight; borderline obese. Participant 2 BMI was 28 kg/m², and participant 12 BMI was 29.8 kg/m². Participants 6, 7, 8, and 13 were considered obese based on the BMI chart. Participant 6 BMI was 32 kg/m². Participant 7 BMI was 34 kg/m². Participant 8 BMI was 31 kg/m². Participant 13 BMI was 34 kg/m². Based on the BMI chart, a person with a BMI greater than 36 kg/m² is considered incredibly obese. Therefore, participants 1, 3, 4, 5, 9, 10, 11, 14, 15, and 16 were considered extremely obese. Participant 1 BMI was 55 kg/m². Participant 3 BMI was 38 kg/m², and participant 4 BMI was 50 kg/m². Participant 5 BMI was 46 kg/m², participant 9 BMI was 38 kg/m², participant 10 BMI was 39 kg/m², participant 11 BMI was 36 kg/m², participant 14 was 47 kg/m², participant 15 BMI was 46 kg/m², and participant 16 BMI was 61 kg/m².

Physical activity, a healthy diet, and an individual's annual income are also illustrated in Table 5. The COVID-19 Pandemic lockdown was associated with participant's being physically active and their nutritional health. Participants 1, 8, 11, and 13 were not engaged in healthier physical exercise or a healthy diet during the COVID-19 Pandemic. Participants 5, 6, 7, 10, and 15 did not engage in physical activity, although their meals consisted of a healthy diet. Participant 12 was involved in physical exercise

and ate healthy meals. Table 5 represents the BMI for normal, overweight, obese, and incredible obese for all 16 Participants.

All participants stated, "the COVID-19 Pandemic caused an increase in food prices" Most participants said, "they did not eat healthy because they could not afford to purchase healthy foods." Therefore, they ate foods they could afford or foods available to them. An estimated 90% of Participants stated they stopped exercising because gym facilities closed due to the COVID-19 Pandemic lockdown and shut-in place state curfews. The last 10% of participants said: "they did not have the income to pay for a gym membership."

Individual annual income for participants 1, 8, 11, and 15 was $0 - $20,000. Participants 3, 4, 5, 10, and 16 annual incomes was $20,000 - $40,000. Thirdly, the annual income of $40,000- $60,000 consisted of participants 12, 13, and 14. Nevertheless, participant's 2, 6, and 9 annual incomes were $60,000-$80,000. Finally, participant number 7 annual income was $100,000 - $120,000. There was not any income reported for $80,000 - $100,000 or $120,000 - $140,000 for participants.

Table 6

Additional Demographic Characteristics for Participants 1-16

Participants	BMI	Physical exercise	Healthy diet	Participant's income
Participant#1	55	No	No	$0 - 20,000
Participant #2	28	Yes	No	$60,000 - 80,000
Participant #3	38	Yes	No	$20,000 - 40,000
Participant #4	50	Yes	No	$20,000 - 40,000
Participant #5	46	No	Yes	$20,000 – 40,000
Participant #6	32	No	Yes	$60,000 – 80,000
Participant #7	34	No	Yes	$100,000 – 120,000
Participant #8	31	No	No	$0 – 20,000
Participant #9	38	Yes	No	$60,000 – 80,000
Participant #10	39	No	Yes	$20,000 – 40,000
Participant #11	36	No	No	$0 – 20,000
Participant #12	25	Yes	Yes	$40,000 – 60,000
Participant #13	34	No	No	$40,000 – 60,000
Participant #14	47	Yes	No	$40,000 – 60,000
Participant #15	46	No	Yes	$0 – 20,000
Participant #16	61	Yes	No	$20,000 – 40,000

Table 7

Represents the BMI for Normal, Overweight, and Obese Participants

Participants	BMI	Normal	Overweight	Obese
Participant#1	55	No	No	Yes
Participant#2	28	No	Yes	No
Participant#3	38	No	No	Yes
Participant#4	50	No	No	Yes
Participant#5	46	No	No	Yes
Participant#6	32	No	No	Yes
Participant#7	34	No	No	Yes
Participant#8	31	No	Yes	Yes
Participant#9	38	No	No	Yes
Participant#10	39	No	No	Yes
Participant#11	36	No	No	Yes
Participant#12	25	No	Yes	No
Participant#13	34	No	No	Yes
Participant#14	47	No	No	Yes
Participant#15	46	No	No	Yes
Participant#16	61	No	No	Yes

Results of Themes Identified

This study aimed to find the relationship between nutrition and physical exercise associated with obesity. The RQs sought to answer factors that led to increased obesity for African American women during the COVID-19 Pandemic. There were 12 significant themes generated from interviews conducted by participants and analyzed in MAXQDA-12 software. The themes were categorized into eight groups to answer the six RQs during the study.

Group 1 was designed to provide answers to participants' weight. The results identified participants' overall experiences discussing their weight with a health care professional such as a physician, nurse, or dietitian based on their attitudes and perceived behavior control of obesity concerning eating and physical behavior activities. Group 2 identified participants' economic considerations to determine how they benefit or affect nutrition and physical exercise. Group 3 identified how eating foods outside of food groups usually balances calories consumed and the number of calories expended. For example, an increase in unhealthy foods without equal physical activity equals an increase in weight. Therefore, food groups were considered for me to understand obesity contributing factors that influenced overweight or obesity.

In group 4, I recorded the time participants spent being physically active to find the frequency and duration of physical activity used to reduce, prevent, and treat obesity. Also, documenting how much time participants spent being physically active was crucial to assess whether participants were or were not getting enough physical activity is associated with chronic diseases and financial costs. Group 5 was designed for me to

document significant factors related to participants being overweight or obese during the COVID-19 Pandemic. These factors were used to assist me with creating preventive strategies to reduce, prevent, and treat obesity for African American women. Group 6 identified perceived barriers participants encountered regarding nutrition and physical exercise during the COVID-19 lockdown. The seventh group sought to respond to or provide the benefits of nutritional health and physical activity in the research. Group 8 relates to using regulations and policies as key factors to combat obesity in the African American community. Therefore, the themes are represented in the results and findings listed below.

Thematic Category 1: Participant's Overall Experience Discussing Their Weight With a Health Care Physician

Table 8 illustrates if participants had been notified of being overweight or obese by a healthcare professional. The purpose of Thematic Category 1 focused on asking participants if they felt comfortable or discomfort addressing their weight of being overweight or obese with a health care provider to answer RQ3. Responses to this question showed that 10 of the 16 participants (63%) indicated they felt comfortable discussing their overall weight experience with a healthcare professional. On the other hand, six of the 16 participants (38%) said they felt discomfort discussing their weight with a health care professional.

Participant 1 stated, "It is great discussing my weight with my doctor and the nurse because they keep me on my feet to avoid health issues." Participant 2 responded, "My experience discussing my weight with my physician was like any normal discomfort

discussion. I did not feel overweight at all. However, I was on the obesity scale from a physician standpoint." Participant 3 stated, "My experience discussing my weight with my healthcare provider is always pleasant. "My healthcare physician informed me I was overweight and borderline obese." Participant 4, "I have discussed my weight with my primary health care physician, and physicians recommended that I lose weight for overall health. I enjoyed her informing me how I could manage my weight while being obese." Participant 5 shared, "My experience with my physician was inspiring. She always informed me of what size I should maintain while overweight to prevent becoming obese." Participant 6 stated, "I learned I was obese after discussing my weight with my health care physician. I was grateful to find out I was obese."

Participant 7 stated, "I do not feel comfortable talking to my physician about my weight. " Participant 8 stated, "my physician and nurse informed me I was obese in January 2020. Therefore, I was saddened to learn this information, so I did not want to talk about it anymore." Participant 9 stated, "I have been devastated after speaking with my physician and dietitian and learning I am overweight and borderline obese." Participant 10 stated, "My conversation with my health care physician about being obese led to me developing positive obesity-related behavior changes." Participant 11 stated "the overall experience I had with my health care physician and nurse was one I did not want to have because I knew they would say I was obese." Participant 12 stated, "I felt comfortable listening to my physician tell me I am overweight, almost obese. "

Participant 13 stated, "I had a pleasant experience with my physician, nurse, and dietitian learning how to reduce my weight from being obese to becoming overweight."

Participant 14 said "I did not want to discuss my weight with my physician. I was saddened to hear my physician inform me my weight had increased so much from being overweight, and now I am obese." Participant 15, "my primary physician, recommended I lose weight. I was inspired to hear her tell me about food groups and exercise technics I can use at home during the COVID-19 Pandemic." Participant 16 stated "my conversation with my primary care doctor was great. She encouraged me to lose weight to better my health."

Table 8

Participants Notified of Being Overweight or Obese by a Healthcare Physician

Participant	Notified by a healthcare professional of being overweight or obese
Participant #1	No
Participant #2	Yes, obese
Participant #3	Yes, overweight
Participant #4	Yes, obese
Participant #5	Yes, overweight
Participant #6	Yes, obese
Participant #7	No
Participant #8	Yes, obese
Participant #9	Yes, overweight
Participant #10	Yes, obese
Participant #11	Yes, overweight
Participant #12	Yes, overweight
Participant #13	Yes, obese
Participant #14	Yes, obese
Participant #15	No
Participant #16	No

Thematic Category 2: Financial Influences on Decision-Making Regarding Nutrition and Physical Exercise

Table 5 chart displays participants' annual income during the research period. Thematic Category 2 addresses key factors of how participants' finances influence decision-making regarding nutrition and exercise. Participants' comments and responses to questioning three on the questionnaire will answer RQs 2, 3, and 5.

Participants' comments and responses were as follows: Participant 1 stated, "Food is too expensive for me to buy." Participant 2 said, "These days, eating healthy is way too expensive, especially for a family of 5. It is economically cheaper to eat small portions of unhealthy meals than to change your lifestyle to eating healthy nutrients daily." Participant 3 stated, "I cannot afford to pay for healthy foods or a guy membership." Participant 4 stated, "I have to create a meal budget and stick with it." "I exercise when I can but not very often." Participant 5 stated that "my finances influence my decision-making greatly because if there are concerns about my healthcare concerning my blood pressure, cholesterol, or diabetes, I need ample funds to purchase what's necessary to keep me healthy and safe."

"Currently, food and gym memberships are too expensive for me to purchase." Participant 6 stated, "My finances remain the same for food. I can afford to purchase food." However, I had to drop my gym membership because grocery prices increased." Participant 7 stated, "my finances allow me to purchase healthy foods and a gym membership." Participant 8 said my finances are too low to purchase healthy foods or go to a gym." "I work too much to exercise at home." Participant 9 stated, "I do not have enough money to purchase healthy food with a household of 8. I do not have money for exercise equipment to exercise at home or join a gym." Participant 10 stated, "although my dietitian and I talked about healthy meal preparation, my finances hinder me from purchasing healthy or exercise equipment for home use." Participant 11 stated, "finances prevent me from eating healthy or exercising." Participant 12 stated "I use finances to pay for my gym membership. I do not use finances to purchase all healthy foods." Participant

13 stated, "my finances do not influence my decision-making regarding nutrition and exercise." Participant 14 said, "I do not make enough money to provide healthy meals for a family of seven." I do not make money to pay for items to exercise either." Participant 15 stated "I could only purchase meals within my budget. I do not have money or time to exercise." Participant 16 said "I buy foods I can afford and exercise when I can."

Thematic Category 3: Lifestyle Perceptions of Participant's Weight During the COVID- 19 Pandemic

Thematic Category 3 was created using the MAXQDA-12 database software to answer RQ3. RQ3 was designed to record participants' perceived attitudes to understand their lifestyle perceptions of their weight and eating habits during the COVID-19 Pandemic. I created prevention strategies to reduce obesity based on their attitudes their perceptions of obesity. Participants 3 and 13 responded, "No, my lifestyle and eating habits did not change." Participants 2, 4,6, 7, 8, 10,11,14, 15, and 16 responded, "No, my lifestyle did not change, but my eating habits changed." Participants 9 and 12 responded, "Yes, my lifestyle changed, but my eating habits did not change. " Participants 1 and 5 responded, "Yes, my lifestyle and eating habits improved." Participants chose their responses from the five answer choices proved below as follows:

- Yes, my lifestyle and eating habits improved.
- No, my lifestyle did not change, but my eating habits changed.
- No, my lifestyle and eating habits did not change.
- No, my lifestyle did not change, but my eating habits changed.
- Yes, my lifestyle changed, but my eating habits did not change.

Thematic Category 4: Dietary Tools Used to Help Facilitate Meal Habits

The fourth thematic category addresses factors to determine if dietary recall tools helped or could help a participant facilitate meal habits to help treat, reduce, or prevent obesity in African American women during the COVID-19 Pandemic. Participants' responses and comments to question five in the questionnaire consisted of Participants 1, 3, 6, 7, 8, 11, 12, 13, and 14 stating "No" to answer RQ6. Participants 4, 5, 15, and 16 responded "Yes" to the question. However, participant 2 answered, "No, I have not. Participant 9 responded, "Yes, I need someone to help me plan and choice better meals." Finally, participant 10 responded, "Yes, my dietitian helped me include tools to help facilitate meal habits."

Thematic Category 5: Types of Foods Consumed by Participants at Home

Thematic Category 5, as delineated in Table 9, focused on addressing the question (6a) in the questionnaire to determine what foods participants' meals consisted of during an active week. Participants' responses to the question answered RQs 1, 2, and 4. Foods consumed by participants 1-16 consisted of the following. Participant 1 mentioned that her meals for the active week were fast food. "I eat chips, cookies, candy, pasta, cake, crab legs, and mac and cheese." Participant 2 stated, "I eat an apple, oranges, or bananas for breakfast. "For lunch, I eat hamburgers, French fries, pizza, and hot dogs." Participant 3 stated, "my foods consist of chicken, hot dogs, pizza, hot pockets, ice cream, cereal, and milk." Participant 4 responded that her foods consist of "junk foods of cake, pies, and ice cream." "I like to eat hamburgers, fries, ham, bacon, steak, and yams for lunch or dinner. Participant 5 "My foods contain meat, poultry, and vegetables." "I like to eat fish,

chicken, crab, and lobster." "My vegetables are okra, lima beans, and green vegetables." Participants 6 "I eat bananas and apples, green veggies, fish, chicken, cake." Participant 7 stated her meals consist of eggs for breakfast." I eat rice, potatoes, beans, and chicken for lunch and dinner."

Participant 8 stated, "I eat foods available to me." "Most times, I eat noodles, eggs, rice, chicken, pasta, and hot dogs." Participant 9 mentioned, "I eat chicken, pork, beef, and vegetables in a crockpot during an active week." Participant 10 "In an active week, I eat low potassium fruits of apples, strawberries, and blueberries." "For lunch and dinner, I eat high potassium foods, pinto beans, lima beans, chicken, fish, and pork. Participant 11 indicated she and her family eat "hamburgers, fries, and chicken nuggets for lunch and dinner." Participant 12 stated, "I eat vegan foods only." "My vegan diet consists of grains, beans, legumes, vegetables, and fruits." Participant 13 stated, "my meals are mostly fat foods hamburgers, fries, cake, tacos, and seafood." Participant 14 said, "I eat whatever healthy and unhealthy foods I find to create a meal for my family and me." "I eat pork and chicken. Pasta, fruits, vegetables, rice, green beans, pizza, and French fries." Participant 15 responded, "Within an active week, I eat meat, vegetables, bread, and fruits when I can purchase them." Participant 16 said, "The foods my family and I enjoy are pork, chicken, beef, beans, and vegetables."

Table 9

Types of Foods Consumed by Participants at Home

Participant	Types of foods consumed by participants
Participant #1	Chips, cookies, candy, pasta, cake, crab legs, and mac and cheese.
Participant #2	Apples, oranges, bananas, hamburgers, French fries, pizza, and hot dogs.
Participant #3	Chicken, hot dogs, pizza, hot pockets, ice cream, cake, cereal and milk.
Participant #4	Cake, pies, ice cream, hamburgers, French fries, ham, bacon, steaks, and yams.
Participant #5	Fish, chicken, crab, lobster, okra, lima beans, and green vegetables.
Participant #6	Bananas, apples, green veggies, fish, chicken, and cake.
Participant #7	Eggs, pasta, rice, potatoes, beans, and chicken.
Participant #8	Noodles, eggs, rice, chicken, pasta, and hot dogs.
Participant #9	Chicken, pork, beef, and vegetables.
Participant #10	Apples, strawberries, blueberries, pinto beans, lima beans, chicken, fish, and pork.
Participant #11	Hamburgers, fries, and chicken nuggets.
Participant #12	Grains, beans, legumes, vegetables, and fruits.
Participant #13	Hamburgers, fries, cakes, taco s, and seafood.
Participant #14	Pork, chicken, pasta, fruits, vegetables, rice, green beans, pizza, and French fries.
Participant #15	Fish, chicken, vegetables, bread, and fruits.
Participant #16	Pork, chicken, beef, beans, and vegetables.

Thematic Category 6: Spending Time Being Physically Active Within a Week

The 6th Thematic Category sought to determine if participants exercised during solitary confinement during the COVID-19 Pandemic. Table 8 will show participants' responses to identify whether they were physically active or not within a week. Choosing if participants were physically active during the COVID-19 Pandemic helped me answer RQs 1, 2, and 4. Participants 1, 5, 6, 7, 8, 10, 11, 13, and 15 responded, "No," I do not exercise weekly. Participants 2, 3, 4, 9, 12, 14, and 16 answered "Yes" I exercise doing an active week.

Table 10

Spending Time Being Physical Active

Participant	Yes or no responses of participants exercising weekly
Participant #1	No
Participant #2	Yes, walking at least 2 miles a day.
Participant #3	Yes, I exercise every morning before work.
Participant #4	Yes, I count steps when I walk seven days a week.
Participant #5	No
Participant #6	No
Participant #7	No, I haven't exercised since the gym closed because of the COVID-19 Pandemic.
Participant #8	No, I hate exercising because I feel like I do not lose weight.
Participant #9	Yes, I walk, do push-ups, or set ups at least 6 hours six days a week.
Participant #10	No
Participant #11	No
Participant #12	Yes, I walk the High School track in my neighborhood 30 minutes a day on Mondays, Tuesdays, and Wednesday's. I go to the gym two days a week on Friday's and Saturday and work out seven hours.
Participant #13	No
Participant #14	Yes
Participant #15	No
Participant #16	Yes

Thematic Category 7: Time Spent Being Physically Active

Thematic Category 7 is displayed in Table 11 to illustrate the time spent by participants being physically active during the week to answer RQs 1, 2, and 4. The various performances spent exercising were 30-45 minutes a day five days a week to 1 hour six days a week. Participant 1 indicated, "I walk a little at work for 30 minutes five days daily." Participant 2, "I spend no more than 2 hours every other day." Participant 3 stated she spends "1 hour a day exercising six days a week." Participant 4 spends "about 30 minutes every other day exercising." Participant 5 stated, "No, I do not exercise." Participants 6, 8, 11, and 13 indicated "None" for time spent being physically active." Participant 7 "I do not spend any time exercising during the week." Participant 9 mentioned, "I spend about 8 hours a week being physically active." Participant 10 says, "I spend zero time" being physically active. Participant 12 "I spend 30 minutes walking the tracks five days a week." "I exercise for 2 hours a day on Fridays and Saturdays at the gym." Participant 14 informed me she spends "30 - 45 minutes a day exercising five days a week." Participant 15 noted, "I do not spend any time exercising." Participant 16 mentioned, "I spend 1 hour bi-weekly being physically active for the week."

Table 11

Participants Time Spent Exercising Weekly

Participant	Time spent exercising weekly
Participant #1	I exercise 5 days a week for 30 minutes
Participant #2	2 hours every other day
Participant #3	1 hour for 6 days a week
Participant #4	30 minutes every other day
Participant #5	No, I do not exercise at all
Participant #6	None
Participant #7	I don't spend any time exercising
Participant #8	None
Participant #9	About 8 hours a week
Participant #10	I will say zero
Participant #11	None
Participant #12	30 minutes a day for 5 days a week
Participant #13	None
Participant #14	30 - 45 minutes for 5 days a week
Participant #15	I do not spend any time exercising
Participant #16	1 hour bi-weekly for the week

Thematic Category 8: Significant Factors Associated With Participants Being Overweight or Obese

I created the eighth thematic category to identify significant factors that led to participants becoming overweight or obese. Table 12 identified substantial factors associated with overweight and obesity of participants during the COVID-19 Pandemic. Participant 1 stated, "Having high blood pressure and eating unhealthy led to me reaching 300lbs and becoming obese." Participant 2 mentioned, "the price it cost to eat healthy caused me to be overweight." Participant 3 asserted that the COVD-19 lockdown has caused me to be lazy and tired." Participant 4 affirmed the most significant factors

associated with her being obese were "my blood pressure and diabetes." "Participant 5 expressed, "my blood pressure cholesterol and borderline diabetic are factors associated with being obese." Participant 6 voiced, "I had to cancel my gym membership, and I constantly eat non-stop." Participant 7 uttered, "I eat many snack foods when I feel down or stressed from being locked down during COVID-19."

Participant 8 declared, "I do not make enough money to purchase healthy foods, and I work too many hours to exercise." Participant 9 said, "I do not take time to manage self-care, including fitness or meal intake, because I cannot afford food or pay for the gym." Participant 10 mentioned, "not exercising because I do not have time with a family of four." Participant 11 indicated, "not having enough money to join a gym to exercise or purchase good foods is the cause of me being obese." Participant 12 considered "eating and going to sleep as a significant factor to my weight gain from being locked down and placed on curfew during COVID-19." Participant 13 responded, "I stopped working during the COVID-19 Pandemic to home-school my children." "I have been lazy during this time." Participant 14 stated, "not having enough money to purchase food is a significant factor in gaining weight." Participant 15 noted that high blood pressure is a factor causing me to eat because I eat unhealthy because of the price increase in food." Participant 16 said that diabetes and not exercising because I cannot pay for a gym membership is causing me to gain weight."

Table 12

Significant Factors Associated With Overweight and Obesity

Participant	Significant factors for overweight and obesity
Participant #1	High blood pressure and eating unhealthy food.
Participant #2	The price it costs to eat healthy.
Participant #3	COVID-19 caused laziness and tiredness.
Participant #4	My blood pressure and diabetes.
Participant #5	Blood pressure, cholesterol, and borderline diabetic.
Participant #6	Cancelled gym membership and eating non-stop.
Participant #7	Eating a lot of junk foods, feeling down and stressed during the lockdown.
Participant #8	Not enough money to purchase healthy foods and working long hours.
Participant #9	Can't afford food or pay for the gym.
Participant #10	Not exercising because of taking care of a family of 4.
Participant #11	Not enough money to join gym or purchase healthy foods.
Participant #12	Eating and sleeping because of curfews during COVID-19.
Participant #13	Stopped working and became lazy during the COVID-19 Pandemic.
Participant #14	Not having enough money to purchase food.
Participant #15	High Blood Pressure
Participant #16	Diabetes and not exercising

Thematic Category 9: Barriers Participants Experienced From Nutrition and Exercise During the COVID-19 Virus

The ninth thematic category was designed to document participants' experiences with nutrition and exercise during the COVID-19 Pandemic. Table 10 breaks down healthy and physical exercise barriers experienced by participants during the COVID-19

Pandemic to answer RQ5. Participant 1 responded "No" to question 9 in the questionnaire. Participant 2 stated, "yes, since COVID-19, the cost of food and other supplies have gone up." "As well as feeling safe enough to go to the gym and use the equipment." Participant 3 assured me, "yes, although I started exercising, my income is too low to purchase healthy food." Participant 4 mentioned, "yes, shopping for food became too expensive." Participant 5 communicated, "yes, sometimes I am sluggish." Participant 6 conveyed, "yes, I do not exercise like I used to." Participant 7 indicated, "yes, I have experienced the gym closing to prevent the spread of the virus."

Participant 8 revealed, "yes, the increase in food supplies has changed how my children and I eat." Participant 9 states, "yes, the COVID-19 virus has caused health facilities to remain shut down in Horn Lake, MS. "It has also stopped me from exercising. Also, participant 10 communicated, "yes, food prices are increasing weekly, and gyms are still closed in my area." Participant 11 spoke briefly, saying, "yes, my hours have been cut at work, so I do not have time to exercise, nor can I purchase healthy foods." Participant 12 alluded to question 9 in the questionnaire by stating, "no, I have not experienced barriers to COVID-19. Participant 13 voiced, yes, I am at home from being laid off because of COVID-19, so I eat, sleep, and watch TV most of the day." Participant 14 stated, "yes, I cannot join a gym or purchase healthy food." Participant 15 communicated, "yes, stores have a food shortage because of the COVID-19 virus." Participant 16 reported, yes, the food price increased because of the Pandemic." Nevertheless, 87.5% of participants responded yes they had experienced barriers to

nutrition and exercise during COVID-19. Finally, 12.5% of participants responded no, I had not experienced any barriers to food and exercise during COVID-19.

Table 13

Nutritional and Physical Exercise Barriers Experienced by Participants During the COVID-19 Pandemic

Participant	Yes or no responses to nutritional and physical active barriers
Participant #1	No
Participant #2	Yes
Participant #3	Yes
Participant #4	Yes
Participant #5	Yes
Participant #6	Yes
Participant #7	Yes
Participant #8	Yes
Participant #9	Yes
Participant #10	Yes
Participant #11	Yes
Participant #12	No
Participant #13	Yes
Participant #14	Yes
Participant #15	Yes
Participant #16	Yes

Thematic Category 10: Nutrition and Physical Exercise Prevention Barriers Encountered During the COVID-19 Pandemic

Thematic Category 10 touched on the perceived experiences of nutrition and physical exercise prevention to understand barriers encountered by participants during the COVID-19 Pandemic. I recorded and documented the participant's experiences to answer RQ5. Table 13 displays participant's yes or no responses to the nutritional and physical exercise barriers participants experienced during the COVID-19 Pandemic. Participants were asked what perceived nutrition and physical exercise prevention barriers did you encountered during the COVID-19 lockdown. Participant 1 responded, "It was so hard because I wanted to stay safe." Participant 2 mentioned, "None. I could still walk around my neighborhood to keep myself a little active throughout the lockdown." Participant 3 indicated, "I stopped purchasing nutritional foods because they were too expensive and too hard to find." Participant 4 revealed "limited food supplies and not able to get any walk in the park."

Participant 5 stated, "I became severely lazy during the COVID-19 lockdown." Participant 6 alluded to no gym membership." Participant 7 expressed, "I experienced constant weight gain because I could not attend the gym. I got off work too late to exercise in my neighborhood." Participant 8 mentioned, "my children and I do not go walking anymore because of the lockdown curfew." Participant 9 indicated "a shortage in food supplies and not being able to exercise." Participant 10 stated, "I no longer eat from the food chart my dietitian created during the COVID-19 Pandemic. I do not exercise

because the gyms are closed." Participant 11 communicated, "I became depressed from being locked down and ate whatever I felt like eating without exercising."

Participant 12 expressed, as an overweight patient, I have not learned how to engage in other activities to stop me from going to sleep after eating." Participant 13 said, "I stopped eating healthy and exercising because I was locked down at home." Participant 14 said, "during lockdown for the COVID-19 Pandemic, I struggled financially. I gave up on everything and everyone who needed me because I was financially struggling." Participant 15 voiced her opinion of prevention barriers. She stated, "I was not able to exercise in my neighborhood or at the gym." Participant 16 declared that prevention barriers encountered were "limited supplies of food and not being able to exercise."

Thematic Category 11: Exercise and Nutritional Health Lifestyle Benefits

Thematic 11 was used to find ways participants indulged in physical exercise and nutritional health to benefit their lifestyle. I recorded statements as participants responded to whether they submitted to physical activity and healthy eating habits. I noted participants' responses to answer RQs 1 and 3. Participant 1 affirmed, "It has not, but I'm in the process of doing better and getting healthy." Participant 2 stated, indulging in physical exercise has prevented me from gaining additional weight." Participant 3 indicated that "indulging in physical activity made me aware of the importance of nutritional health." Participant 4 voiced, it has made me more conscious of my health and eating habits."

Participant 5 expressed that exercising lowers my blood pressure and provides me more energy." Participant 6 stated, eating healthy has prevented me from being extremely

obese." Participant 7 communicated that exercising prevented me from experiencing chronic diseases." "Currently, I am diabetic." Participant 8 expressed that eating healthy and walking through the neighborhood with my children helped us maintain our weight." Participant 9 indicated that exercising and eating healthy prevented me from having high blood pressure." Participant 10 conveyed that indulging in physical exercise and healthy nutrition prevented me from being obese."

Participant 11 expressed that physical activity and nutritional health helped decrease my risk of severe health conditions." Participant 12 acknowledged "it lowers the risk of sickness and death of people." Participant 13 indicated, 'I was not obese when I ate healthily and exercised." Participant 14 stated that exercising helps me keep my weight low because I cannot purchase high-quality foods. Participant 15 commented that I was able to manage my health and did not suffer from high blood pressure. Participant 16 affirmed that it prevented me from having high blood pressure, diabetes, and kidney disease.

Thematic Category 12: Regulations and Policies for Nutrition and Physical Exercise Prevention Strategies

Thematic Category 12 focused on finding out from participants whether regulations and policies for nutrition and physical exercise prevention strategies impact a healthy lifestyle. Thematic 12 was used to answer RQ3 to determine participants' attitudes towards rules and guidelines on fitness and health. As shown in Table 14, 13 participants (81%) responded yes to regulations and procedures for nutrition health and physical exercise prevention strategies that impact a healthy lifestyle. On the other hand,

3 participants (19%) responded, “no, I do not think regulations and policies for nutrition and physical exercise prevention strategies impact a healthy lifestyle.”

Table 14

Regulations and Policies for Nutrition and Physical Exercise

Participants	Regulations and policies for nutrition and physical exercise
Participant 1	Yes, I do!
Participant 2	Yes, the government can reduce the price of healthy foods, provide food stamps to all families during the COVID-19 Pandemic and provide paid gym membership programs to assist parents and guardians with meal plans to create healthy meals for families.
Participant 3	Yes, regulations and policies for free nutritional and gym plans through rewards will allow people to hold themselves accountable for their nutritional health and physical exercise.
Participant 4	Yes, it can help public health practitioners provide alternatives to food and exercise to prevent overweight and obesity.
Participant 5	Yes, no one wants rules and regulations on how to eat or what to eat. Some people are motivated more by going to the gym and exercising around others. If gyms remain closed due to the COVID-19 Pandemic, some people just won't exercise.
Participant 6	No
Participant 7	Yes, reduce chronic diseases from weight gained in the United States.
Participant 8	Yes, prevent weight gained in children and adults.
Participant 9	Yes, the role of government policies for nutrition and physical activity can improve nutrition.
Participant 10	Yes, reduce chronic diseases from a person being overweight or obese.
Participant 11	No
Participant 12	Yes, regulations and policies for nutrition and physical exercise prevention strategies helps individuals manage their weight and health.
Participant 13	No
Participant 14	Yes, regulations and policies will allow dietitian to better monitor lifestyle habits.
Participant 15	Yes, regulations and policies will help people understand the risk of not being healthy.
Participant 16	Yes, the benefits of regulations and policies for nutrition and physical exercise could reduce the risk of obesity.

Results and Findings

All sixteen participants interviewed have similarities and variances in themes from the guided interview questions to answer all six RQs. A total of 12 themes contributed to answering RQs 1- 6. Thematic categories 4, 5, 6, 7, and 11 answered RQ1. Secondly, thematic categories 2, 5, 6, 7, and 8 answered RQ2. Thirdly, thematic categories 1, 2, 3, 4, 11, and 12 answered RQ3. Thematic categories 4, 5, 6, and 7 answered RQ4. Nevertheless, thematic categories 2, 9, and 10 answered RQ5. Finally, thematic categories 2 and 8 answered RQ6.

This study aimed to find the relationship between nutrition and physical exercise associated with obesity. The research questions sought to answer factors that led to increased obesity for African American women during the COVID-19 pandemic using 12 thematic categories from the eight groups listed. *RQ1*: What are lived experiences of African American adult women regarding good nutrition and physical exercise preventive strategies being promoted for healthy living to reduce and prevent obesity during the COVID-19 pandemic in Horn Lake, MS? Results demonstrated that the impact of the lived experiences that the COVID-19 pandemic has had on the African American population for participants in Horn Lake, MS, is challenging to prevent obesity through the promotion of nutrition and physical exercise. This challenge is due to limited access to healthy and fresh foods because of supply chain disruption, panic buying because of the fear of communities running out of food, poor diet quality, problematic overeating during the lockdown, and increased access to unhealthy food supplies shelf life. Data showed a decrease in physical exercise due to the closure of gyms, reduced active

transportation, closure of neighborhood parks, and cancellation of sports and other activities because of early curfews during solitary confinement. RQ2: What are the lived experiences of African American adult women concerning the main comorbidities related to overweight and obesity in patients who experienced complications associated with COVID-19?

Results for this question consisted of the lived experiences of African American adult women being overweight or obese with tripled morbidity because of severe illness from the COVID-19 infection. Also, participants who were overweight or obese had increased risks of severe diseases such as Type-2 diabetes and high blood pressure. RQ3: What are the lived experiences of African American adult women's attitudes, subjective norms, and perceived behavioral controls of obesity concerning eating behavior and physical activity for self-management during the COVID-19 lockdown in Horn Lake, MS?

Results for this were participant's attitudes and subjective norms. Participants' perceptions of behavioral control concerning eating behavior and self-management behaviors during the COVID-19 Pandemic were determined by their attitudes towards their health care provider, finances, physical activity, nutritional health, and policies and regulations. Although 75% of participants explained the overall benefit of a healthcare professional such as a physician, nurse, or dietitian informing a patient of their weight through BMI measurements could help patients self-manage their weight. There was still a significantly higher percentage of obese patients during the COVID-19 Pandemic. For example, developmental strategies to prevent chronic diseases provided by physicians for

patients included information on weight loss using exercise home remedies. Also, examples of dietary meal preparations to effectively promote nutrition and healthy lifestyle behaviors benefited patients' weight management during the COVID-19 Pandemic. Participants acknowledged that their finances were the main reason they could not exercise or eat healthy. Participants' responses indicated that the lowest income earned by participants 1, 8, 11, and 15 was between $0- $20,000. The highest earnings for participant 7 were between $100,000 and $120,000. Participants ranged from 20 to 24 years old for the lowest incomes and 40 to 45 years old for the highest income ages for all 16 African American females. 85% of participants explained it is easier to eat unhealthy meals because they are inexpensive, and the cost to eat healthily is too expensive. Also, 91% of participants stated it is too costly to purchase a gym membership or exercise at home because they work long hours to pay their mortgages, rent, car notes, insurance, or buy household supplies and groceries. Finally, 81% of participants reflected that free nutrition and gym programs such as the Supplemental Nutrition Assistance Program (SNAP) and the Young Men's Christian Association (YMCA) plans could provide policies for reward programs. Individuals would be responsible for holding themselves accountable for managing their weight. Also, overweight and obese patients fearing exercising in a gym could register for virtual online home exercise programs, allowing them to be responsible for their weight loss. RQ4: What are the lived experiences of self-management for healthy eating plans and regular physical activity for obese African American adult women in Horn Lake, MS, during COVID-19?

The research proved that the closure of gyms resulted in 56% of participants stating they did not exercise at home after the gym closed due to the COVID-19 virus. However, 44% of participants responded that they started exercising at home or in parks within their neighborhoods when curfews were implemented during solitary confinement for the COVID-19 virus. Obese participants who exercised spent a minimum of 30-45 minutes a day were exercising for three to four days a week. In comparison, overweight participants spent at least 1 hour exercising five or six days a week. Obese participants who barely exercised primarily ate healthy meals. At the same time, participants who exercised more throughout the week ate a lot of fast foods and junk foods and snacks after dinner and throughout the night. RQ5: What are the lived barriers faced by African American adult women with obesity during the COVID-19 pandemic? Results for these questions consisted of obstacles to African American adult women being obese during the COVID-19 Pandemic. Participants ate unhealthy foods and junk foods, resulting in high blood pressure and Type-2 diabetes. Participants experienced food shortages and increased food prices; therefore, their incomes did not allow them to purchase quality foods.

Additionally, participants feared contracting the COVID-19 virus in a gym. Therefore, some participants no longer exercised because of the COVID-19 Pandemic and worked long shift hours. Restrictions of full and partial lockdown of city travel transportation, restricted social gatherings, and closed schools and gyms affected physical activity in society. RQ6: What lived chronic diseases have African American adult women encountered that are independent risk factors for obesity and severe COVID-19,

including heart disease, lung disease, and Type-2 diabetes? Results were the particular reason for participants having increased high blood pressure, and Type-2 diabetes was associated with significant factors and barriers relating to 86% of participants being overweight or obese because of a lack of physical exercise and nutritional health. Risk factors for weight gain resulting in obesity during self-quarantine for the COVID-19 Pandemic were inadequate sleep, snacking after dinner, lack of dietary restraints, eating in response to stress and depression from being locked down, and decreased physical activity. Participants suffered tremendously because their finances impacted their decision-making to improve their eating habits. On the contrary, only participants 6 and 7 stated they have enough money to purchase food and a gym membership to eat healthily and exercise weekly.

Findings suggest that 63% of participants' lifestyle perceptions of their eating habits changed during the COVID-19 Pandemic because of solitary lockdown and increased food costs. The remaining 38% (6) participants responded, "No, my lifestyle and eating habits did not change.", "Yes, my lifestyle changed, but my eating habits did not change, and yes, my lifestyle and eating habits improved." All participant's responses for the last three categories were in two groups (13%). Also, nine participants (56%) did not feel they needed a dietary recall or other tools to help facilitate meal habits. Of four participants at (25%) responded yes, they needed or would like to have a dietitian help them with a dietary recall to prepare healthy meals. Finally, two participants (13%) answered yes they need a dietitian to help them facilitate meal habits. Participants 4, 5, 15, and 16 answered "Yes" to the question. However, participant 2 replied, "No, I have

not changed my eating habits during the pandemic.” Participant 9 responded, "Yes, I need someone to help me plan and choose better meals." The majority of participants ate chicken, hot dogs, fish, pizza, hamburgers, French fries, cakes, beans, apples, and bananas. An estimated 94% of participants ate fast fatty foods weekly. These foods increased their BMI and caused chronic diseases for most participants.

Summary

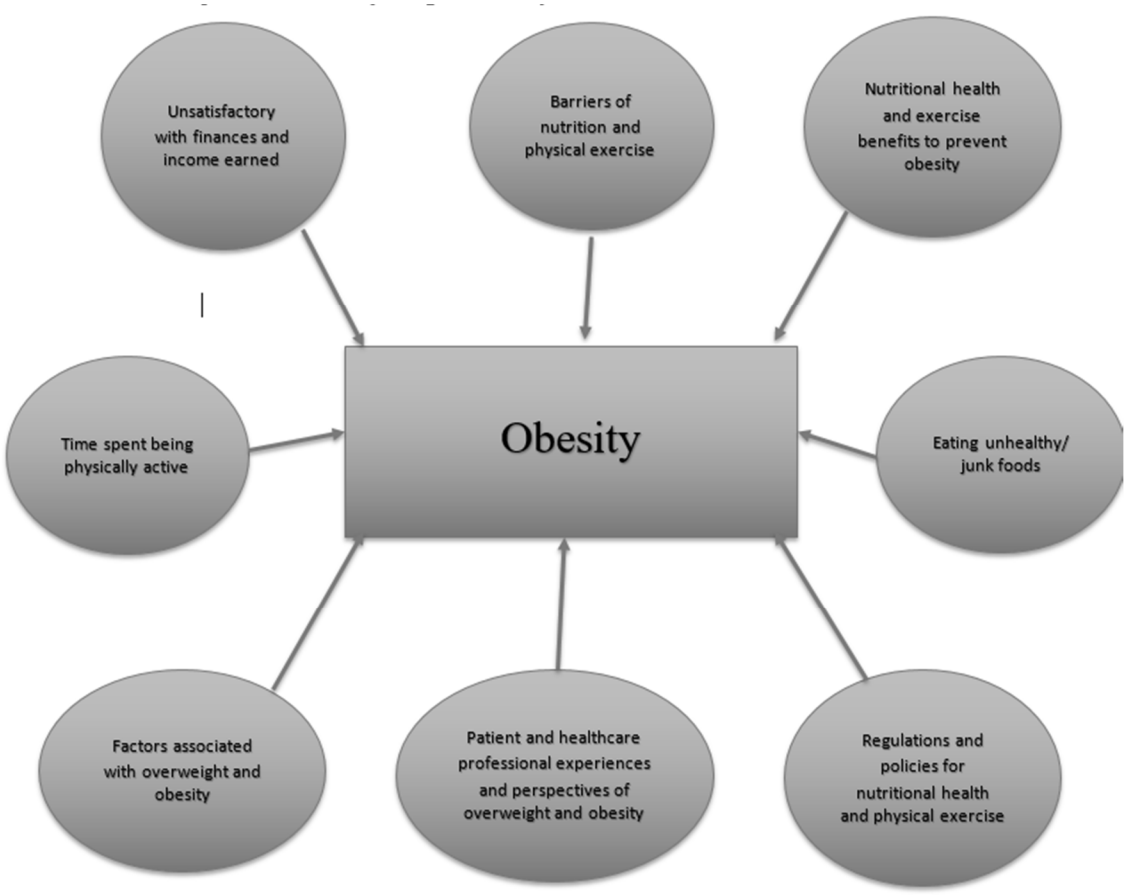
This qualitative study aimed to find the relationship between obesity, nutrition, physical activity, and the African American race of female patients during the COVID-19 Pandemic. The approval of the study by Walden University IRB (Approval # 01-25-22-0423552) and the Mississippi State Health Department (Approval # 012722-2) enabled me to recruit sixteen participants for this phenomenological study. This chapter outlined the participant's profile and the data collection method for this study. After signing their consent form and completing the email questionnaire, all participants were interviewed in a private room provided by the Mississippi State Health Department in Southaven, MS. I provided copies of the consent forms and emailed them to each participant for their records.

I performed my data analysis using the MAXQDA-12 database software. I identified various themes, a total of 12 based on nodes and classification from the data collection, which were feasible using the MAXQDA-12 software. This chapter outlined participants' profiles using demographic features and interviewee codes to protect their identities. Results from this study consisted of 12 themes analyzed into eight nodes to answer the six RQs that I will process in Chapter 5 to discuss the findings and results

recorded in Chapter 4. Figure 1 summarizes the 12 themes provided on obesity using the MAXQDA-12 database software.

Figure 1

MAXQDA-12 Thematic Diagram Associated Factors Contributing to Obesity



This chapter analyzed various results of eight nodes broken down into eight groups. The eight groups were as follows: unsatisfactory with finances and income earned, barriers to nutrition and physical exercise, nutritional health and exercise benefits to prevent obesity, time spent being physically active, eating unhealthy foods and junk foods, factors associated with overweight and obesity, patient and healthcare professional

experiences and perspectives of overweight and obesity, and regulations and policies for nutrition health and physical exercise. Findings and results from Chapter 4 will be analyzed and recorded more in Chapter 5. The RQs for this study were:

RQ1: What are lived experiences of African American adult women regarding good nutrition and physical exercise preventive strategies being promoted for healthy living to reduce and prevent obesity during the COVID-19 pandemic in Horn Lake, MS?

RQ2: What are the lived experiences of African American adult women concerning the main comorbidities related to overweight and obesity in patients who experienced complications associated with COVID-19?

RQ3: What are the lived experiences of African American adult women's attitudes, subjective norms, and perceived behavioral controls of obesity concerning eating behavior and physical activity for self-management during the COVID-19 lockdown in Horn Lake, MS?

RQ4: What are the lived experiences of self-management for healthy eating plans and regular physical activity for obese African American adult women in Horn Lake, MS, during COVID-19?

RQ5: What are the lived barriers faced by African American adult women with obesity during the COVID-19 pandemic?

RQ6: What lived chronic diseases have African American adult women encountered that are independent risk factors for obesity and severe COVID-19, including heart disease, lung disease, and Type-2 diabetes?

I answered RQ1 in thematic categories 4, 5, 6, 7, and 11. Also, I answered RQ2 in thematic categories 2, 5, 6, 7, and 8. Thirdly, I answered RQ3 in thematic categories 1, 2, 3, 4, 11, and 12. Fourthly, RQ4 was answered using thematic categories 4, 5, 6, and 7. Nevertheless, thematic categories 2, 9, and 10 answered RQ5. Finally, thematic categories 2 and 8 answered RQ6.

I will proceed with chapter 5 to address how the themes related to the TTM of (SOC) theory were designed to create preventive strategies to improve dietary intake and physical activity. I took these measures into account to record ways they enhanced the quality of life for patients diagnosed as overweight or obese during the COVID-19 Pandemic. Chapter 5 will also illustrate interpretations of the results, the implication for social change in public health, recommendations for future studies, and a conclusion of the study.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

In this qualitative research study, I aimed to provide findings on participants' perspectives and experiences to identify the relationship between nutrition and physical exercise and the connection of COVID-19 on African American women in Horn Lake, MS, to contribute to preventive strategies to treat, reduce and prevent obesity. Belanger et al. (2020) conducted a qualitative study to assess obesity in the target population of African American women. However, researchers in previous literature reviews did not delve into the lived experiences and barriers obese patients encountered during solitary confinement during the COVID-19 Pandemic. Instead, those studies identified a lack of education and awareness, limited nutrition, and physical exercise as associations with obesity on COVID-19.

Although recent peer-reviewed qualitative studies have identified factors linked to increases in obesity, no studies have focused on decreasing obesity amongst the African American population during solitary confinement. Therefore, this qualitative research study addressed significant independent risk factors that can adversely affect the African American population's ability to manage their condition of obesity, which can lead to morbidity and mortality. I studied significant factors and barriers to identify what led to participants being overweight or obese during the COVID-19 pandemic. Barriers to poor health and self-management during solitary confinement led to an imbalance of indoor or outdoor physical fitness and a lack of access to weight-loss programs. Moreover, a lack

of nutrition caused participants to have high blood pressure, Type 2 diabetes, or morbidity, resulting in mortality.

A study on the COVID-19 pandemic has collided with the obesity epidemic, resulting in patients' risk of severe health complications such as Type-2 diabetes, hypertension, arthrosis, and cancer (WHO, 2020). The research study helped me identify that 95% of participants ate healthily or did not exercise. My study addressed the gap in access to weight gain to create preventive strategies to help obese patients maintain a nutritious diet, engage in physical exercise, and manage self-management during the COVID-19 lockdown.

For example, an estimated 25% of participants suffered from high blood pressure. Those participants are 1, 4, 5, and 15. In addition, 25% of participants suffered from Type 2-diabetes. Participants 4, 5, 7, and 16 were all diabetic patients. This information helped inform my research study by helping me create nutritional and physical exercise prevention strategies to reduce obesity for the African American population and individuals with chronic diseases. I attempted to achieve factors between obesity during the COVID-19 pandemic in analysis.

Therefore, I found that income earned influences participants' decisions on whether they purchase healthy foods and gym memberships to exercise. Participants' lifestyles changed when government restrictions requested gym facilities to shut down and increased the cost of food supplies. Ninety percent of participants believed that food price increases made it challenging to eat nutritional meals. An estimated 85% of participants explained that they could not exercise either because they worked late or

could not afford a gym membership. These findings revealed that income earned by participants has a significant effect and impact on contributing obesity factors for the African American population. For example, participants who ate nutritious meals often did not engage in exercise. On the contrary, participants who exercised did not eat healthy meals. Therefore, the goal is to create preventive strategies that allow participants to eat nutritional meals while engaging in physical exercise within the same week.

The target population for this study was obese African American women with COVID-19 living in Horn Lake, MS. Sixteen participants completed the questionnaires. They were asked to participate in a follow-up interview over three weeks to clarify their answers to the questionnaire and to provide additional feedback to the questions if they chose to. Answers gathered from participants were collected and represented in Tables 1-14 and Figure 1. The results indicated that varied income earned by participants affected what foods from the food groups participants purchased based on their income. Revenue during the COVID-19 lockdown potentially led to participants becoming obese because it determined what they could afford to eat and how often they engaged in physical activity weekly, potentially leading to obesity.

Chapter 5 demonstrates results recorded in Chapter 4 using themes and nodes relating to the theoretical model. The (TTM) of (SOC) theory was used to implicate social change, recommendations for a future study, and the study's conclusion. I also used a phenomenological approach to describe participant's lived experiences of nutrition and physical exercise prevention strategies to reduce obesity during COVID-19. I chose this method for this qualitative research because it allowed participants to discuss their lived

experiences of self-manage lifestyle modifications of the COVID-19 virus while being diagnosed as obese. The methodology was aligned with the TTM and SOC theory to help participants and others in the African American use preventive measures to reduce obesity based on their income and indoor and outdoor home exercises if they did not purchase a gym membership.

The interviews indicated that income earned prevented participants from purchasing nutritional meals and gym memberships. Also, participants could not benefit from physical activity to prevent obesity because they refused to change their eating habits. On the other hand, those who chose to change their eating habits refused to become physically active to reduce obesity. Therefore, their obesity status contributed to participants experiencing chronic diseases.

Finally, findings from this study provide insightful information on preventive nutrition and physical exercise strategies to combat the challenges of obesity for African American populations during solitary confinement lockdown in connection with COVID-19. Lifestyle perceptions of weight changes during the COVID-19 pandemic were related to eating behavior and physical activity during the COVID-19 lockdown. Forty-four percent of participants reported frequently snacking, panic buying, limited food access, lack of motivation, lack of control around foods, choosing unhealthy foods that have longer shelf lives, and lack of exercise barriers, resulting in weight gain. These barriers reflected participants' lifestyles of managing obesity by identifying what foods they could afford to eat, how much time they desired to exercise if they did not want to eat healthily, or how to exercise irrespectively of their incomes.

Interpretation of the Study

In this study, I intended to explore nutritional and physical exercise strategies to reduce obesity during the COVID-19 pandemic. I used information from this study to address the research problem by identifying how obese people manage their weight-loss process to prevent or reduce obesity during shut-in place restrictions for the COVID-19 pandemic. I found that a lack of access to weight management services during the COVID-19 crisis had caused weight gain in participants. Weight-related behaviors included unhealthy eating because of food supply chain disruption. Also, a lack of physical exercise was a problem because 13% of participants stated they were reluctant to exercise in public. Ethnicity and where participants lived were significant considerations in interpreting findings on obesity during the COVID-19 pandemic for this study.

Unsatisfied With Finances and Income Earned

Overall, 62% of participants were glad they discussed their weight with their healthcare professionals. A dietitian offered them nutritional and physical exercise services to help facilitate meal habits. Although some participants refused to get help, they were aware of chronic diseases they had or might encounter from being overweight or obese. The remaining 38% of participants said that their health care physicians did not conduct weight-related conversations with them. Therefore, a dietitian did not provide weight-loss programs or preventive strategies to help them lose weight. Discussing weight with a physician or nurse was uncomfortable for many patients to address their weight problems.

The study revealed that 25% of participants had an annual income of $0 to $20,000. Thirty-one percent of participants had a yearly income of $20,000 to $40,000. Nineteen percent of participants had an annual income of $40,000 to $60,000 and $70,000 to $80,000. Finally, 6% of participants had an annual income of $100,000 to $120,000. Participants 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 14, 15, and 16 informed me that their incomes influenced decision-making regarding their nutritional meals. However, Participant 7 stated, "My finances allow me to purchase healthy foods and a gym membership." Participant 13 shared, "My finances do not influence my decision-making regarding nutrition and exercise." Their incomes contributed to the foods they could afford, what they ate, and how often they ate healthy meals. This information was reflected in participants' BMI on the BMI chart for overweight and obesity.

According to the U.S. Census Bureau (2020), the average annual household income for the African American population in Horn Lake, MS, is $20,000 to $50,000 and has decreased by 12% since 2019. The U.S. Census Bureau (2020) noted that 75% of African American women in Horn Lake, MS, live below the federal poverty level because of companies shutting down, reduced work hours, and people being laid off work due to the COVID-19 pandemic. Also, the U.S. Census Bureau reported that the annual income for the African American population of 16,951 was $37,634, with a poverty rate of 25.5% in 2019. According to the U.S. Census Bureau (2020), the annual income in 2021 for African American women living in Horn Lake, MS, was $27,500. The population of Hispanics in Horn Lake, MS, is 3,739, with a poverty rate of 16.0%. Their

annual income in 2021 was $35,000. The White population in Horn Lake, MS, is 24,216. The poverty rate was 10.3%, with an income of $69,200.

Previous literature review findings on predisposing factors for obese African American women aligned with my research using nutritional and physical activity preventive strategies to reduce obesity for the African American population. In my study, participants were not asked about their household size when inquiring about their income. They included information on the number of members in their household because they felt the information explained why their income was too low to purchase nutritional foods or a gym membership. For example, Participant 9 stated, "I do not have enough money to purchase healthy foods with a household of eight members. I do not have money for exercise equipment to exercise at home or join a gym by purchasing a gym membership." Another example is Participant 14, who stated, "I do not make enough money to provide for a family of seven." I do not have enough money to pay for items to exercise either."

Barriers to Nutrition and Physical Exercise

There were 13% of participants who did not experience barriers to nutrition and exercise because of the COVID-19 virus. The remaining 88% of participants responded yes they encountered obstacles to nutrition and exercise because of the COVID-19 virus. They shared food and physical exercise barriers because of solitary confinement for the COVID-19 virus. There were 11 barriers to nutrition and physical exercise. Those barriers consisted of participants eating unhealthy foods and junk foods, resulting in high blood pressure and diabetes and increased food prices. Also, participants had low incomes that did not allow them to purchase quality foods, and stores had food shortages.

Additionally, they feared contracting the COVID-19 virus at a gym. Participants no longer exercised because of the COVID-19 pandemic in 2019. Jakobsson et al. (2020) studied how restrictions of full and partial lockdown of cities, travel transportation, restricted social gatherings, and closed schools and gym facilities affected physical activity in society. The authors found that decreasing physical activity lowered mechanic load, metabolic rate, and energy expenditure, which resulted in participants being obese. Also, in my study, I found that declining physical activity because of government restrictions for gym facilities to shut down resulted in participants being diagnosed as obese. Lack of income to purchase a gym membership was also a barrier that participants encountered. Participants became lazy from solitary confinement for shut-in place restrictions. Moreover, participants worked longer shifts because of work shortages and their need for extra income. Finally, participants ate, slept, and watched TV all day, lacking nutrition and physical exercise. There were increased risks of severe outcomes of chronic diseases of high blood pressure, diabetes, and COVID-19 in patients diagnosed as obese during solitary confinement.

Belanger et al. (2020) studied the influences of obesity on the severity and mortality of the COVID-19 virus and the association between obesity and COVID-19. Belanger et al. (2020) reviewed the impacts of obesity on the severity and mortality of the COVID-19 virus and the association between obesity and COVID-19. Belanger et al. (2020) study found multiple barriers of poor health-related to physical fitness and lack of nutrition linked to obesity-related chronic diseases, such as hypertension, diabetes, and

cardiovascular disease, disproportionately affecting disadvantaged populations with severe outcomes from COVID-19.

Nutritional Health and Exercise Benefits to Prevent Obesity

This study aimed to demonstrate the need for a diet and physical exercise to shape individuals' attitudes through health awareness to manage overweight and obese patients' weight during the COVID-19 pandemic. There were several benefits to indulging in nutritional health and exercise to help participants prevent obesity, and exercising prevented participants from gaining weight. The physical activities allowed participants to be conscious of their nutritional health. Physical exercise also provided participants more energy instead of letting them be a drain of energy, tired, and lazy throughout the week. Participants admitted that "eating healthy foods lowered their risks of becoming obese." Participants also stated that "eating healthily and exercising prevented them from being diagnosed with chronic diseases" such as high blood pressure, diabetes, and kidney disease to avoid the risk of morbidity and mortality. This research demonstrated the importance of exercising and eating healthily to help participants maintain their weight through community-based health awareness and education and preventive strategies to promote physical exercise and a healthy diet for patients.

Phillips et al. (2016) identified perceptions of diet, physical activity, and obesity-related health for African American women and their daughters. Data gathered from this study were essential for the authors to create lifestyle interventions to help participants reduce complications of infections of COVID-19 and obesity. The correct number of

calories consumed using diet patterns directly impacts weight to protect against heart disease, diabetes, high blood pressure, and other chronic diseases.

Time Spent Being Physically Active

Participants spent a minimum of 30 to 45 minutes a day exercising. The maximum time participants spent exercising was 1 hour 6 days a week. Toft and Uhrenfeldt (2020) studied the experiences of obese individuals being physically active within 18 months after the authors implemented lifestyle interventions for physical activity. The authors used a phenomenology approach to identify participants' moods and how they related to physical activity among obese individuals. The authors discovered that individuals struggled with energy depletion by identifying a lack of self-management and low self-esteem. This study and my research demonstrated the importance of physical activity for overweight and obese patients to address public health concerns linked to negative chronic health decreases and the impact of COVID-19. Also, physical activity with dietary modifications results in severe weight loss and reduces the risk of obese patients contracting the COVID-19 virus.

Eating Unhealthy Foods and Junk Foods

Eight participants 1, 2, 3, 4, 8, 11, 13, and 14 (50%) admitted eating fast foods and junk foods throughout the week. Excessive calories consumed by a person from fats, sugars, and sodium in fast-food meals and junk foods can cause weight gain leading to overweight and obesity. Evidence-based research on Type-2 diabetes identified that excessive amounts of sugars are associated with obesity (West-Smith et al., 2019). Shi et al. (2020) mentioned barriers to Type-2 diabetes during COVID-19 isolation by

identifying self-management strategies for patients with diabetes and COVID-19. The article conducted by Shi et al. (2020) and my research were essential in addressing the gap between obesity and the COVID-19 virus. This information helped create preventive intervention strategies for educational awareness, financial barriers, and positive emotions about physical exercise and dietary meals for patients with Type-2 diabetes and COVID-19 or people at high risk for the COVID-19 virus.

Factors Associated With Overweight and Obesity

There were significant factors among 100% of participants, such as high blood pressure, COVID-19, lack of physical activity, unhealthy foods, finances, Type- 2 diabetes, lack of access to weight loss programs, and laziness were associated with participants becoming overweight or obese. According to Batsis et al. (2020), a patient's lack of education and awareness on obesity and its association with COVID-19, limited nutrition, and preventive physical exercise increased the risks of severe outcomes of both Type-2 diabetes and COVID-19 in patients diagnosed as overweight and obese. The importance of my study illustrated solid and consistent evidence that lack of education and awareness on overweight and obesity are linked to Type-2 diabetes due to a defect in insulin secretion, high blood pressure, and kidney disease. Thus, physical activity and nutritional health are relative defects in fat oxidation responsible for weight loss.

Patient's Experiences and Perspectives of Discussing Their Weight With a Healthcare Professional

Seventy-five percent of participants discussed being overweight or obese with their healthcare professionals. Although, the remaining 25% of participants felt

discomfort when talking to a healthcare professional about their weight. Salemonsen et al. (2020) studied the impact and outcomes of self-management intervention on lifestyle to manage obese patients' weight during the COVID-19 lockdown. The authors discovered that self-management support groups provided services to obese patients based on their incomes.

Salemonsen et al. (2020) study was essential to my research. The analysis helped fill in my research gap by identifying how low, middle, and high-class African American women within a population use self-management to maintain their weight if they are not affiliated with a self-managed support group. I wanted to fill in the research gap by using preventive strategies obese patients can use to receive assistance if they are not enrolled in a weight loss program to help manage their weight during solitary confinement lockdown for the COVID-19 Pandemic.

I discovered that 25% of participants never received information from a healthcare professional about their weight in my study. Nor were they provided information on the dietary recall and physical activity tools to help facilitate meal habits and exercise to reduce their weight. Participants 1, 7, 15, and 16 stated, "I did not feel comfortable discussing my weight with my healthcare professional." Therefore, since their physician did not discuss their weight, nor did they inquire about it. Although the remaining seventy-five participants spoke openly to them about the importance of their weight, some used the advice provided to them by a dietitian to facilitate their meals by changing their eating habits or changing their physical activity habits. However, neither of the participants regularly participated in nutritional health and physical activity at the

same time to benefit their health. Therefore, the preventive strategies I created to treat, reduce, and prevent obesity will focus on measures to help participants eat healthily and exercise weekly. For a patient or provider to make appropriate health care decisions for themselves or their patient, they must have the capacity to obtain, communicate, process, and understand basic health information and services. Otherwise, if the patient and provider relationship to communicate suffers, so does health outcomes.

Regulations and Policies for Nutritional Health and Physical Exercise

Eighty-one percent of participants believed regulations and policies for nutritional health and physical exercise would be beneficial in helping participants whole themselves accountable for maintaining and managing their weight. Participants' responses identified behavioral beliefs on nutrition, physical activity, and social and economic factors that impacted participants' lifestyles based on their decisions to change lifestyle habits of nutrition and exercise, resulting in obesity and the COVID-19 virus.

Therefore, participants' behavior for health problems increased their risk of becoming obese while being infected with COVID-19. This study has allowed me to gain an in-depth understanding of participants' feelings, beliefs, and lived experiences to describe the need for implemented policies of rules to help people reduce obesity through diet and exercise. The problem with obesity has to be addressed because individuals with multiple comorbidities are more prone to develop severe complications following the COVID-19 virus resulting in morbidity and mortality.

According to Shi et al. (2020), actions to address the challenge of the rise in numbers of obese and COVID-19 patients require systematic regulations for policy

actions. The government has to take steps to reduce the COVID-19 and obesity pandemic because the Pandemic can no longer be ignored. Furthermore, government strategies and policies to weigh and measure people during the lockdown for solitary confinement can promote a healthy start on a diet and physical activity programs.

Strategies to reduce and maintain weight loss for obese patients to prevent them from becoming infected with the COVID-19 virus require a focus on nutrition and physical activity prevention intervention. These interventions will focus predominantly on changing individual-level eating behaviors (Shi et al., 2020). Behavior-based nutrition education approaches to changing population eating patterns have been met with limited success (Shi et al., 2020). Sociological perspectives propose that underlying social relations can help explain collective food and eating patterns and suggest an analysis of the sociocultural context for understanding population eating habits (Shi et al., 2020).

A theoretical framework for examining eating patterns as a social phenomenon addressed the research gap (Alulis & Grabowski, 2017). Gidden's structuration theory, in particular, his concept of social practices understood as an interplay of agency (rules) and social structure (resources), was used to study food choice patterns (Alulis & Grabowski, 2017). Viewing the application of these concepts helped me understand the family's routine food choice practices. Therefore, the framework assisted in characterizing how social structural properties are integral to food choice practices and could direct attention to these when considering nutrition interventions aimed at changing population eating patterns.

I tailored physical therapy interventions to feedback received from participants to set goals for physical activity and self-monitor progress towards a healthy goal. Also, the interventions will provide obese patients an opportunity to build social support for new behavior patterns through group motivation. Behavioral reinforcement can produce a positive weight-loss outcome through self-reward, community, and support groups. Finally, the interventions will consist of relapse prevention behavioral strategies that public health officials can implement for obese patients to rest their physical therapy goals if patients get off track.

Comparing Research Findings to Previous Literature Reviews

I conducted research findings on nutrition and physical activity compared to literature reviews discussed in Chapter 2 on nutrition and physical exercise for the African American population. This study confirmed that participants' inability to eat healthy foods and regular exercise was attributed to social and economic factors, attitudes, and beliefs that they were not overweight or obese. Other factors consisted of a shortage in food supplies and restrictions on full and partial shut-down of gyms facilitating to limiting social gatherings to prevent the spread of the virus.

Phillips et al. (2016) reported that behavioral control was the most critical factor in predicting unhealthy eating habits and lack of physical activity to reduce obesity for African American women. Also, the author's research aligned with my study because it demonstrated a need for community-based health awareness to promote education. Public health officials can use preventive strategies through diet and exercise to combat morbidity and mortality from the obesity and COVID-19 Pandemic.

According to Brown et al. (2021), the impact of the lockdown was associated with public health measures on adults with eating disorders being associated with social restrictions, functional restrictions, and restrictions of access to support management. Therefore, my study confirmed results from the literature because 31% of participants in my research study expressed that their eating disorders and lack of physical activity were related to social restrictions, functional restrictions, and restrictions of access to support management. For example, participants 1, 7, 8, 9, & 10 (31%) explained their experiences of not exercising due to social restrictions of gym facilities being forced to shut down because of government restrictions. Also, participants 1, 7, 8, 9, and 10 expressed their experiences of functional constraints due to their shift work hours changing at their place of employment. Finally, 13% of participants (5 & 11) explained their lived experiences to restrictions of lack of access to support management as a reason for them becoming overweight and obese. For example, participant 5 expressed, "some people are motivated more by going to the gym and exercising around others." Another example was participant 11, stating, "I became depressed from being in lockdown and not having fun exercising with friends and family members."

Theoretical Framework

As provided in Chapter 2, the theories that ground this research study are Prochaska and DiClemente's TTM and theory. The logical connections between the framework presented and the nature of my research include Prochaska and DiClemente's theoretical work. This work has been used extensively in public health for dietary and physical exercise modification in weight loss management, overweight and obesity of

children and adults for indoor and outdoor interventions (Woodruff et al., 2017). The trans-theoretical model was used in my study to create preventive strategies of change and focus on the concept of perceived control related to the shut-in place indoor lockdown during the COVID-19 pandemic to modify weight loss management to reduce the obesity pandemic. The research study also relates to the impact COVID-19 has on African American women diagnosed with obesity and their ability to self-manage lifestyle modification of the disease.

The Stage of Change (SOC) model is a considerably effective model for an interventional approach to lifestyle modifications for sustainable weight loss for my research study. The model for healthy behaviors for obesity risk management interventions focused on six stages: pre-contemplation, contemplation, preparation, action, and maintenance. I used the pre-contemplation stage to capture nutrition and physical activity to implement health promotion strategies to target obesity-related lifestyle behaviors in general populations to motivate lifestyle changes. Although the pre-contemplation stage and the remaining five stages successfully informed my research study's design and promotion strategies for obesity measures. Refining the pre-contemplation stage will reflect the knowledge that behavior is unhealthy to produce a positive change. Thus, while behavioral interventions seem to promote weight loss, weight loss maintenance is critical for patients to lose weight and change problematic behavior successfully.

Relationships to the Study and Literature Review

The results allocated from the study agree with findings from the literature review on obesity and the COVID-19 Pandemic and how it has tripled the risk and posed a significant threat to public health (CDC, 2020; WHO, 2019). Obesity for African American population women has tripled to 78% during the obesity and COVID-19 Pandemic. Currently, 1 in 5 African American women worldwide are expected to be obese by 2025 (CDC, 2020; WHO, 2019). Obesity is a precursor to chronic diseases such as diabetes, Type-2 diabetes, cancer, and kidney disease (CDC, 2020). Therefore, predicting the collision between obesity and the COVID-19 virus is estimated to rise to $995 billion per year in healthcare expenditures (CDC, 2020; WHO, 2019).

I used the TTM of SOC in my research study to understand participants lived experiences of obesity to create preventive strategies (Maher et al., 2018). Progression from the six stages will provide knowledge to implement strategies on income, lifestyle changes to change patients eating habits, and indoor and outdoor physical activity to decrease obesity (Maher et al., 2018). The aim of the (TTM) and (SOC) model are to combine diet and physical activity to provide participants with perspectives of their lived experiences to address obesity during solitary confinement for the COVID-19 Pandemic (Maher et al., 2018).

Limitation of the Study

During the study period, this research study was limited to sixteen African American 20-45 years old obese women who experienced COVID-19 while living in Horn Lake, MS. Also, participants must previously have participated in a weight loss

intervention on physical activity such as No-Load Resistance Training (NLRT) and Blood Flow Restriction (BFR) interventions. This qualitative research study used a phenomenon approach using a semi-structured follow-up interview to explore participants lived experiences of becoming obese and infected with the COVID-19 virus (Creswell & Creswell, 2018). The phenomenon of interest studied nutrition and physical exercise prevention strategies to reduce obesity for the African American population. Their willingness and honesty only measured the integrity of participants' responses in answers to the questionnaire and during the follow-up interview.

I considered no assumptions to alter the participant's responses to the questions. The validity of responses to the questionnaire and data collected from follow-up interviews were all based on the code of ethics and participants' attitudes to provide honest answers. Questions and statements yield responses that are valid and reliable measures of the interesting phenomenon. The relationship between measurement reliability and validity is that the questionnaire identified the most appropriate measurement and was written with the analysis plan of knowledge (Klingler et al., 2017). An example included asking open and closed-ended questions and providing clear instructions initially, allowing for consistent responses, reliability, and measuring responses based on the design (Klingler et al., 2017).

The study's findings contributed to the existing knowledge that African American adult women residing in Horn Lake, MS, require tailored efforts that address perceptions of obesity and COVID-19. Prevention strategies were beneficial in providing insight into the development and implementation of culturally appropriate barriers to environmental

factors resulting in higher obesity rates for the African American population. I prevented the sample from being biased by emailing documents to participants. After obtaining consent forms, I emailed questionnaires to participants so they could complete the questionnaire and email it back to me. Once the questionnaires were complete, I conducted follow-up interviews lasting 60-90 minutes in length, and the discussions were audio-recorded and fully transcribed using the MAXQDA-12 data software.

Recommendations for Future Research

The prevalence of obesity has tripled during the COVID-19 Pandemic (CDC, 2020). It can change significantly if policymakers and stakeholders educate populations at risk on ways to self-manage against factors that may predispose them to become obese during the COVID-19 pandemic. Therefore, the U.S. Government should mandate public policies for educational programs through the executive and legislative branches. Additional recommendations for future research based on findings from my study should include questionnaire sampling. Researchers should interview a more significant number of obese people to assess the relative prevalence of the general population to understand how overweight and obese people increase the risk of severe illness because of the COVID-19 virus. Also, researchers should consider interviewing participants to determine if insurance for fitness programs is an issue for them.

Since the pandemic began, obesity has increased due to a link between unhealthy eating and a lack of physical activity affected by the lockdown. Participants in my study mentioned they snacked more frequently and exercised less because they felt a problem with motivation and controlling their appetite around food. Therefore, future research is

recommended to understand mental health because of the COVID-19 crisis. Also, measures relating to a lack of physical activity and diet quality are associated with higher BMIs for the African American race. Understanding how the COVID-19 crisis disproportionately negatively influences weight loss and weight management will help public health officials reduce the obesity and COVID-19 pandemic and healthcare costs for obesity, COVID-19, and mental health.

Implications of Social Change

This research can influence social change through the following measures. The findings will lead to a positive social change through nutrition and physical activity preventive strategies to reduce obesity among African Americans and all ethnicities to make their lives better. I envisaged that my findings would educate African Americans who lack an understanding of obesity or the COVID-19 virus and could participate in educational community awareness programs and training to seek educational opportunities that will enable them to obtain knowledge about the diseases. African Americans who pursue this goal will ultimately be able to make better decisions to improve their health through recreational and physical activities. Also, engaging in knowledge about diets for nutritional health will remind them about the need to eat healthy foods throughout the week that entails a preference for eating home-cooked meals rather than ordering fast food from restaurants. Findings from my research will also help public health officials, such as stakeholders, better understand aspects of barriers and gaps in obesity intervention programs that have the potential to initiate positive behavior changes for populations. This information will help obese patients

utilize self-management strategies to sustain, manage, and support behavior changes through community groups for a healthy lifestyle essential for considering social change within the African American population.

Conclusion

In conclusion, obesity and the COVID-19 virus are prominent public health condition that continues to rise, affecting the African American race for women ages 20 to 45 years old. In all areas of public health, a problem must be clearly defined by public health officials before they can consider a potential solution to address the problem. The gap in the literature that prompted this study is that there is little to no research on how nutrition and physical activity prevention strategies reduce obesity during the COVID-19 Pandemic lockdown. Therefore, we must look at health being more than something medical and a cure we receive from a physician. Health can be considered as everything we do and experience. Everything exposes us to dramatically impacts our health and life expectancy. The traditional approach for assessing population health is based on socioeconomic.

Socioeconomic inequalities exist because social determinants socially determine circumstances beyond an individual's control (Sun et al., 2020). These circumstances cause disadvantages for people and limit their chance to live longer and healthier lives (Sun et al., 2020). As an approach, population health focuses on interrelated conditions and factors that influence the health of populations throughout an individual's life and life expectancy. Mortality and life expectancy have always been the primary measurements used to measure population health (CDC, 2020). Population health is measured by the

number of deaths occurring within populations during a period divided by the size of the population (CDC, 2020; WHO, 2019).

As mentioned in the unnatural causes of sickness and wealth media, the U.S. spends 2 trillion dollars on health insurance and medical care (CDC, 2020; WHO, 2019). However, people live shorter, often sicker lives in the United States than in other countries (CDC, 2020; WHO, 2019). The United States ranks 30 in life expectancy among other industrial nations (WHO, 2019). To truly address social determinants of health disparities, public health officials of the United States must view the relationship between determinants and health outcomes globally (WHO, 2019). Traditionally, mortality statistics have been the basis of population health measures (CDC, 2020). Considering population determinants is a better alternative for measuring population health (Hafeez et al., 2020). Determinants of population health will allow public health officials to evaluate factors that contribute to a person's current state of health (Sun et al., 2020). Factors considered for determinants of a population may be biological, socioeconomic, psychosocial, behavioral, or social (Sun et al., 2020).

Nutrition Health and Physical Exercise Preventive Strategies

Nutritional Health

- Overweight and obese patients can monitor healthy eating habits by consuming less processed and sugary foods instead of meat, poultry, eggs, seeds, dried beans, and fruits.
- Eat more servings of fruits and vegetables 3x per week.
- Get family members involved with eating low-glycemic index foods.

- Eat plenty of dietary fiber such as beans, broccoli, avocado, whole grains, and dry fruits, and drink plenty of water 5x per week to lower the risk of heart disease, stroke, Type-2 diabetes, and cancer.

Physical Activity

To prevent or reduce weight gain due to overweight and obesity, patients can use the primordial, primary, secondary, tertiary, and quaternary prevention strategies for self-management to:

- Encourage physical activity for 200 minutes (3hrs and 20 minutes) per week.
- Measure physical activity weekly by monitoring the patient's BMI weight on a weekly scale to determine total body weight loss. Also, use a measuring tape to measure waist loss.
- Overweight and obese patients can use resistance training and aerobic exercises to decrease high blood pressure. Resistance and aerobic exercises may consist of: Modified Push-Ups, riding a stationary bike, walking, side leg lifts, bridges, knee raises with an exercise ball and modified squats using the stairs instead of the elevator (Basis et al., 2020).
- Finally, the government can use policies and regulations for primordial strategies to build environment access for safe walking paths, free access to gym facilities, and access to stores with healthy food options to reduce obesity within communities (Batsis et al., 2020).
- The government can use primary strategies to implement nutritional supplementation programs (Batsis et al., 2020). A secondary strategy will also

monitor diabetes and blood pressure screening (Batsis et al., 2020). The government could implement a tertiary strategy for obese patients for diabetic foot care and cardiac rehabilitation (Batsis et al., 2020). Finally, the government can implement quaternary prevention strategies to reduce cardiovascular mortality for cases of cancer, stroke, and kidney disorders to treat those diseases (Batsis et al., 2020).

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Appendix A: Research Flyer

Study seeks obese participants who experienced COVID-19 during the COVID-19 Pandemic.

A new study called the "Nutrition and Physical Exercise to create prevention strategies to prevent and reduce obesity during the COVID-19 Pandemic" could help doctors and counselors better understand and help obese patients during the COVID-19 Pandemic. For this study, participants can describe their lived experiences during a face-to-face or telephone interview (depending on the volunteer's preference).

This questionnaire is part of the doctoral study for Carmesha Carter, a Ph.D. student at Walden University. Mrs. Carter is not an employee, contract worker or volunteer with the Mississippi State Department of Health (MSDH). MSDH's participation in this study is limited to the provision of office space for face-to-face interviews as needed.

About the Study:

- One 30-60-minute online questionnaire via email.
- One 60-90-minute verbal face-to-face or telephone interview in a location provided by the Mississippi State Department of Health.

Volunteers must meet these requirements:

- English Language
- African American obese (BMI of 30/174lbs or greater) females 20-45 year's old.
- Tested Positive for COVID-19.
- Reside in Horn Lake, MS during the study period.
- Previously participated in a weight loss intervention on physical activity such as No Load Resistance Training (NLRT) or Blood Flow Restriction (BFR) interventions.

If volunteers meet inclusion and are interested in participating in the research study, please email carmesha.carter@waldenu.edu.

Appendix B: Consent Form

You are invited to participate in a research study about your lived experiences of nutrition and physical exercise during the COVID-19 Pandemic. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

This study seeks 10-15 volunteers who are:

- English Language
- African American obese (BMI is 30/174lbs or greater) females 20-45 years old.
- Participants tested positive for COVID-19 during the COVID-19 pandemic
- Participants reside in Horn Lake, MS during the study period.
- Participants previously participated in a weight loss intervention on physical activity such as
  No Load Resistance Training (NLRT) and Blood Flow Restriction (BFR) interventions.

This study is being conducted by a researcher named Carmesha Carter, a doctoral student at Walden University. Mrs. Carter is not an employee, contract worker or volunteer with the Mississippi State Department of Health (MSDH). MSDH's participation in this study is limited to the provision of office space for telephone or face-to-face interviews as needed.

Study Purpose:
The purpose of this study is to explore nutritional and physical exercise strategies to reduce obesity during the COVID-19 pandemic through the perspective of adult African American women in Horn Lake, MS.

Procedures:
This study will involve your completing the following steps:

- Complete a confidential Email Questionnaire Guide (20-25 minutes).
- Take part in a confidential audio recorded face-to-face or telephone follow up interview to clarify participant's responses (60-90 minutes). Face-to-face interviews would be conducted at the Mississippi State Health Department clinic at (8705 Northwest Drive St. Suite 1, Building 1, in Southaven, MS). Please note that participants who come to the clinic will be required to submit to COVID-19 prevention protocols (such as a temperature check and wearing a mask) unless the participant has a medical reason exempting them from such requirements.
- Review a typed transcript of you interview to make corrections if needed (10 minutes).
- Complete validation techniques with the researcher at the end of the interview process to hear the researcher's interpretations and share your feedback for

accuracy of your experiences (20-35 minutes, face-to-face or telephone option available.

Here are some sample questions:

1. Do you want to be in better shape to prevent obesity and lower your chance of contacting COVID-19?
2. Has your appetite changed while experiencing COVID-19?

Voluntary Nature of the Study:
The researcher will only research with those who freely volunteer. So everyone involved will respect your decision to join or not. No one at the Mississippi State Health Department will treat you differently based on whether you volunteer or not. If you decide to join the study now, you can change your mind later. You may stop at any time. The researcher will follow up with all volunteers to let them know whether or not they meet inclusion for participation in the research study.

Risks and Benefits of Being in the Study:
Being in this study could involve some risk of the minor discomforts encountered in daily life, such as sharing sensitive information. With the protections in place, this study would not pose any risks beyond typical daily life to your well-being. This study offers no direct benefits to individual volunteers. This study aims to benefit society by providing insightful information on preventive nutrition and physical exercise strategies to combat the challenges of obesity for African American populations during solitary confinement lockdown in connection with COVID-19. Once the analysis is complete, the researcher will share the overall results through email with the university faculty, along with the analysis. I will email you a summary of the results and publish results for data collection in ScholarWorks so future researchers may use it for a prospective research study.

Payment:
You have no benefit or incentive, such as thank you gifts, compensation, or reimbursements for any out-of-pocket expenses.

Privacy:
The researcher is required to protect your privacy. Your identity will be kept confidential within the limits of the law. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the study reports. If the researcher were to share this dataset with another researcher in the future, the dataset would contain no identifiers, so this would not involve another round of obtaining informed consent. Data will be kept secure by the researcher on a password-protected computer and backed up on a cloud drive, kept confidentiality with an interviewee code, and added to my data collection to complete my dissertation after identifiers are removed upon completing my dissertation. Data will be held for at least five years, as the university requires.

Contacts and Questions:
You can ask questions of the researcher by emailing carmesha.carter@waldenu.edu. If you want to talk privately about your rights as a participant or any negative parts of the study, you can call Walden University's Research Participant Advocate at 612-312-1210. Walden University's approval number for this study is 01-25-22-0423552. It expires on January 24, 2023.

You might wish to retain this consent form for your records. You may ask the researcher or Walden University for a copy at any time using the contact info above.

Obtaining Your Consent
If you feel you understand the study and wish to volunteer, please indicate your consent by replying to this email with the words, "I consent."

Appendix C: Questionnaire

Instructions:

- **NOTE: PLEASE DO NOT INCLUDE YOUR NAME IN THIS EMAIL QUESTIONNAIRE GUIDE. (Participants are provided an interviewee code)**
- **Download the questionnaire into a word document and complete the first three highlighted items for the questionnaire guide date, time, and questions 1-12.**
- **Please type your answers under each question.**
- **Write the Alphabet beside the question mark for multiple choice answers.**
- **After you complete written responses to the Email Research Questionnaire Guide, review the document, and please email it back to carmesha.carter@waldenu.edu as an attachment.**
- **Thank you again for agreeing to participate!**

Questionnaire Guide

Date:

Time:

Participant Interviewee Code:

1. Can you tell me about your overall experience discussing your weight of being overweight or obese with a health care professional? (Ex: Physician, nurse, and/or dietitian)?

2. What is your age?
   (a) Less than 20
   (b) 20 - 24
   (c) 25 - 30
   (d) 30 – 35
   (e) 40 – 45

3. How do economic considerations such as finances influence your decision-making regarding nutrition and exercise?

4. (a) How much is your annual income?
   (a) 0- 20,000

(b) 20,000- 40,000
(c) 40,000- 60,000
(d) 60,000- 80,000
(e) 80,000- 100,000
(f) 100,000-120,000
(g) 120,000-140,000
(h) 140,000-150,000
(i) more than 150,000

5. What is your lifestyle perception of your weight during the COVID-19 Pandemic? Please choose from the following choices.
(a). No, my lifestyle and eating habits didn't change;
(b). No, my lifestyle didn't change, but my eating habits changed.
(c). Yes, my lifestyle changed, but my eating habits did not change;
(d). Yes, my lifestyle and eating habits improved.

6. Have you considered including a dietary recall or some other tool to help facilitate meal habits?

6 (a). What foods did your meals consist of during an active week?

7. Do you spend time being physically active within a week?
(a). Yes
(b). No

7 (a). If so, how much time do you spend time being physically active?

8. What would you consider your most significant factors associated with being overweight or obese?

9. Have you experienced barriers to nutrition and exercise during COVID-19? If yes, can you please elaborate on what these barriers have been?

10. What perceived nutrition and physical exercise prevention barriers did you encounter as an
obese patient during the COVID-19 lockdown?

11. How has indulging in physical exercise, and nutritional health benefited your lifestyle?

12. Do you think regulations and policies for nutrition and physical exercise prevention strategies
impact a healthy lifestyle? If yes, please explain why.
(a). Yes
(b). No

Thank you for taking time out of your schedule to complete this questionnaire. Do you have anything else you'd like to share? If you have questions after completing the questionnaire, please email carmesha.carter@waldenu.edu. Thank you for your responses to the questionnaire and for your time. Goodbye.

Sincerely,

Carmesha Carter