THE MENTAL EFFECT OF OBESITY ON ACTIVE-DUTY SERVICE MEMBERS IN THE UNITED STATES: A PHENOMENOLOGICAL APPROACH

By

Tegan Quigley

Liberty University

A Dissertation Presented in Partial Fulfillment

of the Requirements for the Degree of Doctor

of Philosophy

Liberty University

2024

APPROVED BY:

Marybeth Mitcham, PhD, MPH

Name and degree, Committee Chair

Mallory Ball, PhD, MPH

Name and degree, Committee Member

Gina Zito, PhD, MS

Name and degree, Committee Member

ABSTRACT

This phenomenological research was intended to explore the impact that obesity has on the mental health of soldiers in the U.S. military. The U.S. military has stringent physical fitness standards that must be met by each soldier regardless of sex. These standards can be challenging to maintain. Obesity is an increasing issue in the United States, and soldiers are not immune. Research regarding the physical issues that occur from obesity has been performed, but this study aimed to explore the behavioral or mental health effects that obesity can have within the military community. This study explored the following questions: In what ways does obesity impact the career of a service member? How do service members describe the impact that obesity has on their self-confidence and self-efficacy at work and at home? How does obesity impact service members socially within the military community? A literature review of the existing research was performed, participants were interviewed, and observations within the military community were analyzed for emerging themes. This transcendental phenomenological study has helped fill research gaps regarding the mental health impact that obesity has on service members. The study aimed to explore the mental impact obesity has on service members in the United States. Data was collected through literature review, face-to-face interviews, and observations. *Keyword*s: service members, obesity, stigma, bias, mental impact

Table of Contents

List of Tables

List of Figures

List of Abbreviations

ABCP: Army Body Composition Program

AR600-9: Army Regulation 600-9

BMI: Body Mass Index

GAD: General Anxiety Disorder

PHQ: Patient Health Questionnaire

CHAPTER ONE: INTRODUCTION

Overview

Obesity is a severe health condition with dire consequences. In recent years, obesity trends in the United States have increased; it is now a public health crisis. Obesity is dangerous because it is directly linked to higher risks for heart disease, type 2 diabetes, cancer, stroke, and mental health issues (Jastreboff et al., 2019). Obesity is associated with bias and discrimination for both men and women and is no longer a health condition associated only with civilians or nonmilitary individuals (Christian et al., 2020). The Centers for Disease Control and Prevention states that from 2017-2020, the incidence of obesity was at 41.9% in the United States (Centers for Disease Control and Prevention, 2022). It is now causing issues within the ranks of the U.S. military, with a rise in musculoskeletal injuries, absenteeism, and mental health problems (Webber et al., 2020). At the present time, 68% of active-duty service members are considered overweight or obese (Satter, 2023). In 2012, the obesity rate within the military was 10.4%, and that number rose to 21.6% in 2022. Research has shown that obesity trends within the military are mirroring national obesity trends of civilians (Satter, 2023).

It is essential to explore and understand the needs and struggles that service members face regarding the mental impact of obesity. Military service members and their families play an essential role in the security of our nation. The military service member is a cog in a well-oiled machine that protects our country from foreign and domestic threats. Service members must be fit, healthy, and ready for battle at a moment's notice. The purpose of this study was to explore the mental impact that obesity has on military service members.

Background

The military provides each soldier with physical fitness standards that must be maintained throughout their career, regardless of sex. A service member may be discharged from the service if these standards are not met. With obesity on the rise, a new threat to national security has developed (Hollerbach et al., 2022). Obesity costs the U.S. Department of Defense $1.5 billion annually (Centers for Disease Control and Prevention,2023). This cost has placed pressure on Pentagon officials to make changes to improve the health and wellness of service members (Hollerbach et al., 2022). These changes have focused on increasing physical activity and nutrition education for service members and their families at military installations and within the community surrounding those installations (Centers for Disease Control and Prevention,2023).

When a service member enters the military, they sign a contract that states that they will uphold standards set by the military for the duration of their career. The military has physical fitness standards outlined in a manual for all service members to reference; this manual is called the Army Regulation 600-9 (AR600-9). The AR600-9 manual provides service members with guidance regarding body composition standards. These standards have been established to maintain fitness, endurance, and overall health so that service members can perform their duties (AR600-9, 2019). Assessments are performed every six months to ensure that service members uphold the standards. Body fat composition is calculated using height, weight, and specific body circumference, which produces a body mass index (BMI). The maximum allowable body fat percentage for service members is based on age and sex; this maximum is 20% for males and 30% for females aged 17-20 years, 22% for males and 32% for females aged 21–27, 24% for males and 34% for females aged 28–39, and 26% for males and 36% for females aged 40 and over (AR600-9, 2019). If these standards are not upheld, some resulting consequences, including

being listed as not promotable, counseled, and not authorized to attend schools, could have a tremendous impact on a service member's career. Some service members use unsafe tactics to maintain these strict guidelines, which can lead to eating disorders and mental health issues (Masheb et al., 2019). The problem being addressed in this research is the mental effect that obesity has on service members.

Situation to Self

The researcher for this dissertation has been certified in health education, psychology, exercise physiology, and nutrition counseling. I have worked and lived within the military community for the past 23 years. During the time that I have worked with service members, I have personally seen the struggles that some face with obesity-related issues. I have assisted many service members with their weight loss journeys through exercise and nutrition advice. I am a military spouse who has lived in the military community for over 23 years. I am very passionate about serving my community and helping the community achieve optimum health and wellness through health promotion and prevention.

Professionals such as my colleagues and I work with overweight individuals and tend to focus on increasing physical activity, decreasing caloric intake, and promoting general nutrition education (Holl, 2019). We provide guidance and accountability for service members who need to meet standards. These methods are effective for health promotion and prevention. In the military, there is so much emphasis on maintaining standards and checking blocks that behavioral health aspects are overlooked. Research should be performed to examine the mental health effects of obesity on a service member. The military community is a unique population

that could benefit from substantial research that deliberately focuses on the intricate mental health aspects that involve obesity within this community (Wu & Berry, 2018).

I have observed service members resort to dangerous tactics to meet standards so that they are not relieved of duty. I have listened to their worries and fears and have observed them gain weight regardless of meeting exercise and nutrition standards. There must be more in-depth examination of the mental impact of being overweight in the military community. This study has explored various perspectives of service members regarding obesity and its mental impact to understand better how to create positive change in the future.

Problem Statement

The problem being addressed in this research is the mental effect of obesity on service members. Much research exists regarding the contributing factors of obesity and the physical effects of being overweight, but a gap has remained in research regarding U.S. military service members. Military service members have unique jobs with added stressors and standards. They confront stressors and issues that a civilian does not, including meeting daily physical fitness requirements, attending schools, deployments to dangerous locations, and extended absences from home (Krukowski et al., 2018). Obesity has been found to interfere with mood, self-esteem, quality of life, and body image in individuals outside the military (Sarwer et al., 2016). As a member of a unique population with a regimented lifestyle, the mental effects of obesity could be more extreme for a service member than a civilian counterpart and cause obesity to worsen; this condition should be researched.

Purpose Statement

The purpose of this phenomenological study was to examine the mental impact that obesity has on service members in the U.S. military. For this research, obesity was generally defined as a BMI greater than 30 kg/m^2 (Stefanovics et al., 2020). BMI was considered throughout this research because the military has deemed this measurement as the tool by which to assess physical fitness according to their standards. This transcendental, phenomenological, qualitative study was essential and necessary for multiple reasons. First, a gap exists in research regarding the mental effects of obesity. Second, studying this unique population was beneficial due to the differing stressors accompanying the lifestyle. When deployed, many service members suffer from disordered eating patterns, lack of fresh or whole foods, circumstances that are out of their control, stress of deployment, extended family separation, and lack of sleep (Cooper et al., 2020). These stressors and factors can all affect mental and physical health (Frueh et al., 2020).

Significance of Study

The first goal of this study was to explore the stressors that are unique to this community so that the study questions could be explored in depth. The second goal of this study was to focus on how obesity affects a soldier's career. This focus allowed an examination of the bias and stigma that obesity has in the military community and how it affects service members' well-being (van Beukering et al., 2021). The third goal of this study was to explore the mental impact that obesity has on the self-confidence and self-efficacy of soldiers at work and in the home environment. Self-confidence and self-efficacy can affect performance, social well-being, and emotional well-being in individuals (Lavallee et al., 2021). This area was important to study because a soldier's job is to protect and serve; if they feel as if they are lesser than others, this mindset could become dangerous for all those within their immediate circle (Legg, 2022).

Fourth, how does obesity impact service members within the community and at home? This area was important to explore because the community and the family should be a support system. If the support is negative and the service members are bombarded with negative criticisms, this condition could produce the opposite of the desired results emotionally and cause a withdrawal from the community or family unit (Corry et al., 2019). Lastly, this study explored whether obesity causes depression or anxiety within service members, providing further insight. In many instances, depression and anxiety can manifest and be expressed to others or cause further problems that manifest as physical problems such as weight gain (Solomon et al., 2022). The significance of this study is that the data gathered from it and be used to improve the mental health of service members, which in turn could improve the national security of the United States.

There were limitations to this study. This research was based on perceptions of individual experiences, which represented service members' realities (Moustakas, 1994). It was also based on answers provided by individuals, and there is a possibility that they may not have been honest. Information could have been missed. There is also a possibility that individuals provided answers based on what they believed the answers should be rather than what they believed themselves. In addition, an individual may have had a subconscious bias due to the military training they had received (Moustakas, 1994). Nevertheless, this study did reveal mental impacts that could potentially contribute to the worsening of obesity. It also provided data showing that stressors such as the bias and stigma associated with obesity within the community are worsening the issue for service members.

This study was conducted on a military installation at a center. A large population of military personnel and family members reside in this location. This location allowed the research

to be performed privately and ethically. The information obtained through face-to-face interviews was and will remain confidential, and data has been stored in a manner that can ensure the confidentiality of those involved in the research; the confidentiality of the participants was upheld through special coding. The data obtained was analyzed using ATLAS.ti software. This procedure allowed for proper coding and delivery of the information. Depression and anxiety were determined using the Patient Health Questionnaire (PHQ-9) and the General Anxiety Disorder Questionnaire (GAD-7).

Research Questions

The research questions for this study used transcendental phenomenology to derive awareness, understanding, and knowledge from the experiences of service members (Moustakas, 1994). Transcendental phenomenology focuses on epoch, noema, and noesis to understand a phenomenon. The epoch refers to the researcher's ability to truly understand the phenomenon through the service member's experiences. Neoma refers to the phenomenon or the perception of the service member. Lastly, noesis refers to the experience or act of perceiving, feeling, thinking, and judging (Moustakas, 1994). Service members are a unique population, and through their description of personal experience, we can learn to understand how they perceive obesity as a phenomenon.

To study the mental effects of obesity on service members, a researcher must first determine the central question, which asks what the phenomenon between obesity and military service members is. From this central question, supportive questions can be used to explore how obesity is recognized, accepted, and valued within the military, in addition, the feelings that are associated with obesity as it pertains to self-esteem and self-confidence.

This research study's central question was whether there is a mental effect that obesity has on active-duty service members. Three main sub questions helped to guide the research. The first explored the ways in which obesity impacts the career of service members. The second sub question required the service member to identify the impact obesity had made on them internally. The third sub question examined how obesity had impacted the service member extrinsically.

Further sub questions were necessary to guide the research, for example, questions pertaining to which unique stressors had been experienced due to participants' being service members. Military service members are subject to regular life stressors as well as more-unique stressors that involve deployments, training events, hazardous environments, and extended separation from family members (Briggs et al., 2020). Exploring the perception of stress through the service member's experience provided critical information for the study. Also, questions that explored how service members felt about the military height and weight standards were beneficial. BMI is a mathematical calculation performed by obtaining a service member's height and weight every 6 months to ensure that they maintain standards (Yang et al., 2022). This question allowed the participants to express how they felt about the standard set-in place regarding physical fitness in the military: How does struggling with obesity make you feel as a service member who must meet a specific standard based on height and weight? Weight bias is internalized because of the culture that the military breeds (Shank et al., 2019). It was essential to understand the internal struggle that a service member was undergoing regarding obesity and standards: How would obesity impact you in your current position?

Many service members who are overweight or out of standard face the reality that they could lose their jobs if they cannot meet body composition standards (Christian et al., 2020). The added stress or pressure to lose weight could impact the service member negatively, and this

aspect was important to capture for the study. Asking questions regarding how obesity was impacting a service member through social experiences with friends, coworkers, and family could provide insight into how the participants personally felt. Obesity can impact a person's life and diminish the quality of life that they experience (Sarwer & Polonsky, 2016). Questions that asked how obesity was impacting performance allowed the researcher to obtain a better impression of a service member's ability to perform the job assigned to them (e.g., performance, ability to complete tasks). Service members can have physically demanding jobs, and obesity is known to inhibit physical performance. The military requires service members to participate in daily physical activity, which could be negatively impacted by excess weight (Hollerbach et al., 2022). It was essential to determine through questions whether obesity was causing service members to feel depressed or anxious. Research has shown that service members who fall into the obese or overweight categories are more likely to screen positive for depression or anxiety (Hanson et al., 2021).

Definitions

1. *Obesity:* Abnormal or excessive fat accumulation that presents a health risk (WHO, 2023).
2. *Bias:* A personal and sometimes unreasoned judgment (Merriam-Webster, 2014).
3. *Stigma:* A set of negative and unfair beliefs that a society or group of people have about something or someone (Merriam-Webster, 2014).
4. *Mental Impact:* The impact that something has on a person's emotional, psychological, and social well-being (CDC, 2023).

5. *Service member:* Any person who has served in one of the branches of the U.S. military.
6. *Civilian:* Any person who has not served in one of the branches of the U.S. military.
7. *Self-confidence:* Confidence in oneself and in one's powers and abilities (Merriam-Webster, 2014).
8. *Self-efficacy:* An individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments (APA, 2023).

Summary

This chapter has examined and identified the struggles that obesity presents for military service members. Service members must meet strict guidelines to attend schools, pursue further career aspirations, and remain employed. Stigmas and biases regarding weight within the military community prevent soldiers from meeting standards healthily. The researcher has a background in health and human performance that provides her with the knowledge, experience, interest, and passion for the study. The significance of the research has been presented to demonstrate the importance of exploring alternative forms of obesity prevention that would be better suited for military members. The findings of this study relate to the mental impact that obesity has on military service members.

CHAPTER TWO: LITERATURE REVIEW

Overview

Obesity is a problem that has continued to increase over the years, with no end in sight. Obesity was established as a disease in 2008 by The Obesity Society (TOS). TOS defines obesity as "a multi-causal chronic disease recognized across the lifespan resulting from long-term positive energy balance with development of excess adiposity that over time leads to structural abnormalities, physiological derangements, and functional impairments. The disease of obesity increases the risk of developing other chronic diseases and is associated with premature mortality. As with other chronic diseases, obesity is distinguished by multiple phenotypes, clinical presentations, and treatment responses" (Jastreboff et al., 2019). This problem has influenced the civilian population and is now becoming a prevalent issue for U.S. military personnel. Not all service members struggle with obesity, but many military service members are overweight or obese (Webber et al., 2020), and 68% of active-duty service members who are currently serving are overweight or obese (Satter, 2023). Research has found that the number of obese service members has doubled in the past 10 years. This increase has motivated the Department of Defense to investigate several factors including diet, exercise, sleep, and stress (Satter, 2023). Service members who are overweight are at greater risk for comorbidities associated with obesity; they are at a greater risk for injury, cardiovascular diseases, and mental health problems (Webber et al., 2020). Over the years, the military has seen an increase in obesity across all age groups and ranks. This population includes the youngest members of the military (Webber et al., 2020). Obesity has both objective and subjective symptoms that should be explored, and there are also unseen impacts that obesity has on service members.

The subjective impact that obesity has on soldiers was of particular interest in this study. Mental impacts that include depression, anxiety, and disordered eating are of concern within the military community. Determining the impact that obesity has on the military community is an important part of providing a preventative plan that could be beneficial for service members and family members, as the effects of obesity on a service member carry over into the home.

The stressors that impact service members also have an impact on spouses and children. Health costs associated with obesity in active-duty service members are currently $1.1 billion per year, and these costs does not disappear once the service member has retired because some service members receive medical care for the entirety of their lives (Tanofsky-Kraff et al., 2013). Studies have found that children mimic their parents' behaviors, and if a parent is obese, children are more likely to have obesity issues. As such, 15% of the children of active-duty service members are currently considered obese, and this figure represents an issue for the U.S. military because these children are more likely to grow up and enlist in the service. Obese service members and family members experience more depression and anxiety because they face disruptions to normal daily life that include dangerous combat rotations and difficult reintegration processes (Tanofsky-Kraff et al., 2013). These issues have been explored through this literature review.

The standard approach to obesity within the military is to enroll the service member into a body composition program that allows the service member to focus on nutrition and physical fitness (AR600-9). This program flags an individual so that they are not able to attend schools or trainings that could help further their careers until they meet military standards. The program focuses on limiting caloric intake, increasing physical fitness, and losing weight (AR600-9). The Army Body Composition Program (ABCP) was developed to provide leadership across the Army

with a means by which to enforce the military standards. It is meant to be a way for the military to support a service member so that they can lose weight and meet the standards to which they are contracted to adhere as a member of the U.S. military (AR600-9). All service members are subjected to height and weight testing at a minimum of every 6 months. The few exemptions to this policy include soldiers with major limb loss, soldiers on established continued active duty or continued active reserve status, pregnant and postpartum soldiers, soldiers who have undergone prolonged hospitalization for 30 continuous days or greater, and new recruits (AR600-9). Being placed in the ABCP comes with consequences that include being notified and counseled, flagged as non-promotable, non-assignment to a command post, lack of authorization to attend military training schools, and requirement to provide a supervisor with a Soldier Action Plan (AR600-9).

Some leaders in the military exhibit weight bias (Christian et al., 2020), which presents as negative thoughts or feelings towards an individual who does not fit the standards. Many service members who do not meet the standard for body composition are stereotyped and marked as lazy, incompetent, lacking willpower, and lacking determination (Christian et al., 2020). These stereotypes lead to discrimination against service members based on body composition and barriers, including specific jobs, schools, training, pay, promotions, and harassment from peers (Christian et al., 2020). Weight bias and stigma can have a devastating impact on an individual's mental health. The bias and stigma associated with weight in service members can lead to mental impacts associated with obesity. This research was performed to explore the significance that the mental impact of obesity has on service members.

Gap in Literature

A gap in the literature exists regarding the mental impact that obesity has on service members. In many ways, mental impact cannot be observed objectively, and there are few ways to effectively measure the mental impact of a factor on an individual. A lack of subjective information also exists regarding the direct mental impact that obesity has on active-duty service members. These deficits have led to a lack of knowledge in these areas. A significant amount of research has been performed regarding the physical symptoms and measurable diseases that are linked to obesity rather than the unseen or mental impacts. Research regarding obesity in service members has focused on military standards, fitness, and nutrition-based means by which to meet the standards. More data exists regarding increasing physical activity and reducing caloric intake. Minimal research has examined the mental impact obesity has on service members and their ability to perform their duties.

This study addressed some of the gaps in the literature by identifying the significance of understanding the mental impact obesity has on service members to help prevent further obesity in the future. It included a focus on the mental health of individual service members who were struggling with obesity and seeking behavioral health intervention. The target group included service members in the U.S. military branches who had experienced obesity, stigma, and bias associated with being overweight.

Theoretical Framework

This phenomenological study used transcendental methods to explore the feelings, personal experiences, perceptions, and memories associated with obesity by a service member. Moustakas defines transcendental phenomenology as a philosophical approach to qualitative research methodology seeking to understand human experience (Moustakas, 1994). The

Moustakas method involves determining a phenomenon to investigate and then analyzing and representing that phenomenon. The phenomenon is characterized through interviews with those experiencing the phenomenon and then comparing so that the essence of the shared phenomenon can be defined (Moustakas, 1994). This study focused on the lived experience of service members who did not meet military height and weight standards.

The transcendental phenomenological approach was chosen specifically for this study. The features of transcendental phenomenology, which are outlined by Moustakas in his book, include the following:

1. It is the first method of knowledge because it begins with things themselves, which are the final court of appeal for all we know. It is a logical approach because it seeks to identify presuppositions and "put them out of play."
2. It is not concerned with matters of fact but seeks to determine meanings.
3. It considers real essences and "possible" essences.
4. It offers direct insight into the essence of things, growing out of the self-givenness of objects and reflective description.
5. It seeks to obtain knowledge through a state of pure subjectivity, while retaining the values of thinking and reflecting (Moustakas,1994).

Transcendental phenomenological research focuses on the epoch, noema, and noesis. Epoch refers to the researcher's ability to truly view the phenomenon. Neoma refers to the phenomenon or the perception. Lastly, noesis refers to the experience or act of perceiving, feeling, thinking, and judging (Moustakas, 1994). Using this framework, the researcher was able to explore the presentation or act of the phenomenon, which is the experience that the participant has had. In addition, the perception of the phenomenon was described to the researcher so that analysis and

understanding of the phenomenon could be developed (Moustakas, 1994). This phenomenological approach allowed the researcher to study subjective information; thus, the use of such a framework for this study allowed the researcher to obtain a better understanding of the phenomenon of obesity in service members.

Ontological assumptions examine the nature of reality and its characteristics, and the researcher embraced the idea that each participant had experienced a unique perspective that could contribute to shared experiences (Creswell & Poth, 2018). According to Creswell and Poth, for something to be real, it must only be experienced in the mind of the participant in a situation. Thus, there was always the possibility of many realities among the participants, as each of their experiences had been experienced by them alone. While the participants may have had similar experiences, each experience was unique to their thoughts and feelings. The researcher was aware of their personal experiences and knowledge of military personnel and standards and employed this understanding while performing the interviews and observations with the service members. Throughout the research process, different themes emerged from the different perspectives of individuals and were shared with the participants to ensure that their perspectives had been correctly interpreted.

A social constructivism framework that seeks to understand the world in which service members reside would allow a better understanding of the unique experiences within this culture (Creswell & Poth, 2018). The U.S. military is like a world within a world. The researcher focused on the processes the participants had undergone to meet the cultural standards established within the U.S. military system. Historical and cultural norms play a role in the complexity of the mental impact that obesity has on service members. The views and perspectives of the participants allowed a better understanding of issues service members

experience. This framework allowed the researcher to use open-ended questions to gain knowledge and understanding of the participants' experiences within the world in which they resided.

Literature Review

This literature review presents the available research regarding the prevalence of obesity, dangers of obesity, military body composition standards, biases and stigmas surrounding obesity in the military, and mental impacts of being overweight on service members; these are important factors when evaluating wellness. At times, moving more and eating less do not provide the results that obese individuals are seeking. To better understand what is necessary for weight loss, researchers have examined different aspects of wellness.

Many comorbidities, such as cardiovascular disease, musculoskeletal injuries, diabetes, stroke, and cancer, have been associated with obesity (Jastreboff et al., 2019). To address the issue of obesity, experts have focused research on amounts of physical activity, caloric intake, and general education of service members; however, in some instances, this approach has not been sufficient (Webber et al., 2023). While these lifestyle changes are necessary, there is a need for more interventions to reduce the prevalence of obesity.

Obesity has subjective impacts on service members and their families. These impacts include depression, anxiety, and disordered eating patterns (Tanofsky-Kraff et al., 2013). The connection between obesity and the unique stressors that face service members and their families and promote unhealthy behaviors has also been explored in this literature review.

The studies presented in this literature review support the need for research regarding the mental impacts of obesity on service members and the need for changes in the way obesity is considered within the military community. Research has supported the idea that obesity causes

mental health issues; however, little research demonstrating an association between mental effects and obesity in service members is available.

Prevalence of Obesity

Prevalence was an integral part of this research study. Prevalence is a proportion that measures disease occurrence of any type of health condition, exposure, or other factor related to health or the proportion of persons in a population who have a particular disease or attribute (Buitrago-Garcia et al., 2022). The reason that prevalence was so crucial in this study is that it can be used to measure the magnitude of obesity within the military community. With proper measurements, prevalence can be used to obtain the resources necessary to develop prevention programs within the public health realm (Buitrago-Garcia et al., 2022).

Numerous studies have been published regarding the prevalence of obesity in the United States. Throughout history, the perception of obesity as an illness or disease has varied by culture, and obesity is a status symbol in some cultures (Jastreboff et al., 2019). Today, it is considered dangerous and unhealthy, and some organizations have listed it as a chronic disease. The available literature shows that the prevalence of obesity is on the rise and has been on the rise for the past 30 years (Wen et al., 2022; Wang et al., 2020; Police & Ruppert, 2022; Ward et al., 2019).

Regarding obesity, the terms high and low are used to describe prevalence. Wang et al. predict that by 2030, 78% of the population in the United States will be overweight or obese due to lifestyle choices, poor eating, and sedentary behaviors, showing that obesity is increasing at an alarming rate in the United States (Wang et al., 2020). Their study also suggests that the cost of health care in the United States will increase due to the number of people who will be obese and

experience comorbidities associated with obesity. According to their research, healthcare costs double every decade (Wang et al., 2020).

Ward et al. predict that by 2030, one out of every two adults will be obese. Their research has also suggested that the prevalence of obesity will continue to increase, and that severe obesity will be the most common category nationwide among specific populations by 2030 (Ward et al., 2019). Their study analyzed data from 6 million adults and found they were at risk for higher mortality, morbidity, and healthcare costs. Their research also noted that lower-income families were at higher risk of being associated with severe obesity categories (Ward et al., 2019).

Research by Wen et al. suggests that there are obese individuals who are metabolically healthy and unhealthy, suggesting different categories within obese individuals (Wen et al., 2022). Their research focused on determining the prevalence and trends of different types of obesity within the United States. According to Wen et al., there are two types of obesity: metabolically healthy and metabolically unhealthy. Metabolically healthy describes individuals who meet the criteria for obesity but exhibit none of the cardiometabolic risk factors associated with obesity. These risk factors include cardiovascular disease, type 2 diabetes, dyslipidemia, osteoarthritis, sleep apnea, cancers, and all-cause mortality. A metabolically unhealthy obese individual meets the criteria for obesity and exhibits the risk factors associated with cardiometabolic risk factors (Wen et al., 2022). Based on these categories for obesity, their research has suggested that obesity is on the rise in the United States but that not everyone is unhealthy in that category. Some individuals who are overweight do not show any signs of risk factors; they are simply overweight (Wen et al., 2022).

The prevalence of obesity plays a role in the national security of the United States. Civilians are not the only individuals who struggle with obesity; service members are not immune. The number of obese service members is increasing and has doubled in the past decade (Satter, 2023). Obesity among service members has steadily increased yearly; in a 12-month study, service members' mean monthly obesity rates rose by 0.33% (Legg et al., 2021). The percentage of active-duty service members who are obese is currently 68% (Satter, 2023).

Obesity directly affects the health, readiness, and retention of service members. Many service members have been separated from service due to failure to meet height and weight standards. Satter states that the military has reported that inconsistent use of BMI and the social stigma surrounding obesity is damaging the military's efforts to combat obesity. Obesity is not only a national security risk due to costs; Satter also found that obesity is a primary contributor to musculoskeletal injuries, which remove soldiers from the battlefield (Satter, 2023). Research has shown that obesity within the military could lead to a severe national security risk because 71% of 17–24-year-olds in the United States do not meet the requirements for military service (Legg et al., 2021).

In addition, obesity detracts from the professional perception of the U.S. military and compromises readiness through injuries associated with obesity. Legg et al. suggest that overeating and stress throughout the Covid-19 pandemic could have been a factor in the obesity problem seen in today's service members (Legg et al., 2021). Today's youth are the military leaders of tomorrow, and the prevalence of obesity negatively affects recruiting due to the ineligibility of recruits to meet the standards (Police & Ruppert, 2022).

The Office of Disease Prevention and Health Promotion has a goal to improve the overall health and livelihood of U.S. citizens; in this regard, they establish goals, one of which is to

decrease obesity rates in adults and children. They have reported that regardless of efforts to educate the public regarding healthy eating and regular physical activity, obesity rates have not declined (Police & Ruppert, 2022). The U.S. military noticed during World War II that the muscular and cardiorespiratory endurance of soldiers was impeded by obesity and that it was a significant issue on the battlefield. The government regularly changes the standards for the U.S. population to meet the needs of the military (Police & Ruppert, 2022). Police and Ruppert further found that leadership in the military strongly influences the behavior of soldiers, good or bad. Diseases associated with or linked to obesity pose a threat to the economy of the United States (Sarwer & Polonsky, 2016).

Dangers of Obesity

Reports related to the dangers of obesity list numerous comorbidities (Meyer & Cole, 2019; Csizmar & Irwin, 2021; Manjunatha, 2022; Pan et al., 2021). Obesity is a complicated disease that includes multiple factors. Inadequate physical activity or diminished activity level as a person grows older is a risk factor for obesity (Manjunatha, 2022). Obesity is multifaceted and requires several different techniques to combat the disease. Other factors include unhealthy eating habits, socioeconomic status, psychosocial factors, predisposition for obesity, endocrine factors, alcohol use, and medications that cause weight gain. According to Manjunatha, health issues that are associated with obesity include heart attack, type 2 diabetes, high blood pressure, stroke, gallstones, gout, sleep apnea, breast cancer, hypercholesterolemia, osteoarthritis, varicose veins, abdominal hernia, large-bowel cancer, lower back pain, infertility, and inability to breathe correctly (Manjunatha, 2022). In his report, Dr. Manjunatha states that obesity is associated with emotional illnesses that include depression, anxiety, rage, and solitude. He also found that obese

parents are more likely to have obese children. Dr. Manjunatha believed that one should combat obesity with prevention and control measures. His methods include healthy dieting, regular exercise, proper hydration, the use of appetite suppressants, and surgical interventions (Manjunatha, 2022).

Research has shown that obesity causes inflammation and inflammatory diseases, including metabolic disorders, low-level inflammation, oxidative stress, insulin resistance, nonalcoholic fatty liver disease, cardiovascular disease, enteritis, and bowel cancer (Pan et al., 2022). Pan et al. suggest that obesity causes individuals stress that results in apoptosis, pyroptosis, and necrosis, all of which are forms of cell death. According to their research, pyroptosis causes tissue inflammation, and to prevent and treat obesity, it is essential to understand the mechanism of cells in obesity (Pan et al., 2022).

Obesity is considered one of the most significant public health issues of the 21st century. It has been found to put the body's vital systems under strain and to cause the physiological and psychological symptoms that manifest (Robinson et al., 2020). Dangers of obesity include its normalization. When obesity is normalized, individuals do not consider the health risks to be as severe or detrimental to their well-being. For a person to take action to make a change, they must first know that they have a problem. Without knowing, individuals will not change their behaviors. Proper weight management cannot be accomplished if an individual is unaware of their overweight status. Robinson and colleagues found that individuals who identified as overweight experienced worse mental and physical health than those who did not. Their research found that due to psychological effects, those individuals were more likely to engage in unhealthy lifestyle choices and suffer from health problems rather than attempting to lose weight (Robinson et al., 2020). Due to the stigmatization that comes with obesity, obese individuals are

viewed by some as lacking self-control and intellect. Robinson et al. found that some individuals felt as though they were treated as less human because of their obesity issues (Robinson et al., 2020). These authors argue that knowing that one is obese can be beneficial in providing the proper amount of distress to incite change in an individual. Obesity is a danger to mental health as well as physical health.

Obesity reduces life expectancy by up to 10 years (Wang et al., 2021) and contributes to health issues through comorbidities such as heart disease, stroke, cancer, diabetes, and musculoskeletal injuries (Jastreboff et al., 2018). Obesity causes structural abnormalities, functional abnormalities, obstructive sleep disorder, hypertension, asthma, psychiatric diseases, polycystic ovary syndrome, fatty liver disease, gastrointestinal diseases, and gallbladder disease (Jastreboff et al., 2018). Obesity affects quality of life, physical health, and life expectancy (Yang et al., 2022). Obesity can also lead to chronic stress, anxiety, and depression (Vafiadis, 2021).

Obesity within military branches is dangerous because it has consequences for the individual service member, unit readiness, and associated healthcare costs (Meyer & Cole, 2019). As mentioned previously, obesity has cost U.S. taxpayers $1.1 billion per year to treat the obesity-related injuries of active-duty service members (Csizmar & Irwin, 2021). Csizmar and Irwin focused on whether intervention programs were working to significantly change the obesity issues faced by the U.S. military. They found that when given more personalized and accessible interventions such as one-on-one or individualized coaching, individuals experienced better results in losing weight (Csizmar & Irwin,2021). The comorbidities of obesity influence the performance of an individual service member, which in turn influences the performance of the unit. Obesity causes the military healthcare system to spend $1.1 billion on musculoskeletal injuries and treatment for chronic health conditions associated with obesity (Meyer & Cole,

2019). Inability to meet military standards could lead to separation from the service, inability to further their career, or eating disorders and dangerous behaviors to lose weight quickly (AR600-9, 2019). If a service member cannot perform duties due to obesity-related reasons, they put others on their team at risk (AR600-9, 2019).

Obesity can lead service members to practice risky behaviors that increase health risks, and these behaviors can lead to eating disorders (Masheb et al., 2019). Eating disorders include fasting, skipping meals, vomiting, and binge eating. Other risky behaviors include service members' wearing rubber suits in a sauna and taking laxatives or diuretics. Service members participate in these behaviors that so they can satisfy the weight standard if they are obese (Masheb et al., 2019). Excessive exercise without proper nutrition was also found to be a common practice in research by Masheb et al., who found that unique factors, including trauma, post-traumatic stress disorder (PTSD), and combat exposure, play a role in the risky behaviors (Masheb et al., 2019). Recent studies have also found that military height and weight standards are significant stressors that are directly related to mental health issues such as eating disorders in active-duty service members. These eating disorders include binge eating and weight gain. Such issues have led to an increase in medical and psychiatric morbidity and increased healthcare costs (Masheb et al., 2019).

Military Body Composition Standards

The U.S. military has set standards for all military personnel. Each branch of the military has its own body composition standards that must be met. One of the top priorities of military leaders is mission readiness, so they have established standards for service members (Police & Ruppert, 2022). These standards include body composition and physical fitness. The military has

strict body composition standards that must be met for a soldier to be considered fit for duty physically. The AR600-9 guides how to determine a service member's BMI using weight for height standards and circumference measurements for males and females (Police & Ruppert, 2022). To determine a healthy weight, the military uses maximum-BMI standards (Police & Ruppert, 2022).

The ABCP flags an individual so that they are not able to attend schools or trainings that could help further their careers until they meet military standards. This program focuses on limiting caloric intake, increasing physical fitness, and losing weight (AR600-9). The ABCP was developed to provide leadership across the Army with a means by which to enforce the military standards. It is meant to be a way for the military to support the service member so that they can lose weight and meet the standards to which they are contracted to adhere as a member of the U.S. military (AR600-9). All service members are subjected to height and weight testing at a minimum of every 6 months.

Military standards require each branch to determine testing and fitness programs that promote combat readiness, minimize injuries, and meet service-specific operational mission requirements (DoDI 1308.03, 2022). The standards use science-based programs based on occupation, relevance, gender, and age to test service members. The goal of the military branches is to ensure the physical readiness of the service members. Physical readiness is the capacity to perform the duty of military service to include combat (DoDI 1308.03, 2022).

The U.S. military believes that body composition is a crucial health and fitness parameter (Harty et al., 2022). The standards promote health and wellness for service members through healthy lifestyle behaviors and physical fitness. The standards are meant to ensure that service members are healthy in the short term as well as the long term. The military favors low body fat

levels achieved through holistic health and fitness. The standards are believed to ensure positive performance outcomes and proper nutritional focus (Harty et al., 2022). When the body composition standard was first implemented, it was meant to eliminate underweight individuals from service. Now, the standards are used to eliminate overweight individuals from the service (Harty et al., 2022).

New guidance from the Army focuses on a holistic approach to health and fitness through physical and mental domains. The standards that are upheld have existed for over 150 years, changing slightly over time. Body composition standards began as subjective, based only on visual observation, and have evolved into an objective screening process (Harty et al., 2022). Along with body composition standards, active-duty service members are also required to pass a physical fitness assessment. This testing assesses muscular endurance, strength and power production, load carrying, aerobic fitness, and other militarily relevant tasks (Harty et al., 2022).

Body composition impacts the performance of service members. The military is aware that excess fat impedes aerobic performance (Harty et al., 2022). The military also tests muscular endurance, strength, and power. Endurance is tested through pushups and sit-ups. The strength and power of service members are tested by agility drills, lifting, carrying, and dragging (Harty et al., 2022). The performance of these drills is impacted by the amount of fat in the body.

There are several methods for determining body composition. The military allows the use of body fat calculation, waist-to-height ratio, abdominal circumference, height and weight screening, or combinations of listed methods (DHA, 2023). The military uses BMI to determine whether a service member is underweight or overweight. These methods have been chosen by the military because they are cost-effective, easy to learn, and able to be implemented in

numerous environments (DHA,2023). The military height and weight standards are to be upheld when in garrison or while deployed.

It is the duty of Congress to ensure that the military maintains a physically capable force (CRS, 2022). Some members of Congress believe that the body composition standards have become outdated and need to be updated. They believe the current standards do not predict a service member's ability to perform military duties (CRS, 2022). Congress is concerned that the current standards will have an impact on recruiting and that if standards are changed, weakening of the military force is possible.

A service member is seen as a tactical athlete: They are a service professional, and it is their duty to be always fit and healthy (Keefer et al., 2022) to ensure readiness. There are consequences for service members who fail to meet standards. Service members who do not meet standards must make all necessary efforts to improve their BMI through the resources each duty station offers (Keefer et al., 2022).

The resources available to service members include physical fitness trainers, exercise prescriptions, and nutrition counseling (Keefer et al., 2022). The body composition program is designed to provide service members with the support necessary to succeed at weight loss. It is also designed to promote a specific appearance based on the ideal military service member.

Weight Bias, Stigma, and Mental Impact

Weight bias, stigma, and discrimination are negative attitudes and beliefs related to the weight of individuals (Alimoradi et al., 2019). These beliefs lead individuals to have negative emotions towards those who are overweight and to discriminate against them. Research has shown that weight bias, stigma, and discrimination can lead to chronic stress, depression, and

other psychological issues (Jung et al., 2019; Alimoradi et al., 2019; Brown et al., 2022; Shank et al., 2018; Christian et al., 2020; van Beukering et al., 2021) and has suggested that these conditions are linked to weight gain. Service members can experience weight bias, stigma, and discrimination due to standards that are in place.

Jung et al. have focused on the chronic stress that obesity causes in individuals. Their research has found that stress can lead individuals to indulge in overeating, which causes weight gain over time (Jung et al., 2019). Higher levels of the hormone cortisol in individuals indicate that the ability to cope with stress is hindered; this process is associated with weight gain, which increases the chances of accessory comorbidities. Jung et al. studied cortisol levels and how it is directly linked to increased eating of foods high in carbohydrates and fats. In addition, they explored the psychological consequences of internalized weight bias and found that in some individuals, having high cortisol levels causes weight gain (Jung et al., 2019). They further found that psychosocial aspects may be the cause of chronic stressors such as stigmatization and discrimination toward individuals with obesity. They found that these negative attitudes have an impact on overall wellness, including weight, and that there is potential for individuals to become socially or emotionally disengaged from the social environment because of high cortisol levels (Jung et al., 2019).

Brown et al. have explored the impact of weight stigma on individuals. They define weight stigma as negative attitudes and beliefs that devalue people based on their weight; these attitudes include bias, discrimination, stereotyping, and social exclusion (Brown et al., 2022). They state that stigma impacts an individual's well-being through psychosocial means, depressed mood, increased metabolic risk factors, and self-esteem issues. They further state that discrimination has played a role in public health policies throughout history and that it has led to

societies and government's blaming of individuals. They argue that governments should act to provide policies that address environmental and societal factors such as obesity without blame, ridicule, disgust, or dislike (Brown et al., 2022).

Weight stigma and bias have increased through the years, and individuals are experiencing negative attitudes from educators, employers, healthcare professionals, media, and friends and family. This condition is making a negative impact on individual health because it impacts an individual's health care and support systems (Brown et al., 2022). The research suggest that internalized weight bias and stigma causes depression, anxiety, low self-esteem, and worsening metabolic health. Brown et al. found that many in society believe that obesity is a choice that one makes and that these attitudes undermine obese individuals in their efforts to access treatments that could be beneficial to their overall well-being (Brown et al., 2022).

A systematic review and meta-analysis by Alimoradi et al. found that weight stigma and bias can cause psychological distress in individuals who are suffering from obesity. They found that stigma can come from both self-stigma and perceived stigma from outside sources. Individuals who have been found to discriminate against obese individuals include doctors, nurses, psychologists, employers, employees, teachers, educators, peers, parents, and children (Alimoradi et al., 2019). Weight stigma was found to be directly linked to BMI, inability to lose weight, poor treatment compliance, and quality-of-life issues. This research showed that weight stigma leads to short- and long-term psychosocial consequences, including depression, anxiety, low self-efficacy, and substance abuse disorders (Alimoradi et al., 2019).

Outside the military, weight bias and stigma have led individuals to experience higher levels of depression, anxiety, and chronic inflammation; higher levels of cortisol; worsened glucose regulation; metabolic dysfunction; and worse self-rated health outcomes (Shank et al.,

2018). In the military, service members must focus on fitness, weight, and appearance (lean and muscular); thus, the stigma and weight bias are internalized (Shank et al., 2018). Being overweight or obese in the military can lead to service members' experiencing weight-based stigma and discrimination (Shank et al., 2018). These stigmas and biases lead to negative thoughts and behaviors towards those who fall into the overweight category. Many service members face consequences that far outweigh those of their civilian counterparts due to the weight stigma and bias to which they are subjected at work.

Military culture promotes a specific image for a soldier that includes a lean, muscular appearance as the norm (Christian et al., 2020). In the military, weight bias and stigma can lead to leadership's looking down on a service member. Often, service members who are obese are seen as having poor leadership skills, lacking in self-discipline, possessing a low ability to mentor others, being lazy or less competent, and lacking in self-control (Christian et al., 2020). The consequences of discrimination from leadership can lead to the denial of career advancement opportunities, which can lead to an unjustified impact on the service member (Christian et al., 2020).

A study of 134 active-duty service members found that weight-based stigma severely impacted service members' emotional and mental health well-being. Other studies have found that stigma and bias impact health negatively and cause further psychological distress and depression, ultimately leading to unemployment, social problems, poverty, and increased societal costs (van Beukering et al., 2021).

Health-related stigma influences sustainable employment and well-being, according to a study by van Beukering et al. Obesity is considered a disease, and there is a point at which it can cause an individual to be physically disabled. This effect can have an impact on the individual,

their family unit, and society due to loss of employment and can lead to social problems, poverty, increased health costs, and psychological distress (van Beukering et al., 2021). These authors found that individuals who face discrimination at work due to a disability often have not been provided with the support needed to succeed in the environment. They also found that individuals are often subject to lack of advancement, limited promotions, and limited training opportunities; denied raises; and encouraged to leave their jobs. Some soldiers faced discrimination by leadership and were forced to perform menial jobs that were insulting (van Beukering et al., 2021).

Wu and Berry conducted a systematic review that discovered associations between weight stigma and eating disorders, depressive symptoms, anxiety, self-esteem, body image, interpersonal sensitivity, isolation, social phobia, and hostility (Wu & Berry, 2018). They determined that personal perception of discrimination leads to higher levels of stress and greater adverse physiological health of individuals (Wu & Berry, 2018). The review concluded that individuals who experience higher levels of discrimination based on obesity are at a higher risk of increased depression and anxiety (Wu & Berry, 2018). The authors found that the more weight stigma that an individual had encountered, the worse were their physiological and psychological health symptoms. Their research showed there was a correlation between weight stigma and higher levels of cortisol and C-reactive protein. The psychological effects of long-term weight stigma included interpersonal sensitivity, social isolation, social phobia, suspiciousness, hostility, phobic anxiety, perceived stress and dysthymia, drug dependence (legal and illegal), manic or hypomanic episodes, panic, PTSD, fear, and antisocial behavior (Wu & Berry, 2018).

Deployment and training events are two of the most significant stressors that service members face due to the risks associated with the events (Briggs et al., 2019). Service members

are separated from family members for long periods, leading to strained relationships with spouses and children (Briggs et al., 2019). Briggs et al. examined the unique stressors that military service members face and the risks for mental health problems within the military family unit. The family of a service member is impacted by the environment and military lifestyle. The service member is the central focus of the household, and all activity in the household revolves around the service member and what is specifically required of them. Stressors for a military member include separation, disruption of relationships with their spouse and children, and disruption of routines (Briggs et al., 2019).

The stress that a military service member and family unit continuously face has been found to cause mental health impacts. It can cause behavioral and emotional issues that are not experienced within a civilian family unit. For a service member, there is a heightened risk of depression, suicidal thoughts, and lower quality of life when in active combat zones (Briggs et al., 2019). These effects can be brought home with the service member during the reintegration process. The report by Briggs et al. shows the correlation between the service member's well-being at work and describes how it spreads to the family unit within the home. Their findings further show that a positive home environment is a beneficial part of a resilient family unit.

A highly unique study performed by Tanofsky-Kraff et al. explored how obesity impacted service members and their families. This study examined the stressors that service members endure that impact obesity and found that stress affects them both psychologically and physically. The list of stressors includes longer and more frequent deployments, combat, exposure to heavy casualties, warzone deployments, unit reassignments, and unexpected mobilizations of Reserve units (Tanofsky-Kraff et al., 2013). Spouses are affected when a partner deploys due to the stress of their spouse's being deployed, and, in dangerous situations, they

experience stress that can include marital discord and financial strain from living in separate locations. The potential physical and psychological trauma that their returning spouse is experiencing impacts them as well. The study found that a lack of social support during a deployment also impacted how the spouse was able to cope with stress, especially in cases in which the individual was new to the military or pregnant. Children are also impacted physically and psychologically by the stress of a deployed parent's reintegration into the home after a deployment. These children have higher levels of depression, which contributes to obesity in military children (Tanofsky-Kraff et al., 2013).

Military life also leads to disordered eating patterns of service members, spouses, and children, which can lead to obesity. Service members are at risk for disordered eating patterns that include binge eating and extreme food restrictions (Tanofsky-Kraff et al., 2013). It has been found that spouses and children of service members use food to cope with the stress they experience living a military lifestyle. Children see parents who are participating in extreme weight loss practices, and they tend to emulate those behaviors, placing them at risk for excessive weight gain (Tanofsky-Kraff et al., 2013).

The military maintains weight management programs for active-duty service members. Those who fail to meet the military height and weight standards are enrolled in the ABCP, which focuses on healthy diet and physical activity (Tanofsky-Kraff et al., 2013). Resources exist for military children as well. The Resource Center for the Prevention of Military Child Obesity, which maintains an interactive website, is available for children who need to lose weight (Tanofsky-Kraff et al., 2013). This study found that the military family unit is impacted by obesity. The family unit is impacted physically and psychologically by obesity.

Mental health disorders are associated with obesity, and psychological distress has been found to interfere with losing weight (Wu & Berry, 2018). Depression is linked to serotonin deficiency, which can lead to carbohydrate cravings and weight gain (Vafiadis, 2021). Obesity affects an individual's quality of life through the inability to perform physically, which leads to social isolation and loneliness and adds to the difficulty of coping with hardships experienced in life. Family members who exhibit weight bias and stigma can affect an obese individual and lead to low self-esteem and quality-of-life issues (Vafiadis, 2021). Vafiadis found that obese individuals have compounded problems because depression can lead to a lack of energy and desire for an individual to participate in activities. Food is often used to cope with chronic stress, anxiety, and depression (Vafiadis, 2012).

Rindler et al. note that obesity is the fifth leading cause of death worldwide. This ranking is due not only to the comorbidities that are objectively associated with obesity but also to subjective issues such as mental health. They found that people with mental disorders live less years than those who do not suffer from mental illness (Rindler et al., 2023). Their study further found that obese people were more likely to suffer from a mental illness and that the likelihood increased as individuals aged (Rindler et al., 2023). Rindler et al. employed a survey to study the correlation between BMI and mental health and depression status.

Studies have evaluated the link between obesity and psychological distress (Martins et al., 2019; Steptoe & Frank, 2023). In the past, a person who was overweight was thought to be wealthy or have a high social status, suggesting that they had strong mental and physical health; however, this is no longer the case (Steptoe & Frank, 2023). Research by Steptoe and Frank involved longitudinal studies of associations between body weight and psychological distress. Their findings included an association of higher rates of depression with obesity. The rates of

depression were shown to become progressively higher with higher weight. Specific symptoms that were associated with depression in this study included low mood or anhedonia, appetite changes, sleep issues, fatigue, concentration problems, and suicidal ideation (Steptoe & Frank, 2023). This study also reported that mechanisms linking high body weight with psychological distress were weight stigma and discrimination, hypothalamic–pituitary–adrenocortical axis dysregulation, and systematic inflammation. Weight discrimination leads to overweight individuals' feeling undervalued and undermined. The research shows that stress response system of overweight individuals is hyperactive. Obesity causes systemic inflammation due to immune system disturbances (Steptoe & Frank, 2023).

Masheb et al. have shown that the mental impact of attempting to satisfy a weight standard is associated with eating disorders in active-duty service members. They cite that trauma, PTSD, and combat exposure contribute to the mental impact that obesity has on soldiers. They state further that the consequences of not satisfying the weight standard include additional training burdens, stigma, and potential separation and that these effects are cause for extreme behaviors such as purging, diuretic and diet pill use, and dieting and fasting (Masheb et al., 2019).

According to Martins et al., obesity is associated with cognitive and behavioral changes. The research conducted by this team focused on the link between obesity and neuropsychiatric disorders, including mood disorders, schizophrenia, and dementia (Martins et al., 2019). These authors state that obesity is linked to an increased risk for dementia. Their research focused on the inflammation that obesity causes in the body and how this will trigger the cognitive and behavioral changes associated with neuropsychiatric disorders; the disorders that were studied were mood disorders, schizophrenia, and dementia. The study found that obese individuals are at

higher risk for problems associated with self-image and self-depreciating perception that leads to depression (Martins et al., 2019). The authors suggest that certain ingested carbohydrates alter a person's motivational drive as well as their serotonergic and stress response systems in negative ways. They further note that the diet of an individual who is schizophrenic is composed mostly of saturated fat, leading them to be at a higher risk for metabolic syndrome (Martins et al., 2019). Dementia in obese individuals could result from production of inflammatory mediators and hormones, vascular dysfunction, insulin resistance, and gut-related microbiota. The research found that compounding factors are involved in the relationship between obesity and individual disorders (Martins et al., 2019).

Other studies have focused on mental consequences and psychological interventions related to obesity (Chu et al., 2018). Chu et al. have studied the adverse psychological effects of obesity on the human body. Their research suggests that obesity is strongly associated with severe psychiatric disorders such as depression, emotional and behavioral disorders, low self-esteem, motivational disorders, eating disorders, impaired body image, and low quality of life. They state that medication without psychological intervention therapy is insufficient to assist obese individuals. Their research further found that, in many cases, obesity is a cause of depression, low self-esteem, eating disorders, and body image dissatisfaction (Chu et al., 2018). They also point out that their results were dependent upon the age and sex of the individuals participating in the study. They examined the mental and psychological consequences of obesity, which included depression, eating disorders, body image dissatisfaction, low quality of life, and stress. They also evaluated psychological interventions for obesity treatment (Chu et al., 2018). Their results suggest that cognitive and behavioral therapies should be used with lifestyle interventions; the listed psychological therapies are behavioral therapy, cognitive therapy, and

hypnotherapy. Behavioral therapies focus on self-control, cognitive therapies focus on changing negative thoughts and beliefs, and hypnotherapy focuses on inducing deep relaxation in individuals who are obese or overweight (Chu et al., 2018).

Robinson et al. assembled a model of self-identification of overweight and health outcomes; the model provides insight into the mental path that an individual may take (Robinson et al., 2020). The model also specifies what occurs when an individual has a self-perception of being overweight. First, the individual perceives themselves to be overweight, then they experience social rejection concerns and internalization of weight stigma. After those thoughts appear, psychological distress that consists of unhealthy coping strategies, impaired effortful regulation, and poorer mental health outcomes sets in. This process leads to a reduction in healthy protective behaviors and leads to weight gain and overall ill health (Robinson et al., 2020). Their report indicates how obesity impacts an individual mentally as well as physically.

Summary

This literature review has presented the information that is available regarding the mental impact that obesity has on active-duty service members. The literature shows that the prevalence of obesity is rising in the civilian population as well as the military population. To understand and identify gaps in the literature, it was essential to examine obesity prevalence, the dangers of obesity, body composition standards, weight bias and stigma, and the relationships between obesity and mental health. Obesity is a complex issue that involves several different aspects.

Studying the prevalence of obesity is important for gaining an understanding of how large the problem has become. The literature shows that the prevalence of obesity is rising. It has become a problem that can no longer be ignored. It has become a public health emergency as

well as a national security issue. It is found in adults as well as children, of all races, and all sexes. It is a problem that is found in the private sector as well as the military.

The dangers associated with obesity lead to a long list of problems, both seen and unseen. Obesity leads to numerous physical and psychological disorders. Objective problems are those that can be measured using scales, tape measures, blood pressure machines, or blood tests. Subjective problems are those that the service member feels; however, they are not seen or measured easily, and they are generally self-reported.

Heart disease, metabolic disorders, depression, and anxiety are only a few of the disorders associated with obesity. These comorbidities add to the increased risk of death for obese individuals. The U.S. military has a program in place to assist service members in returning to standards. This program implements nutrition education and physical fitness requirements that must be followed to reach the standards put in place by the leadership.

The ABCP was established to enforce standardization across the military. The standards in place provide a service member with a specific BMI target based on their height and weight. This testing of service members is provided by leadership every 6 months to maintain standards. If a service member is not within the standard, they are enrolled in the ABCP and provided nutrition education and physical fitness training to improve their ability to pass the height and weight testing.

By placing a service member in the ABCP, the leadership flags that individual. They will no longer receive favorable action, be able to promote, attend military trainings or schools, and in some instances, they will be separated from military service unless they can pass height and weight testing within a specific time frame. The ABCP requires that service members regain

standards within a 6-month time limit; if this deadline is not met, the service member is discharged. A service member can be placed in the ABCP only twice in their career.

Weight bias and stigma throughout society may play a role in the obesity epidemic. Weight bias can lead to further problems. Weight bias can originate from friends, family members, employers, and health providers and can have massive consequences for the person perceiving the bias. The negative thoughts and beliefs of individuals who discriminate against overweight individuals can have devastating consequences for a service member's career.

Leadership in the U.S. military has an issue with bias and stigma because there is a specific appearance that the military desires each soldier to fit. This concept allows the military to uphold a standard for the look of readiness. Service members risk losing their jobs due to weight bias and stigma within the military. Not only stigma and weight bias from external sources but also internal weight bias can cause psychological harm to an individual.

Studies in the literature have clearly shown that obesity is negatively impacting service members mentally; it impacts spouses and children in a negative manner as well. Obesity can lead to depression, anxiety, disordered eating, and unhealthy dieting patterns. Many health promotion and prevention services are available to service members; however, there are times when more than increasing physical activity and cutting calories is required.

Few programs are available for family members of active-duty service members to assist them with obesity and associated problems. By examining the emotional and mental impacts that obesity causes, better methods to approach how the military meets standards can be developed. Many spouses and children experience the mental impact of obesity when the service member is feeling anxiety and depression and bringing it into the home with them. A combination of

physical and mental health support should be provided for service members as well as family members so that prevention of obesity is possible.

A strong foundation of research has shown that obesity is linked to numerous physiological and psychological issues. However, more research that directly links these issues with further difficulty in losing weight must be performed. Research for individuals who fall into special populations should also be included. The U.S. military represents a unique population that is required to meet height and weight standards that can have dire consequences to a service member if not met.

This population should be studied so that health and wellness programs can be adapted to help these service members successfully meet standards. This population also confronts many unique stressors within the work environment as well as at home. Research should be performed regarding the most effective psychological therapies that can be used to assist service members who are suffering from obesity. Health promotion and prevention services should include education for the leadership that makes them aware of the dangers that weight stigma and bias present to a service member's ability to perform and to succeed at meeting standards.

Chapter 3: Research Methodology

Overview

Qualitative research allows the exploration and understanding of a group experience through questions, procedures, and data collection within the participants' environment (Creswell & Creswell, 2018). This study focused on evaluating the mental impact that obesity has on service members while on an installation. Research in recent years has focused on examining the amount of physical activity, caloric intake, and mental well-being of civilians (Almondoz et al., 2022; Rindler et al., 2023; Wu & Berry, 2018). These studies have focused on extrinsic causes of obesity rather than intrinsic causes. By contrast, the present study focused on discovering intrinsic causes that service members face regarding obesity, producing information through personal interviews and observations. The information obtained through this research has provided impactful information regarding the mental impact that obesity has on service members that will lead to a long-term behavioral health support system.

Research Design

Some studies have examined the daily amount of physical activity and caloric intake of service members; this study focused on those struggling with obesity and how it feels to be in that position. This study was performed to identify any mental impacts causing further obesity issues from their perspectives and descriptions. A qualitative study approach was used to identify themes regarding service members' experiences in experiencing obesity in such a strict cultural environment.

A transcendental phenomenological design allowed an in-depth examination of personal experiences describing the military culture and its impacts on a service member's life. The

research model was designed to allow the researcher to describe the nature of a relationship, allow the participant to share situations they perceived as standing out, and explore feelings awakened by certain perceptions of the participants (Moustakas, 1994). The design also employed prior research regarding obesity and service members. Connections between the literature and the lived experiences of the service members were made, and themes from the research were identified using the data collected. This information was then used to report the mental impact that obesity has on service members. This study evaluated the experience of 20 service members (10 males and 10 females) struggling with obesity and currently stationed on an installation.

Research Questions

This study was developed with the intent to answer the central research question, namely, "What is the mental effect that obesity has on service members?" Supporting questions were used to examine how obesity was impacting the careers of the participants, discover the impact of obesity on participants internally, and determine the impact of obesity on participants externally.

Methods

The employed methods were chosen to obtain the most information from the experiences and perceptions of obesity that the service members had encountered throughout their careers. The participants were chosen based on their self-reported placement in the body composition program and their current BMI. The BMI metric was used because it is the military standard that places a service member in a body composition program. The participants were chosen from this demographic.

Design and Rationale

The transcendental phenomenological approach was the most effective choice for this research. This framework allowed the participants to share their personal experiences, perceptions, and feelings with the researcher. These interviews provided valuable information that could not be obtained in other manners and allowed the researcher to gain awareness, understanding, and knowledge of the phenomena that service members experience regarding obesity.

Sites

The interviews occurred on a military installation, at a location that was at the center of post. The site was contacted and agreed to allow this location to be used to collect data through interviews and surveys for this research. This facility had a space that allowed for a safe, comfortable, and confidential area to be used for interviews. The facility was indoors, centrally located on post, and easy to access for service members.

Participants

A total of 20 service members were interviewed, including 10 females and 10 males. Participants were recruited from individuals currently participating in remedial physical training and who self-reported they were in the body composition program. The participants were contacted in person to request their voluntary participation in the research study. The participants were asked to meet face-to-face to discuss the research and obtain informed consent for the project if they were interested. Each participant chose a time between 1200-1300 for an interview consistent with their schedule.

Participants were active-duty service members and able to belong to any branch of military service. They had departed from military height and weight standards and were currently enrolled in the body composition program. These requirements were chosen so that they would be currently experiencing the condition; the participants did not need to remember their experiences because they were occurring in real time.

Procedures

Participants were randomly chosen from the body composition program list based on a lottery system that selected a random number. This form of selection is termed random selection. This selection method was used because all potential participants were currently experiencing obesity and attempting to lose weight. After the participants had been contacted, they were asked to participate in the research project. Once they showed interest the researcher informed the participants of the research study's purpose, and the process involved. Written informed consent was also obtained at that time if the participant wished to continue.

A face-to-face interview then occurred on post at a time between 1200-1300 that worked best for the participant. All interviews were conducted using open-ended questions or semi-structured questions that clarified participants' answers. The interviews were transcribed and saved on the researchers' secure laptop.

After each interview, the participants were given four surveys. A patient health questionnaire that screened participants for depression and anxiety. The PHQ-9 contains nine questions, and the GAD-7 is composed of seven questions. These surveys were used in conjunction with the information provided during the face-to-face interviews regarding

depression and anxiety. The New General Self-Efficacy Scale (NGSE) was used to measure self-efficacy, and the Rosenberg Self-Esteem Scale (RSS) was used to measure self-esteem.

Role of Researcher

The researcher contacted potential participants to ask them to participate in the research study. It was the role of the researcher to ensure that each participant had been adequately informed of the purpose and the process of the research (Creswell & Creswell, 2018). The researcher conducted the face-to-face interviews with the participants. The researcher also collected, stored, and reported data. Data was collected and stored on a personal encrypted computer in a locked office.

Data Collection

Data for this project was obtained in multiple ways. Some data was collected through a literature review, which allowed the researcher to determine research gaps. The researcher also conducted face-to-face interviews to record and analyze participants' experiences. Observations of participants' social interactions within the installation were recorded for analysis. Participants were also given questionnaires to screen for depression and anxiety. The depression screening was performed using the PHQ-9, and the anxiety screening used the GAD-7.

Interviews, Observations, and Survey

This study was designed so that participants could express their perceptions and experiences with the researcher. The participants were interviewed in a neutral location that allowed them to dress as they chose and speak freely. Semi structured questions were asked to

prompt participants to share their experiences in a guided manner (Ahlin, 2019). Participants were observed while in the waiting area and throughout the interview. The following questions were asked:

1. Please describe for me how obesity impacts your self-confidence.
2. Please describe for me how obesity impacts your self-efficacy.
3. Please describe for me how obesity impacts you within the military community.
4. Please describe for me how obesity impacts you in your current position.
5. Please describe for me how you feel that obesity impacts your social life.
6. Please describe for me how obesity impacts you at work.
7. Please describe for me the unique stressors that you feel you experience because you are a military service member.
8. Please describe for me how you feel about the military height and weight standards.
9. Please describe for me how struggling with obesity makes you feel as a service member who must meet a specific standard based on height and weight.
10. Please describe for me if obesity makes you feel anxious in any way.
11. Please describe for me if obesity makes you feel depressed in any way.

Questions 1 and 2 were designed to provide the researcher with insight into the perceived feelings that the participant had regarding themselves and their own abilities. Questions 3 through 6 were designed to provide the researcher with information regarding how the participants believed that obesity was impacting them in the extrinsic sense. Questions 7 through 9 were designed to provide the researcher with information about the perceptions that the participants had regarding the perceived stressors that they, as service members, were

experiencing when attempting to meet specific standards. Questions 10 and 11 were follow-up questions to the PHQ-9 and the GAD-7 questionnaires. These questions were adjusted as needed and were meant to be nonthreatening to the participants.

Questions 1 and 2 asked the participant to describe how obesity was impacting their self-confidence and self-efficacy. This factor was important to the research because self-confidence and self-efficacy have been found to influence a service member's motivation, perseverance, and resilience (Bekesiene, 2023). Self-confidence is an individual's belief that they can produce intended outcomes (Mansell & Turner, 2022). Self-efficacy is very similar, but it refers to the ability of an individual to complete a specific task, overcome an obstacle, or succeed in a specific situation (Bekesiene, 2023). For a service member, it is beneficial to have high self-confidence and high self-efficacy so that they can perform at a set standard, such as a physical fitness test or body composition testing.

Questions 3 through 6 addressed situations in which obesity could impact a service member in an external manner. Obesity can limit a person's desire to socialize with friends, coworkers, and family members. The questions that were asked within this area provided the researcher with the perception of the service members within these different environments. It has been found that weight-related stigma from different sources causes psychological distress and can cause individuals to socially isolate (Alimoradi et al., 2019). Much research has linked weight stigma with adverse short- and long-term physical health impacts. These questions were intended to discover whether the participants were experiencing physical or psychological impacts socially, at work, or at home because these impacts could affect a service member's BMI, ability to lose weight, treatment compliance, and quality of life (Alimoradi et al., 2019).

Questions 7 through 9 focused on the participant's perceptions and feelings regarding the height and weight standards they were required to maintain, their struggles, and the feelings associated with those standards and struggles. BMI is a form of measurement used by the military that is a mathematical equation and is associated with body fat mass (Meyer & Cole, 2019). Higher BMI levels are associated with higher body fat mass, lower physical performance, and musculoskeletal injuries. The questions provided the researcher with detailed information regarding the impact that meeting current BMI standards had made on the service member's mental health.

Questions 10 and 11 were follow-up questions to the PHQ-9 and the GAD-7 questionnaires that were administered at the start of the interview. These questionnaires were meant to obtain a baseline score for depression and anxiety and have been used within the medical community since 1999 as a prescreening option to determine if intervention services were needed (UHS Rev 4, 2020). Service members are prone to experience unique stressors that can impact performance, so it was essential to screen for depression and anxiety (Brown et al., 2022).

Survey

The PHQ-9 and GAD-7 questionnaires were administered at the start of the face-to-face interview to screen each participant for depression and anxiety. Research has been performed regarding the validity of this screening, and this tool has been found to be an effective indicator for depression and anxiety regardless of sex (Odero et al., 2023). This administration was a simple, valid way to screen for depression and anxiety and easy to perform. This type of study can be used to evaluate the psychosocial well-being of many different individuals, including service members. The questionnaires focus on the previous 2 weeks of an individual's life. This

process allowed the researcher to obtain structured and valid results from all 20 participants in the study for data collection and analysis. This survey added dependability to the information that was gathered. The contents of the PHQ-9 and GAD-7 questionnaires are as follows:

Patient Health Questionnaire and General Anxiety Disorder (PHQ-9 and GAD-7)

Date_____ Patient Name:_____ Date of Birth:

Over the last 2 weeks, how often have you been bothered by any of the following problems? Please circle your answers.

PHQ-9	**Not at all**	**Several days**	**More than half the days**	**Nearly every day**
1. Little interest or pleasure in doing things.	0	1	2	3
2. Feeling down, depressed, or hopeless.	0	1	2	3
3. Trouble falling or staying asleep or sleeping too much.	0	1	2	3
4. Feeling tired or having little energy.	0	1	2	3
5. Poor appetite or overeating.	0	1	2	3
6. Feeling bad about yourself – or that you are a failure or have let yourself or your family down.	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television.	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed. Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual.	0	1	2	3
9. Thoughts that you would be better off dead, or of hurting yourself in some way.	0	1	2	3
Add the score for each column				

Total Score (add your column scores):

If you checked off any problems, how difficult have these made it for you to do your work, take care of things at home, or get along with other people? (Circle one)

Not difficult at all **Somewhat difficult** **Very Difficult**
Extremely Difficult

Over the last 2 weeks, how often have you been bothered by any of the following problems? Please circle your answers.

GAD-7	**Not at all sure**	**Several days**	**Over half the days**	**Nearly every day**
1. Feeling nervous, anxious, or on edge.	0	1	2	3
2. Not being able to stop or control worrying.	0	1	2	3
3. Worrying too much about different things.	0	1	2	3
4. Trouble relaxing.	0	1	2	3
5. Being so restless that it's hard to sit still.	0	1	2	3

6. Becoming easily annoyed or irritable.	0	1	2	3
7. Feeling afraid as if something awful might happen.	0	1	2	3
Add the score for each column				

Total Score (add your column scores):

If you checked off any problems, how difficult have these made it for you to do your work, take care of things at home, or get along with other people? (Circle one)

Not difficult at all **Somewhat difficult** **Very Difficult** **Extremely Difficult**

UHS Rev 4/2020

Self-esteem can be measured globally using surveys such as the RSS, which is the scale used most widely to measure self-esteem (Garcia et al., 2019). Self-esteem is standardized and has been used in clinical practice since 1965. The RSS is used to determine a participant's positive and negative feelings towards themselves (Garcia et al., 2019). It is used globally and has been deemed a valid instrument for testing self-esteem (Garcia et al., 2019). To test self-efficacy, the NGSE was used. Self-efficacy is like self-esteem because it refers to a person's belief that they can perform a specific action in a situation. The NGSE has been proven to be a reliable and valid instrument to use to capture a person's self-efficacy. The NGSE measures motivational variables in a consistent and stable way (Chen et al., 2001). The following text presents the RSS and the NGSE.

Rosenberg Self-Esteem Scale

Instructions

Below is a list of statements dealing with your general feelings about yourself. Please indicate how strongly you agree or disagree with each statement.

1. On the whole, I am satisfied with myself. Strongly Agree, Agree, Disagree, Strongly Disagree

2. At times I think I am no good at all. Strongly Agree, Agree, Disagree, Strongly Disagree

3. I feel that I have a number of good qualities. Strongly Agree, Agree, Disagree, Strongly Disagree

4. I am able to do things as well as most other people. Strongly Agree, Agree, Disagree, Strongly Disagree

5. I feel I do not have much to be proud of. Strongly Agree, Agree, Disagree, Strongly Disagree

6. I certainly feel useless at times. Strongly Agree, Agree, Disagree, Strongly Disagree

7. I feel that I'm a person of worth, at least on an equal plane with others. Strongly Agree, Agree, Disagree, Strongly Disagree

8. I wish I could have more respect for myself. Strongly Agree, Agree, Disagree, Strongly Disagree

9. All in all, I am inclined to feel that I am a failure. Strongly Agree, Agree, Disagree, Strongly Disagree

10. I take a positive attitude toward myself. Strongly Agree, Agree, Disagree, Strongly Disagree

Scoring: Items 2, 5, 6, 8, 9 are reverse scored. Give "Strongly Disagree" 1 point, "Disagree" 2 points, "Agree" 3 points, and "Strongly Agree" 4 points. Sum scores for all ten items. Keep scores on a continuous scale. Higher scores indicate higher self-esteem.

New General Self-Efficacy Scale

This survey accompanies a measure in the SPARQTools.org Measuring Mobility toolkit, which provides practitioners curated instruments for assessing mobility from poverty and tools for selecting the most appropriate measures for their programs.

Age: Adult

Duration: <3 minutes

Reading Level: 6th–8th grade

Number of items: 8

Answer Format: 1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; 5 = strongly agree.

Scoring: To calculate the total score for each participant, take the average rating of the items by adding respondents' answers to each item and dividing this sum by the total number of items (8).

Instructions: Participants are told that (a) general self-efficacy relates to "one's estimate of one's overall ability to perform successfully in a wide variety of achievement situations, or to how confident one is that she or he can perform effectively across different tasks and situations," and (b) self-esteem relates to "the overall affective evaluation of one's own worth, value, or importance, or to how one feels about oneself as a person." Instructions: Please circle your answer below.

1. I will be able to achieve most of the goals that I set for myself. Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree

2. When facing difficult tasks, I am certain that I will accomplish them. Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree

3. In general, I think that I can obtain outcomes that are important to me. Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree

4. I believe I can succeed at most any endeavor to which I set my mind. Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree

5. I will be able to successfully overcome many challenges. Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree

6. I am confident that I can perform effectively on many different tasks. Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree

7. Compared to other people, I can do most tasks very well. Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree

8. Even when things are tough, I can perform quite well. Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree

Data Analysis

Interview Transcription

The interviews were recorded by hand and transcribed in real time as the participant spoke. The researcher clarified the meaning of the participant for each question. This step ensured that the researcher had appropriately understood the perception or experience that the participant was describing. The transcriptions were beneficial for coding purposes.

Open Coding

Data was collected, analyzed, and organized into codes throughout the research process. The codes categorized the data. This process provided themes and subthemes that emerged from the interviews (Bhandari, 2020). The data was analyzed using qualitative software.

Qualitative Software

Qualitative software was chosen for this research study. Specifically, ATLAS.ti was used to analyze the information and present the dominant themes. This program allows the

relationships among codes to become visible, allowing the researcher to observe how themes overlapped (Creswell & Poth, 2018).

Trustworthiness

Trustworthiness requires that critical criteria within a qualitative research study are met. Credibility, dependability, confirmability, transferability, and reflexivity are all required for a qualitative research study to be deemed trustworthy (Stenfors et al., 2020). These characteristics contribute to high-quality research.

Credibility

Credibility indicates that research findings are plausible and trustworthy (Stenfors et al., 2020). This research study explored the effects of obesity on active-duty service members enrolled in the body composition program. Based on the theory that obesity affects service members, research questions were asked so that perceptions and experiences could be recorded. Once all participants had been interviewed, the information was analyzed within the appropriate framework.

Dependability and Confirmability

Dependability is the extent to which research can be replicated, and confirmability shows that there is a clear relationship between the data and the findings (Stenfors et al., 2020). This research could be easily duplicated by a researcher with access to service members in the body composition program. Confirmability can be determined through detailed descriptions of the experiences and perceptions of service members who are struggling with obesity.

Transferability

Transferability refers to findings that may be transferred to other groups (Stenfors et al., 2020). There is a high likelihood that other service members at other military installations would relate the same perceptions and experiences as those at Fort Campbell.

Ethical Considerations and Concerns

An ethical consideration that must be addressed is Institutional Review Board (IRB) approval. No research can occur until approval by the IRB. Ethical concerns for this study included collecting and storing data, recording and reporting data, personal interviews, and the anonymity of participants involved in the study.

Collecting and Storing Data

The collection and storage of data is an essential part of research. The data collected for this study included open ended questions, semi structured questions, and participant observations (Busetto et al., 2021). This information was collected with the express knowledge and consent of the participants. The collected written information was stored in a locked office, and the electronic information was stored on the researchers personal encrypted computer.

Recording and Reporting Data

The interviews were recorded in written form at the time of the interview and were transcribed and reported at the completion of the research study. To provide the most accurate information for the research study, each participant was asked to read and sign a copy of their interview transcript at the time of their interview.

Interviews

The interviews occurred in a neutral environment. Military attire was not required, and the participants were allowed to wear what they chose. Participants were encouraged to speak

freely and were reminded that there were no consequences for what they said in the interviews. Trust needed to be established prior to the interviews so that participants would feel they could be vulnerable.

Anonymity of Participants

Participants' names have not been reported in this study. Each participant received an alternative identification. The researcher was the only individual to know their identity. This condition also allowed the participants to feel that they could share information freely and without adverse repercussions.

Summary

The best choice for this qualitative study was to use a transcendental phenomenological approach. The interviews formed the basis for the collected data. This strategy allowed the researcher to obtain awareness, understanding, and knowledge from the experiences and perceptions of the participants. The role of the researcher was to ensure that the study was performed in a manner that ensured trustworthiness. This study allowed experiences and perceptions to present an image of how obesity was affecting the daily lives of service members. The analysis of the data collected was used to determine emergent themes to be reported once the study was completed. This study was performed in an ethical manner and provided participants the ability to remain anonymous.

CHAPTER FOUR: FINDINGS

Overview

This chapter presents the results of this research study. This phenomenological study explored whether obesity has a mental impact on active-duty service members. Ten research questions were used to guide the direction and focus of the study: *Please describe for me how obesity impacts your self-confidence. Please describe for me how obesity impacts your self-efficacy. Please describe for me how obesity impacts you in your current position. Please describe for me how you feel that obesity impacts your social life. Please describe for me how obesity impacts you at work. Please describe for me the unique stressors that you feel you experience because you are a military service member. Please describe for me how you feel about the military height and weight standards. Please describe for me how struggling with obesity make you feel as a service member who must meet a specific standard based on height and weight. Please describe for me if obesity makes you feel anxious in any way. Please describe for me if obesity makes you feel depressed in any way.* Through observations, face- to-face interviews and surveys for anxiety, depression, self-confidence, and self-efficacy, certain themes were discovered, namely obesity, standard, anxiety, and depression.

This chapter presents further details regarding these themes and a breakdown of the findings from the face-to-face interviews and surveys that were conducted.

Participants

Participant Overview

This study analyzed 20 participants in total, including 10 male and 10 female participants. All participants were provided with pseudonyms; males have been identified as

participants M1–M10 (Table 1), and females have been identified as participants F1–F10 (Table 2). All participants were over 18 years old. The male participants ranged from 22–38 years of age, and the female participants ranged from 22–54 years of age. All participants were currently serving in the U.S. Army as active-duty service members. At the time of the study, all participants were self reportedly in the ABCP due to their being obese and not meeting the height and weight standards set by the military. Each participant completed a PHQ-9 and GAD-7 survey to measure depression and anxiety as well as surveys to measure self-esteem and self-efficacy.

M-1

M-1 (pseudonym) was a 24-year-old active-duty soldier in the U.S. Army. He was participating in the ABCP because he had a BMI of 32.6. The participant was found to have low self-esteem, moderate self-efficacy, mild depression, and mild anxiety according to the surveys. During the interview, the male interviewee shared that obesity was impacting his self-confidence, self-efficacy, career progression, completion of goals, confidence in social interactions, and job performance. He also highlighted unique stressors such as long hours, unexpected duties, and military height and weight standards that were affecting physically capable individuals. The interviewee felt anxious and worried about potentially losing his job due to obesity and military standards.

M-2

M-2 (pseudonym) was a 24-year-old active-duty soldier in the U.S. Army. He was participating in the ABCP because he had a BMI of 30.1. The participant was found to have low self-esteem, moderate self-efficacy, moderate anxiety, and moderate depression according to the surveys. During the interview, the male interviewee expressed that obesity was impacting his body image and that he found himself constantly comparing himself to his peers; he admitted

that he was depressed because it was overwhelming when his peer's made fun of him for being fat.

M-3

M-3 (pseudonym) was a 38-year-old active-duty soldier in the U.S. Army. He was participating in the ABCP because he had a BMI of 29.8. The participant was found to have low self-esteem, moderate self-efficacy, minimal anxiety, and mild depression according to the surveys. During the interview, he expressed that obesity was impacting him in a way that made him feel like he was always being judged or looked down upon and that he constantly felt that he was "not good enough." He also stated that it made him feel mentally drained to always worry.

M-4

M-4 (pseudonym) was a 22-year-old active-duty soldier in the U.S. Army. He was participating in the ABCP because he had a BMI of 27.0. The participant was found to have low self-esteem, low self-efficacy, mild anxiety, and moderate depression according to the surveys. During the interview, the male interviewee stated that obesity was affecting his self-confidence, self-efficacy, military career, professional growth, social life, physical training, and mental health. He faced pressure due to strict military standards and felt anxious, depressed, and socially judged because of his weight. He was motivated to meet military standards so that he could keep his job.

M-5

M-5 (pseudonym) was a 28-year-old active-duty soldier in the U.S. Army. He was participating in the ABCP because he had a BMI of 37.0. The participant was found to have medium self-esteem, moderate self-efficacy, moderate anxiety, and mild depression according to the surveys. During the interview, the male interviewee shared that obesity was impacting his

self-confidence, self-efficacy, and military career due to perception, beliefs, and physical demands. It was affecting work, leading to additional tasks and stressors such as weight standards and career risks, while not significantly affecting his social life.

M-6

M-6 (pseudonym) was a 22-year-old active-duty soldier in the U.S. Army. He was participating in the ABCP because he had a BMI of 33.7. The participant was found to have low self-esteem, moderate self-efficacy, minimal anxiety, and no depression according to the surveys. During the interview, the male interviewee expressed that obesity was affecting his self-confidence, self-efficacy, and social interactions, making him feel uncomfortable and judged. It was not affecting his current position but was limiting his career progression. He considered the military height and weight standards outdated and unfair, causing him anxiety and creating unique stressors. Despite these challenges, obesity did not cause him to feel depressed.

M-7

M-7 (pseudonym) was a 36-year-old active-duty soldier in the U.S. Army. He was participating in the ABCP because he had a BMI of 31.7. The participant was found to have medium self-esteem, moderate self-efficacy, moderate anxiety, and moderately severe depression according to the surveys. During the interview, the male interviewee expressed that he was upset with himself for not being able to meet standards and that he was afraid that he would be separated from the service and not be able to provide for his family. He did not feel that obesity had a significant impact on his life other than his not meeting military standards.

M-8

M-8 (pseudonym) was a 24-year-old active-duty soldier in the U.S. Army. He was participating in the ABCP because he had a BMI of 29.7. The participant was found to have

medium self-esteem, moderate self-efficacy, minimal anxiety, and moderately severe depression according to the surveys. During the interview, the male interviewee expressed that obesity was affecting his self-confidence, self-efficacy, career progression, social interactions, and military service due to weight-related challenges and stigma. It was causing feelings of shame, regret, and embarrassment, impacting his mental well-being and his ability to meet military standards.

M-9

M-9 (pseudonym) was a 26-year-old active-duty soldier in the U.S. Army. He was participating in the ABCP because he had a BMI of 29.4. The participant was found to have high self-esteem, moderate self-efficacy, mild anxiety, and mild depression according to the surveys. During the interview, the male interviewee mentioned impacts of obesity on his self-confidence, self-efficacy, military career, social life, and work performance. He was concerned about potentially being separated from the military due to his weight. Meeting military height and weight standards had been a challenge, and he felt anxious about the consequences. He also highlighted unique stressors such as the need to pass certain physical standards, long exercises, and a demanding work environment. Despite these challenges, he did not feel depressed.

M-10

M-10 (pseudonym) was a 25-year-old active-duty soldier in the U.S. Army. He was participating in the ABCP because he had a BMI of 33.4. The participant was found to have low self-esteem, low self-efficacy, minimal anxiety, and no depression. During the interview, the male interviewee stated that obesity was affecting his self-confidence and self-efficacy as well as his work as a medic in the military, with concerns about meeting weight standards and potential job loss. It did not impact his social life.

Table 1

Male Participant Information

Participant	Age (yr.)	Body Mass Index
M-1	24	32.6
M-2	24	30.1
M-3	38	29.8
M-4	22	27.0
M-5	28	37.0
M-6	22	33.7
M-7	36	31.7
M-8	24	29.7
M-9	26	29.4
M-10	25	33.4

F-1

F-1 (pseudonym) was a 28-year-old active-duty soldier in the U.S. Army. She was participating in the ABCP because she had a BMI of 37.8. The participant was found to have low self-esteem, moderate self-efficacy, minimal anxiety, and no depression according to the surveys. During the interview, the female interviewee shared how obesity was impacting her self-confidence, self-efficacy, and career progression in the military due to physical fitness standards. She felt like an outcast in certain activities and was frustrated with perceived unfair height and weight standards. She experienced anxiety and depression when faced with challenges related to weight requirements. Her social life had not been impacted, but her work dynamics could be challenging.

F-2

F-2 (pseudonym) was a 54-year-old active-duty soldier in the U.S. Army. She was participating in the ABCP because she had a BMI of 37.8. The participant was found to have medium self-esteem, moderate self-efficacy, minimal anxiety, and moderate depression according to the surveys. During the interview, the female interviewee stated that obesity was impacting her self-confidence, self-efficacy, and social life. In the military community, she felt judged based on her appearance rather than her accomplishments. It was affecting her work position and making her feel anxious and depressed, especially under unique stressors such as separation from her husband. Military height and weight standards were challenging for her as a medic.

F-3

F-3 (pseudonym) was a 27-year-old active-duty soldier in the U.S. Army. She was participating in the ABCP because she had a BMI of 34.6. The participant was found to have medium self-esteem, moderate self-efficacy, mild anxiety, and no depression according to the surveys. During the interview, the female interviewee stated that obesity was impacting her self-confidence in social situations and military promotions, but not in her current position. Unique stressors included meeting military standards and feeling pressure to conform. The interviewee valued strength over "being skinny" and was struggling with body image and job security due to obesity. She also stated that obese individuals in the military experience eating disorders and body dysmorphia due to weight-related concerns. However, she stated that obesity was not causing her anxiety or depression.

F-4

F-4 (pseudonym) was a 28-year-old active-duty soldier in the U.S. Army. She was participating in the ABCP because she had a BMI of 34.1. The participant was found to have medium self-esteem, moderate self-efficacy, mild anxiety, and mild depression according to the surveys. During the interview, the female interviewee expressed that obesity was impacting her self-confidence, self-efficacy, and ability to perform her job. She avoided social events and struggled with the military height and weight standards. She stated that she had participated in risky behaviors to lose weight quickly. This individual valued performance over appearance and believed that the military should do so as well. She was constantly anxious that she would not meet standards.

F-5

F-5 (pseudonym) was a 24-year-old active-duty soldier in the U.S. Army. She was participating in the ABCP because she had a BMI of 36.2. The participant was found to have medium self-esteem, low self-efficacy, severe anxiety, and moderate depression according to the surveys. During the interview, the female interviewee stated that obesity was affecting her self-confidence, self-efficacy, and relationships within the military community, impacting her job performance and social life. Unique stressors such as deployment, college, extra duties, relocation, and hormonal changes were adding to her struggle to meet military standards, causing anxiety, stress, and depression.

F-6

F-6 (pseudonym) was a 32-year-old active-duty soldier in the U.S. Army. She was participating in the ABCP because she had a BMI of 41.2. The participant was found to have medium self-esteem, low self-efficacy, severe anxiety, and severe depression according to the surveys. During the interview, the female interviewee stated that obesity was affecting her self-

confidence, social life, and work environment due to constant criticism and mistreatment from others. The outdated military height and weight standards were adding additional stress. This individual felt inadequate and anxious about job security, and she was constantly experiencing feelings of depression.

F-7

F-7 (pseudonym) was a 27-year-old active-duty soldier in the U.S. Army. She was participating in the ABCP because she had a BMI of 40.2. The participant was found to have medium self-esteem, moderate self-efficacy, minimal anxiety, and no depression according to the surveys. During the interview, the female interviewee stated that obesity was negatively affecting her self-confidence, efficiency, military career progression, and mental health, causing stress, anxiety, and depression. She felt hindered by military height and weight standards and struggled with societal expectations.

F-8

F-8 (pseudonym) was a 46-year-old active-duty soldier in the U.S. Army. She was participating in the ABCP because she had a BMI of 51.2. The participant was found to have medium self-esteem, moderate self-efficacy, moderate anxiety, and moderate depression according to the surveys. During the interview, the female interviewee stated that obesity was impacting her by making her feel more scrutinized or judged and preventing her from progressing in her career. She felt like a fraud because she was supposed to set a standard for her subordinates.

F-9

F-9 (pseudonym) was a 22-year-old active-duty soldier in the U.S. Army. She was participating in the ABCP because she had a BMI of 36.6. The participant was found to have

high self-esteem, moderate self-efficacy, minimal anxiety, and mild depression according to the surveys. During the interview, the female interviewee shared that obesity was impacting her self-confidence, self-efficacy, career opportunities, social life, and mental health, particularly within the military community. She felt judged, overlooked, and pressured to meet height and weight standards that she believed were unfair. Despite her not feeling anxious, obesity was contributing to feelings of depression and inadequacy, especially regarding career advancement.

F-10

F-10 (pseudonym) was a 38-year-old active-duty soldier in the U.S. Army. She was participating in the ABCP because her BMI was 43.5. The participant was found to have high self-esteem, moderate self-efficacy, mild anxiety, and moderate depression according to the surveys. During the interview, the female interviewee stated that she constantly felt anxious because she felt that her rejection from the Army was inevitable, and she did not feel confident in her skills outside that profession. She was facing a constant struggle to meet height and weight standards.

Table 2

Female Participant Information

Participant	Age (yrs.)	Body Mass Index
F-1	28	37.8
F-2	54	40.3
F-3	27	34.6
F-4	28	34.1
F-5	24	36.2
F-6	32	41.2

F-7	27	40.2
F-8	46	51.2
F-9	22	36.6
F-10	38	43.5

Results

The participants in this phenomenological study provided their thoughts and feelings along with responses to the PHQ-9, GAD-7, RSS, and NGSE surveys. First, the participants were observed as overweight service members . Next, I introduced myself and informed them that I was performing a research project for a doctorate program that was meant to explore whether obesity could have a mental impact on active-duty soldiers and asked them if they would be interested in participating. Those who stated that they would like to participate were then informed regarding the research project and given a copy of the informed consent form. Data collection began with face-to-face interviews with each of the 20 participants. Each participant was scheduled for an interview with sufficient time for them to complete the PHQ-9/GAD-7, RSS, and NGSE surveys as well. I observed each participant while they were being interviewed. The interviews were scheduled at the participants' convenience, and held at a location that was safe and private for these sessions. Each participant volunteered their age and BMI and stated whether they were participating in the ABCP. I interviewed each participant and uploaded the transcripts to the ATLAS.ti program, along with each of the surveys. The interviews were audio recorded so that they could be transcribed later, and accuracy could be upheld. The data collection process was completed after March of 2024. All participants were provided the

opportunity to review their personal interview transcripts as well as the surveys they had completed to ensure they were correct.

The data analysis process included a review of the transcripts from the 20 face-to-face interviews, a review of the surveys to ensure that all questions had been answered, and separation of all the interviews and surveys into their own files. All information was then uploaded into the ATLAS.ti program. The identification of significant words and phrases throughout the documents was performed using artificial intelligence within the ATLAS.ti software, which coded the data and helped to elucidate developing themes.

Theme Development

Using the ATLAS.ti software, a concept cloud was used to identify themes. From all the codes in the program, the more important ones were those most frequently used throughout the interviews. Three themes were established after all information had been gathered and uploaded into the ATLAS.ti program; these themes were Negative Impact of Obesity, Obesity Impact on Health, and Obesity Impact on Career (Table 3). The information gathered during the interviews and surveys, as well as subthemes, supported these themes.

Table 3

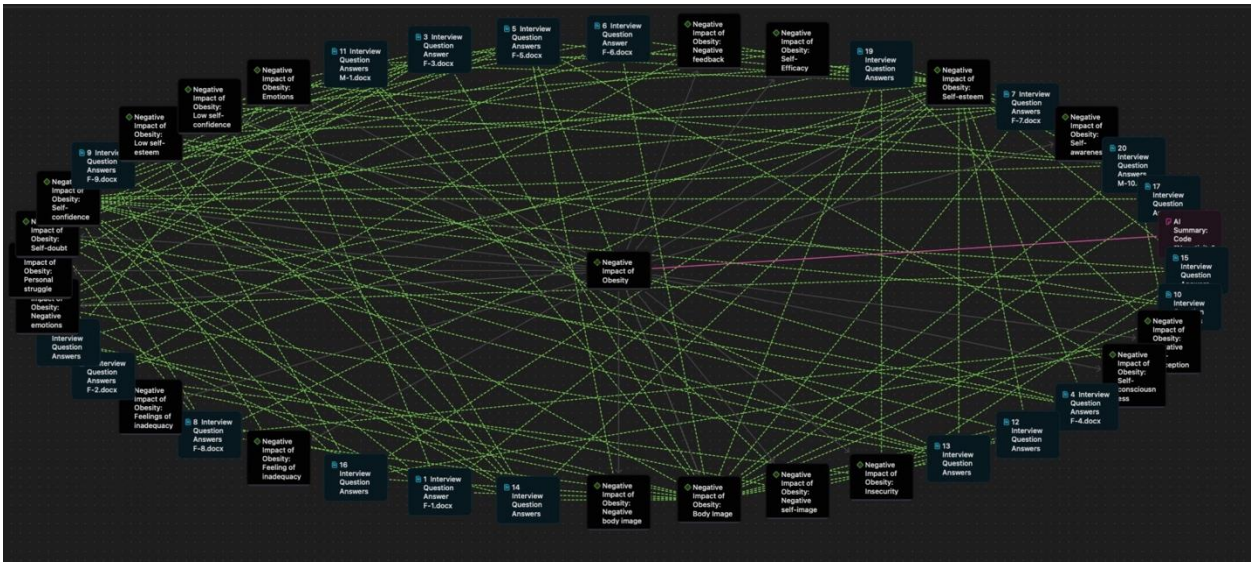
Themes and Subthemes

Themes	Subthemes
Negative Impact of Obesity	Self-confidence, Work Performance, Social Life, Mental Health
Obesity Impact on Health	Self-Confidence, Self-Efficacy, Career Progression, Mental Health
Obesity Impact on Career	Self-Confidence, Work Life, Social Life, Military Career

Theme 1: Negative Impact of Obesity

The first theme to emerge was the negative impact of obesity on active-duty service members in the U.S. Army. The subthemes were determined by both male and female participants who expressed how obesity had impacted their self-confidence, work performance, social life, and mental health. Participants described how they had been impacted by obesity in different ways. They felt anxiety and stress regarding meeting height and weight standards, worried about career progression, and faced judgement and demoralization from peers. Many highlighted the unfairness and outdated nature of military height and weight standards, leading to feelings of inadequacy and depression. The pressure to conform to physical standards had affected their overall well-being and perception within the military community.

Figure 1 Network of "Negative Impact of Obesity" Connections



Self-Confidence. Throughout the interviews, there were expressions of how obesity had affected the service members, the first being how it had affected the service members' self-confidence. F-1 stated, "Obesity impacts my self-confidence, makes me feel like I'm not good enough." F-2 made a similar comment: "Obesity impacts my self-confidence by impacting how I feel about myself, more negatively and I feel down about myself more often." Male participants

also stated they had been affected negatively by obesity. M-3 stated, “Obesity impacts my self-confidence by always making me feel like I am being judged and being looked down on.” “Obesity impacts my self-confidence by making me feel unaccomplished and low,” stated M-8.

Work Performance. Work performance is an essential part of an individual’s career. How a person performs the functions of their job can determine whether they retain or lose that job. M-1 said, “Obesity does not look good on me and takes away my ability to do my job.” As a service member, it is essential to be able to shoot, move, and communicate in a timely manner, and being obese can inhibit a service member’s ability to move. M-3 made the following related comment: “Obesity impacts me in my current position by making it so that I am not able to keep up with the younger guys and girls on my team anymore.” Some service members had become so focused on how they looked to others that it was affecting their ability to work: “Obesity impacts me in my current position by making it hard to reasonably do my job when having to focus so hard on the perceptions of others,” stated F-4.

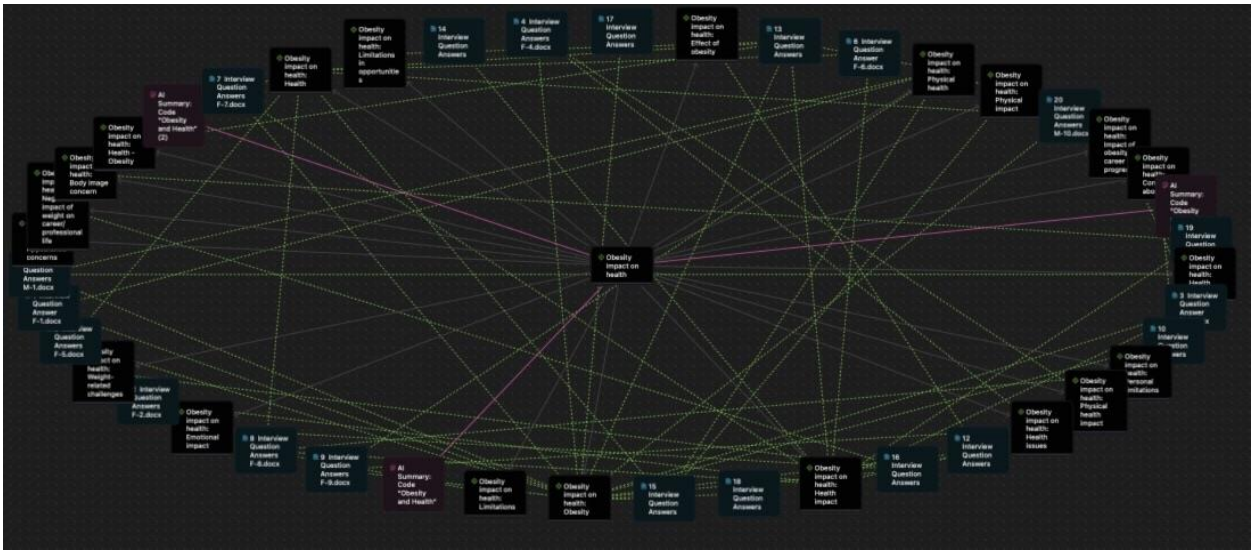
Social Life. Being obese can affect how individuals socialize; it can prevent them from participating in certain events as well as prevent them from socializing at all. F-2 stated, “Obesity impacts my social life by making me not want to socialize because of the food and alcohol restrictions of my diet.” By not socializing, F-2 had been able to avoid the temptation to consume foods and beverages that she had identified as detrimental to her weight loss goals. Some individuals did not desire to date because of their obesity. F-4 stated, “Obesity impacts my social life by making me not want to go out with anyone.” Some were embarrassed by being overweight, and it had prevented them from socializing. M-8 stated, “Obesity impacts my social life because people are telling me I look sicker or that I have a ‘dad bod,’ and it’s embarrassing.”

Mental Health. Obesity can cause service members to feel anxious because of the risk to their career and depressed about having let themselves and their leadership down. F-1 explained, "Obesity makes me feel anxious at times when height and weight come up because I am afraid that I won't meet standards and depressed because failing height and weight put me in a place where I feel I let myself and my noncommissioned officers down." Some service members expressed their concerns with eating disorders and body dysmorphia. F-2 stated, "Obesity makes me feel anxious because my self-consciousness can morph into paranoia and other behavioral issues." M-3 stated, "Obesity makes me feel anxious because it mentally drains me when I always have to think about how I need to look a certain way."

Theme 2: Obesity Impact on Health

The second theme that emerged was the impact of obesity on health for the participants. Obesity was affecting these individuals in the military community by impacting their self-confidence, self-efficacy, career progression, and mental health. It was leading to feelings of being judged, limited, and not meeting set standards and ultimately affecting social life, work performance, and overall well-being. Military height and weight standards were viewed as unrealistic and unfair, contributing to the stress and challenges faced by those struggling with obesity in their military roles.

Figure 2 Network of "Obesity Impact on Health" Connections



Self-Confidence. Obesity can impact health through diminished self-confidence. M-1 stated, “Obesity impacts my self-confidence because some tasks are less attainable than they should be due to being obese.” “Obesity impacts my self-confidence by making me feel uncomfortable in my own skin,” stated M-6. A lack of self-confidence can lead to a lack of self-care. F-6 said, “Obesity impacts my self-confidence by making me feel like I can only wear baggy clothes and can’t look in the mirror.”

Self-Efficacy. Obesity can impact health through an individual’s self-efficacy by preventing them from believing that they can accomplish certain tasks. M-6 stated, “Obesity impacts my self-efficacy by making me feel like I am limited on what I can do.” F-8 stated, “Obesity impacts my self-efficacy by making me unable to try because I think I can’t accomplish things.” F-1 stated, “Obesity impacts my self-efficacy because I don’t believe that I can keep up with standards.”

Career Progression. Obesity can impact service members’ ability to progress in their careers. F-1 stated, “Obesity impacts my current position by not allowing me to move up in rank; my career is at a standstill.” F-4 made a similar statement: “Obesity impacts my current position

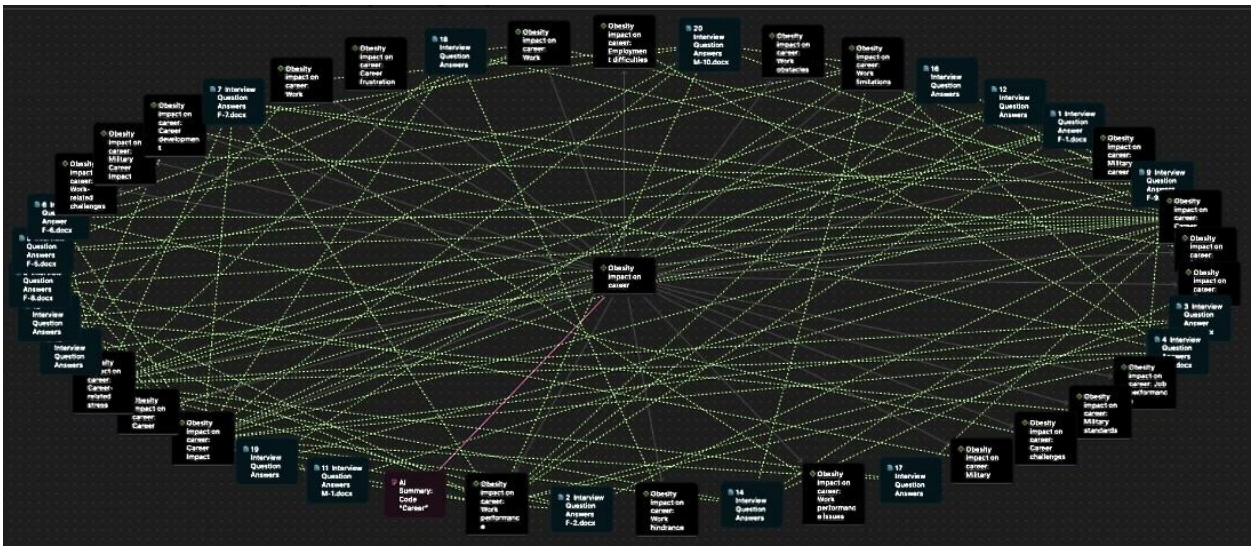
by making me look weak and prevents me from progressing." M-6 stated, "Obesity impacts me at work by limiting my ability to improve or move forward in my career."

Mental Health. Obesity can impact a service member's mental health in varying ways. One such way is through comments from peers. F-5 stated, "Obesity impacts me at work by people treating me different and holding me to a different standard." F-6 was being bullied by her peers and stated, "Obesity impacts me at work because there are constant snide remarks, looks, and comments from others around me." M-2 was also being bullied and stated, "Obesity impacts me in the military community because my peers make fun of me because I am fat, and it brings me down." Obesity can also have an unhealthy effect on one's mental well-being, as M-5 stated: "Obesity makes me feel anxious because I obsess over how I look in the mirror, my pants size, and my weight in an unhealthy way."

Theme 3: Obesity Impact on Career

The third theme to emerge was the impact of obesity on the careers of active-duty service members. The participants expressed how obesity had affected self-confidence, work life, social life, and military careers, leading to anxiety, depression, and unique stressors. They highlighted the challenges in meeting military height and weight standards, feeling judged, fearing job loss, and struggling to progress professionally. They shared concerns regarding body image, emotional well-being, and impacts on relationships.

Figure 3 Network of "Obesity Impact on Career" Connections



Self-Confidence. Obesity can impact a service member's career by reducing belief in their ability to accomplish career-associated tasks. It is difficult to perform without the confidence to succeed. "Obesity impacts my self-confidence by making me feel like I failed at the simplest task and embarrasses me, makes me not like my body," said F-5. M-4 stated, "Obesity impacts my self-confidence by making me less confident that I can succeed." F-4 said, "Obesity impacts my self-confidence by making it hard to feel confident within myself." M-10 stated, "Obesity impacts my self-confidence by making me feel worthless."

Work Life. Work life can be impacted by obesity. At times, a service member must be able to complete tasks such as physical fitness assessments, and obesity can make passing those tests difficult. F-4 stated, "Obesity impacts me at work because I struggle to do the physical training that is required." M-4 stated, "Obesity impacts me at work by making simple body-weight physical training harder to accomplish." Certain positions or jobs are more sedentary than others and could add to a service member's weight gain. F-2 stated, "Obesity impacts me in my current position by making me more sedentary than past positions I have had." In some instances, service members felt that they were letting down their teammates in performing tasks.

F-7 stated, “Obesity impacts me at work because I feel like I am bringing down the team.” M-2 stated, “Obesity impacts me at work because I cannot perform like my peers.”

Social Life. Obesity can impact a service member’s social life, and this effect can have an impact on their career. Many service members live long distances from their initial support systems, and going out with peers can build new support systems. Some participants did not desire to socialize due to obesity. F-5 stated, “Obesity impacts my social life by making me not want to go out with friends because I feel embarrassed about my appearance.” F-6 stated, “Obesity impacts my social life by making it so that I have no social life due to how I feel and look.” Some service members felt that they were constantly being judged by how they look. M-6 stated, “Obesity impacts my social life because I am always feeling judged.”

Military Career. Obesity can impact a service member’s career by preventing promotion, stalling the career, or leading to separation from the military. F-1 stated, “Obesity impacts my current position by not allowing me to move up in rank; my career is at a standstill.” F-6 stated, “Obesity makes me feel anxious, and I am constantly worried I will lose my job.” M-2 stated, “Obesity makes me feel depressed because it puts me in a bad situation career-wise.” “Obesity impacts me in my current position by literally making me unable to advance in my career,” stated M-4. M-8 stated, “Obesity impacts me in my position by preventing me from being able to do my job.” M-9 stated, “Obesity impacts me at work by not allowing me to do my job or progress in my career.”

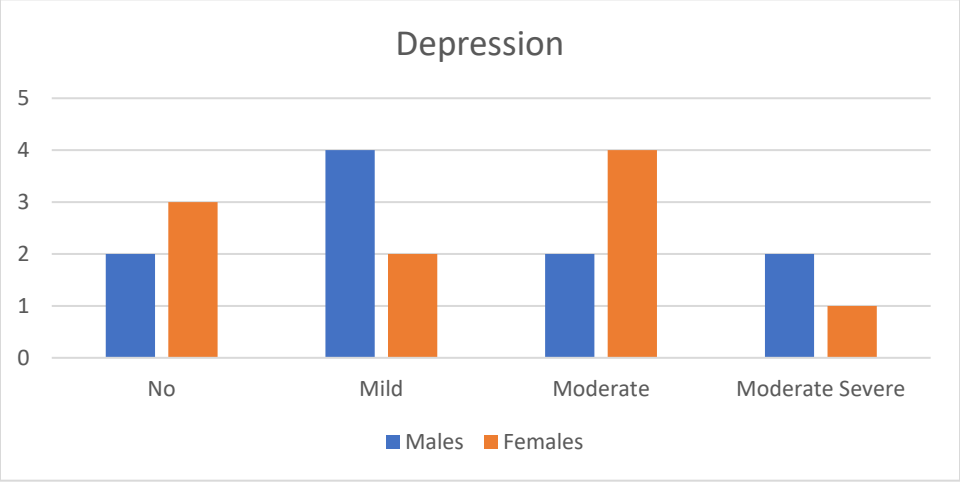
Surveys

Patient Health and General Anxiety Disorder Questionnaires (PHQ-9 and GAD-7)

The PHQ-9 questionnaire could be used to determine whether a participant had been feeling down or depressed. Each participant was asked to complete the questionnaire using the previous

2 weeks as a time frame. All the surveys were collected, and the information was analyzed. The results showed that more male participants exhibited signs of mild depression while more female participants had signs of moderate depression. Two male participants and three female participants had signs of no depression. Four male participants and two female participants were found to have signs of mild depression. Two male participants and four female participants were found to have signs of moderate depression. Also, two male participants and one female participant were found to have signs of moderate depression. Figure 4 shows the signs of depression among the participants based on the information provided from their PHQ-9 answers.

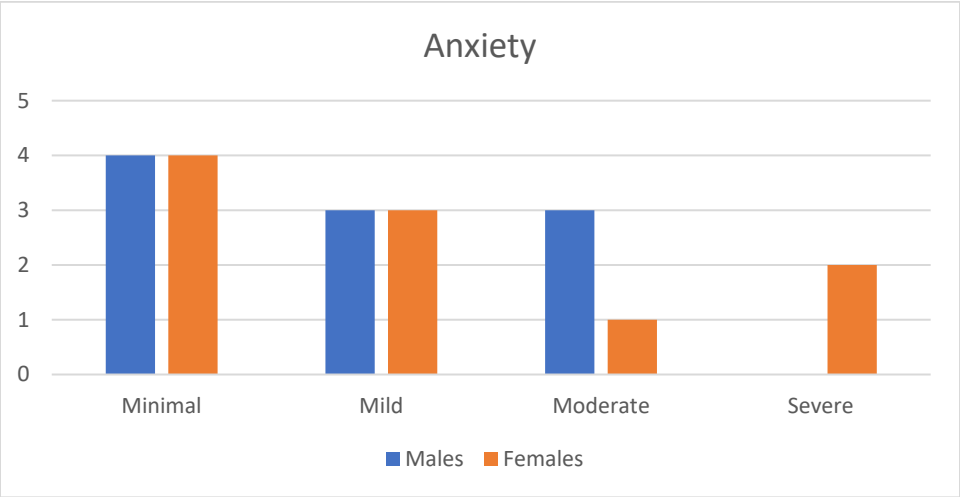
Figure 4. Graph Depicting the Signs of Depression in Participants



The GAD-7 survey determines whether a participant is showing signs of anxiety. The participants were instructed to use the past 2 weeks as the reference time period for the questions on the survey. The survey results showed that both male and female participants mostly exhibited signs of minimal anxiety. Four male participants and four female participants showed signs of minimal anxiety. Three male participants and three female participants showed signs of mild anxiety. Three male participants and one female participant showed signs of moderate anxiety.

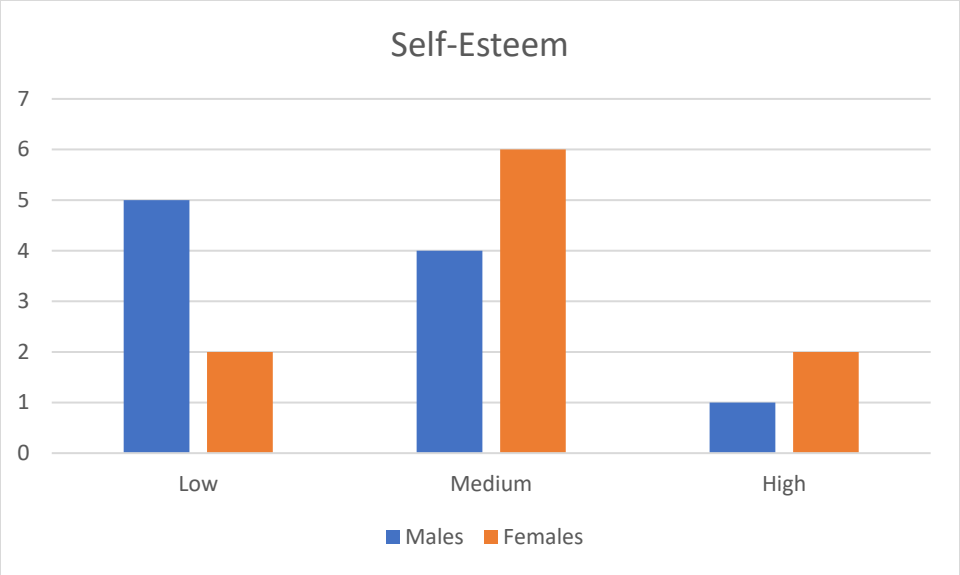
One female participant showed signs of severe anxiety. Figure 5 depicts the signs of anxiety in the participants of this study based on the answers provided in their individual GAD-7 answers.

Figure 5 Graph Depicting the Signs of Anxiety in Participants



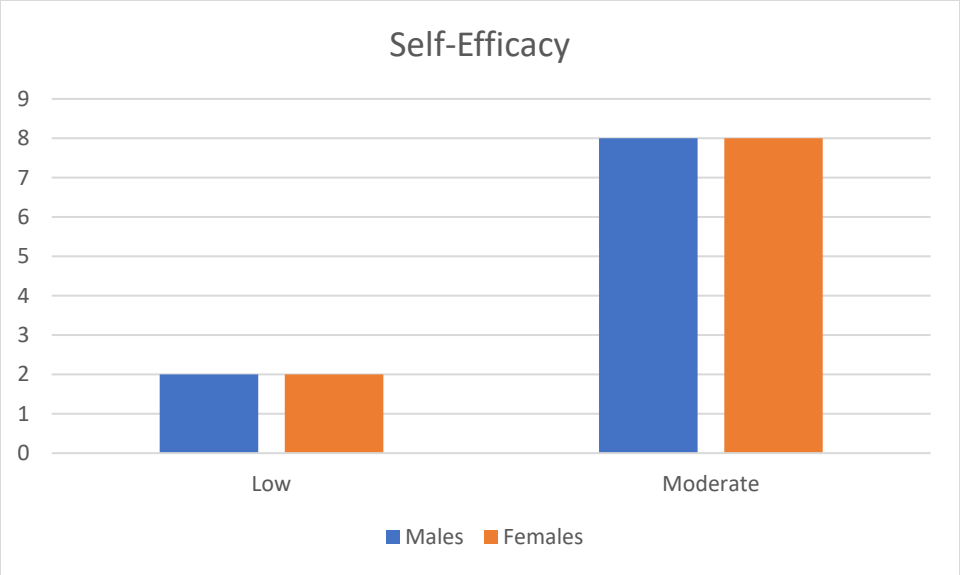
Rosenberg Self-Esteem Scale (RSS). To determine participants' levels of self-esteem, the RSE was employed. The participants were provided with a description of self-esteem and directions regarding how to complete the survey. Data was collected and analyzed. The results showed that more male participants had signs of low levels of self-esteem while more female participants had signs of medium levels of self-esteem. Five male participants and two female participants had signs of low self-esteem. Four male participants and six female participants had signs of medium self-esteem. One male participant and two female participants had signs of high self-esteem. Figure 6 depicts the levels of self-esteem as reported in the individual RSE surveys.

Figure 6 Graph Showing the Levels of Self-Esteem Found From the RSE Surveys



New General Self-Efficacy Scale. The NGSE scale was used to determine the level of self-efficacy for each participant of this study. The participants were given instructions regarding how to complete the survey. Data was collected and analyzed. The results showed that most male and female participants showed signs of moderate self-efficacy. Two male participants and two female participants were found to have signs of low self-efficacy. Eight male and eight female participants were found to have signs of moderate self-efficacy. Figure 7 depicts the levels of self-efficacy found from the NGSE surveys completed by participants of this study.

Figure 7 Graph Depicting the Levels of Self-Efficacy Found in the Participants of This Study



Research Questions Answered

The research questions were answered using the interview, surveys, and observations. In addition, the themes developed helped to support and answer these questions.

Research Question 1

Please describe for me how obesity impacts your self-confidence. Regardless of gender, this interview question revealed that obesity had impacted self-confidence in all the participants of this study. The main response from the face-to-face interviews showed obesity making participants feel more self-conscious, less confident in their abilities, and worried of what others think of their appearance. This question revealed that self-confidence had received a significant impact in these service members struggling with obesity. The interview responses mentioned feelings of low confidence, feeling down or low, being uncomfortable with oneself and not liking one's own body. During observation, it was noticed that when the participants were describing the impact of obesity on their self-confidence, they appeared uncomfortable considering the answers.

Research Question 2

Please describe for me how obesity impacts your self-efficacy. The interviews showed that many of the participants felt that obesity did not impact their self-efficacy or that it impacted it mildly. The answers revealed that those who felt their self-efficacy had been impacted felt as if they could not perform tasks or do their jobs as efficiently as when they were within the military standards. The survey revealed the same results as the interview questions, and most participants exhibited moderate self-efficacy. The interview answers and survey answers suggest that self-efficacy does not receive a significant impact in service members struggling with obesity.

Research Question 3

Please describe for me how obesity impacts you within the military community. The interview answers revealed that many of the participants felt scrutinized, judged, and less accomplished within the military community when struggling with obesity. Some were embarrassed in front of their leadership and subordinates because they felt that they had failed to set an example. Participants felt that they had been overlooked for certain positions or jobs within the community. The answers to the questions suggest that obesity has a significant impact on service members within the military community.

Research Question 4

Please describe for me how obesity impacts you in your current position. The interview answers revealed that most of the service members had been impacted in their current positions. Obesity had prevented them from progressing in their careers; they were stalled until they could meet the standards set by the Army. This question also revealed that many of the participants felt bullied regarding their weight in their current positions. The answers to these questions revealed that obesity had significantly impacted these service members in their current positions.

Research Question 5

Please describe for me how obesity impacts your social life. The interview results for this question were split. Half of the participants felt no impact on their social life. The other half struggled with feelings of embarrassment about how they looked, feeling as though others were judging them, and not desiring to socialize due to restrictive diets. For some, the impact of obesity on their social life was significant; however, there was no impact for others.

Research Question 6

Please describe for me how obesity impacts you at work. The interview questions revealed that many of the service members had been impacted at work. Some had not been able to deploy or perform their jobs. They had not been able to attend schools that could further their career because they had been flagged from favorable action. Some service members felt teased and discriminated against at work because they were obese. Obesity made some participants struggle to complete the physical fitness tasks required of them. Overall, obesity significantly impacted the participants of this study at work.

Research Question 7

Please describe for me the unique stressors that you feel you experience because you are a military service member. The results for this question revealed that the service members considered maintaining military height and weight standards, restrictive rules, and a loss of self-identity to be unique stressors that they experience. Less-often mentioned stressors included geographical separation from family, hectic work environment, and constant fear of war.

Research Question 8

Please describe for me how you feel about the military height and weight standards. The answers to these questions revealed that the service members considered the military's height and weight standards outdated and unfair. The participants felt that the standards were unrealistic

and did not accurately represent their specific body shapes or types. They also considered them difficult to meet and maintain throughout a career.

Research Question 9

Please describe for me how struggling with obesity makes you feel as a service member who must meet a specific standard based on height and weight. The interview answers revealed that most of the participants were frustrated and anxious about meeting the height and weight standards set forth by the Army. Some felt that they would never be able to meet the standards. Some felt like failures and stated that standards promotes eating disorders and body dysmorphia within the military community.

Research Question 10

Please describe for me if obesity makes you feel anxious in any way. Throughout the interview answers, there were many statements of participants' feeling anxious. The face-to-face interview answers revealed that the service members were anxious about meeting height and weight standards, how they looked to their peers, and the future of their careers. The interview answers showed that obesity had made a significant impact on the service members' anxiety. The questions of the GAD-7 showed that most of the participants, regardless of gender, demonstrated signs of minimal anxiety. There was a difference between what participants said in person and the survey answers they gave.

Research Question 11

Please describe for me if obesity makes you feel depressed in any way. Throughout the face-to-face interviews, many participants expressed feeling low or depressed. During the interviews, it was revealed that most of the participants felt depressed because they did not feel that they would be able meet or maintain the military height and weight standards and felt that

they could lose their jobs. They were not able to plan because they were at standstills in their careers. Some were experiencing feelings of inadequacy. The interview answers suggest that obesity had made a significant impact on the service members' feelings of depression. The survey questions of the PHQ-9 revealed that most of the participants showed signs of mild to moderately severe depression.

Summary

Throughout the face-to-face interview sessions, the participants provided in-depth descriptions regarding how obesity had impacted each of them individually. The in-person interviews allowed for the observation of body language, tone, and expression throughout the questions. The surveys provided less-specific and more-overall views of the participants' self-esteem, self-efficacy, anxiety, and depression. The answers to the questions were used to explore the following research questions: *In what ways does obesity impact the career of a service member? How do service members describe the impact that obesity has on their self-confidence and self-efficacy at work and at home? How does obesity impact service members socially within the military community?* The interviews and surveys were used to obtain data to input into the ATLAS.ti software program to identify the three key themes that emerged: negative impact of obesity, obesity's impact on health, obesity's impact on the career of active-duty service members in the U.S. Army. Each of the themes provided a network that strengthened the evidence that obesity has an impact on the mental health of active-duty service members. These face-to-face interviews, combined with the observations and surveys, have provided a window into the feelings with which active-duty service members struggle if they are not within the height and weight standards of the military.

CHAPTER FIVE: CONCLUSION

Overview

This chapter presents a discussion of the findings from the face-to-face interviews, observations, and surveys associated with the mental impact of obesity on active-duty service members in the U.S. Army. This chapter supports the results presented in Chapter 4 regarding the research questions of what ways obesity impacts the career of a service member, how service members describe the impact that obesity has on their self-confidence and self-efficacy at work and at home, and how obesity impacts service members within the military community. This chapter presents the conclusion of the results in the summary of findings as well as a discussion, implications, delimitations and limitations, and recommendations for future research.

Summary of Findings

The aim of this phenomenological study was to explore the three research questions and provide insight into the impact that obesity has on the mental health of active-duty service members in the U.S. military. Face-to-face interviews, observations, and surveys were used to explore and provide answers for each of the research questions. ATLAS.ti software was used to support and establish connections throughout the research process. The themes developed throughout the process helped to answer the research questions.

The three main themes revealed through the face-to-face interviews were the negative impact of obesity, obesity's impact on health, and obesity's impact on career. In the first theme, participants described the negative impact that obesity had made on their self-confidence, work performance, social life, and mental health. Service members felt anxious about meeting military height and weight standards and worried about their career progression. They felt that they faced judgement from their peers due to an outdated system used by the military to uphold standards.

The pressure to conform to the physical standards had affected their overall well-being and perception within the military community.

In the second theme, participants described how obesity had impacted their self-confidence, self-efficacy, career progression, and mental health. Many of the participants mentioned feelings of being judged, limited, and not meeting standards as significant obstacles to their social life, work performance, and overall well-being. Many of the participants felt that military height and weight standards were unhealthy and unrealistic to meet and maintain. It was expressed that obesity had contributed to the stress and challenges that these service members were facing in their military roles.

The third theme was obesity's impact on career. Participants described how obesity had impacted their self-confidence, work lives, social lives, and military careers. In their roles as service members, they faced challenges in meeting military height and weight standards, feelings of being judged, anxiety, depression, and unique stressors. Obesity had impacted their overall well-being regarding their careers. All three themes are interconnected and overlap, and the combination of all three themes, along with their subthemes, supports the idea that obesity has a mental impact on active-duty service members.

Discussion

The purpose of this study was to explore the impact that obesity has on the mental health of soldiers in the U.S. Army. The face-to-face interviews allowed for the participants to provide in-depth information about their feelings regarding the interview questions. The use of open-ended questions allowed for further investigation when necessary. The use of the surveys was selected to obtain an overall impression of the participants' feelings of depression, anxiety, self-confidence, and self-efficacy. By exploring a specific group of service members who were on

active duty and self-reported participating in the ABCP, this study has produced results that help to fill gaps in the literature related to the mental impact of obesity on service members.

Empirical Literature Discussion

There is considerable research available regarding obesity and the military as well as the prevalence of obesity, dangers of obesity, military body composition standards, bias and stigma surrounding obesity in the military, and the mental impact of being overweight on a service member. However, there has been a lack of research exploring the impact that obesity has on the mental health of active-duty service members. This study has helped to fill the gap in literature related to active-duty service members and the impact obesity has on their mental health, careers, self-confidence, and self-efficacy at work and home as well as socially and within the military community.

Self-Confidence. Many negative impacts of obesity have been documented in research. The prevalence of obesity in the U.S. military has increased and has led to a national security threat for the country (Legg et al., 2021). The theme of negative impacts of obesity from Chapter 4 aligns with the existing literature related to impacts of obesity. Obesity has been found to cause psychological health issues that include eating disorders, depressive symptoms, anxiety, and issues with self-esteem and body image (Wu & Berry, 2018). The participants in this study expressed that they had issues with self-confidence, body image, feelings of anxiety, and feelings of depression, all of which align with the available research. This study further found that obesity had impacted self-confidence in a significant manner. Participants expressed that they did not feel that they could perform their jobs due to a lack of self-confidence. F-5 confirmed that self-confidence impacts ability by stating, “Makes me feel like I failed at the simplest tasks and embarrasses me.”

Work Life. This research has also shown a connection between obesity and work performance. This observation aligns with prior research findings that have associated body composition and performance in the military community. Military service members are tested on muscular endurance, strength, and power and scored based on their performance (Harty et al., 2022). These scores are recorded in a service member's official record. Participants expressed throughout the interviews that performance or ability to perform physical fitness task had been made more difficult due to their being obese. Prior research has shown that when a service member is overweight, they sometimes face discrimination and poor treatment by their peers and leadership; this condition leads to chronic stress, depression, and other mental health issues (Jung et al., 2019). Participants in this study expressed being bullied by peers and declined positions because they were obese.

Social Life. Prior research has suggested that, in the past, a person who was overweight had a higher social status, implying that they had good physical and mental health (Steptoe & Frank, 2023). The participants in this study felt like they were less than their peers, and this feeling affected their social lives. They would choose not to participate in social events due to feeling ashamed or embarrassed or wishing not to be tempted while on a restrictive diet plan. They expressed being unhappy with their lack of socializing.

Military Career. Military culture promotes a specific lean and muscular appearance for all soldiers (Christian et al., 2020). This appearance is maintained through physical fitness standards. Active-duty military service members must meet and maintain these standards or experience consequences. Research has shown that when these standards are not maintained, a service member can stall in their career or be separated from the military altogether (van Beukering et al., 2021). The results from this study align with prior research. The participants

expressed that they were either stalled in their careers, passed over for positions, or facing the possibility of being separated from the military. Some participants felt that they had been treated differently from their peers.

Mental Health. Active-duty service members face unique stressors that are associated with their jobs and dangers that the average American does not (Biggs et al., 2019). While research has shown that obesity not only causes physiological problems but also contributes to psychological problems, there is little available information regarding active-duty service members. The research that is available has shown a correlation between obesity and increased depression and anxiety (Steptoe & Frank, 2023). The impact that obesity has on the mental health of active-duty service members at work, at home, and socially was further explored in this study. The results showed that obesity impacts service members in all aspects of life. It interferes with their ability to focus on work because they are attempting to meet a specific standard. The constant pressure to meet standards can cause some to feel more depressed and anxious rather than motivated to lose weight. The participants also expressed that they felt the standards by which they were being measured were outdated, unrealistic, and unfair.

Theoretical Literature Discussion

This study was guided by the desire to explore and understand the human experience regarding the impact obesity has on the mental health of a population. Constructivism has been presented in Chapter 2, and this study used a social constructivism framework to understand the world in which active-duty service members reside and their unique experiences within the military community.

Social Constructivism. Using the Moustakas method involved choosing a phenomenon to investigate, analyzing it, and then representing the phenomenon (Moustakas, 1994). This study

used a transcendental phenomenological approach focused on the perception of the participants and how they perceived, felt, thought, and judged the phenomenon. The participants were asked to describe a specific feeling associated with the impact that obesity had on different aspects of their lives. A researcher's interpretations of information can be impacted by their own personal experiences and backgrounds. The researcher in this study used their background and history in the military community to establish common ground with each of the participants. The meanings of the participant's experiences were guided by their own values and behaviors (Creswell & Poth, 2018).

Using this framework allowed the researcher to establish common ground and allow the participants to feel more comfortable throughout the interview process. The participants did not need to stop to explain military acronyms, and the researcher already knew the standards set by the ABCP. When examining the results through epoch, it was seen that obesity had made a significant impact, beyond the surface level, on the lives of the service members. Participants reported that obesity had impacted their self-confidence, self-efficacy, work performance, work lives, social lives, military careers, career progressions, and mental health.

Using ontological assumptions allowed the researcher to explore the unique perspectives of each of the participants. As active-duty service members who were all participating in the ABCP, the participants expressed unique perspectives that led to shared experiences. A social constructivism framework was used to learn or understand each participant's experience. Social constructivism helps researchers explore multiple connections through social and historical contexts (Creswell & Poth, 2018). Constructivism allowed the researcher to understand the intricate layers of the military world and the cultural norms that each service member had experienced, such as military height and weight standards, physical fitness testing, and body

measurements. Participants were allowed to express their feelings about their experiences in connection to obesity, and they were able to explore all the aspects that it had impacted in their lives.

Implications

Empirical Implications

The face-to face interviews with the participants allowed the researcher to explore the personalized experiences regarding the impact obesity had made on their mental health. The collected data produced results showing a significant connection between obesity and an impact on the mental health of active-duty service members. The surveys provided an overall impression of the participants' levels of self-esteem, self-efficacy, anxiety, and depression.

The study addressed the three research questions stated above, and the results have indicated that there is a significant impact that obesity has on active-duty service members. The face-to-face interviews allowed the researcher and the participants to become better informed regarding the personal experiences that service members face due to obesity. Observations of the participants allowed the researcher to obtain an understanding of how the participants truly felt through body language and tone. This study has shown that obesity has an impact on the mental health of active-duty service members. This impact affects numerous areas of a service member's life, not simply the physical.

Theoretical Implications

The experience of being obese as an active-duty service member can be seen as a phenomenon. Use of a transcendental phenomenological approach and examination of the perspectives of the service members indicated how they were experiencing life and how they

were viewed. As A researcher it is possible to feel what they feel and experience the frustration that they do. Through this approach, the participants were able to learn how they viewed themselves and beliefs about themselves that they had not previously known.

This study has shown that the culture and values that are standard in the U.S. military do not coincide with the values and beliefs of those who are not in the military community. Beliefs can be swayed by those on the outside, breeding discontent with rules and standards. The participant's reality was presented as they saw it and transcribed so that they could review their thoughts and feelings; for some, it was the first time they had expressed their feelings to another person regarding the impact obesity had made on their lives. This study allowed them to be free with their words and feelings.

Practical Implications

The results of this study have provided the participants with information about the impact obesity has made on their mental health. The results have also provided valuable feedback, from a service member's perspective, for health providers and military leadership. The information provided in this report could be used to establish a program that focuses on both behavioral health and weight loss for those struggling with obesity.

Delimitations and Limitations

The purpose of this qualitative transcendental phenomenological study was to explore the impact obesity has on active-duty service members in the U.S. military. This section discusses the delimitations and limitations present in this study.

Delimitations

The first delimitation associated with this study was that it was conducted only on one installation. The reason for choosing this location was that the researcher had access to this

location and the active-duty soldiers assigned to this duty station due to living within the community. The second delimitation was that only active-duty service members who were participating in the ABCP due to their not meeting height and weight standards were chosen for the study. This choice was made so that all participants would be obese at the time of the study and their experiences would be ongoing throughout the study. The third delimitation was the location of the face-to-face interviews. This location offered adequate privacy in which the service members could feel comfortable expressing themselves fully.

Limitations

Several limitations were associated with this study. The first limitation was that the information provided in the face-to-face interviews was subjective, and the researcher relied on the honesty of the participants. Service members fear retaliation against them for their opinions and beliefs. Another limitation involved motivating service members to participate without providing favors in return. One potential participant wanted the PHQ-9 and GAD-7 charted in her medical records that she had high anxiety and high depression, or she would not agree to participate; she was not chosen for the study. She was not chosen because there was no medical recording involved. In addition, the number of participants was limited to 20, making the sample size small in comparison to the number of active-duty service members in the U.S. Army. The findings may not be generalizable across other populations because only participants who were active-duty and self reportedly participating in the ABCP were chosen for the study.

Recommendations for Future Research

In consideration of the study findings and the limitations and delimitations placed on the study, future research should be performed on a larger participant pool. Recruiting of all active-duty service members from a variety of installations could produce a more diverse pool of

participants. Approaching a military service member to ask them whether they are out of standard can make them feel uncomfortable and afraid of repercussions; therefore, it would be beneficial in future research to advertise in a manner that would allow them to approach the investigator instead.

Summary

This study sought to understand the impact of obesity on the mental health of active-duty service members through a phenomenological approach using transcendental methods to explore the feelings, experiences, and perceptions of its participants. This study has presented data supporting the idea that obesity does impact the mental health of active-duty service members. The study has further identified significant impacts to the self-confidence, military career progression, and mental health of service members struggling with obesity. The data revealed that all participants had been impacted by obesity in a negative manner, regardless of gender. The participants provided valuable insights into the unique stressors they were facing, as well as the fear associated with the potential separation from duty due to failure to meet or maintain military height and weight standards. The results of this study have filled gaps in the literature regarding active-duty service members participating in the ABCP. There were limitations to the study, but its results have provided future investigators with the foundation for further research into the impact obesity has on the mental health of those who serve our country.

References

Ahlin, E. (2019). Semi-structured interviews with expert practitioners: Their validity and significant contribution to Translational Research. *Sage Research Methods Cases*. https://doi.org/10.4135/9781526466037

Alimoradi, Z., Golboni, F., Griffiths, M. D., Broström, A., Lin, C.-Y., & Pakpour, A. H. (2020). Weight-related stigma and psychological distress: A systematic review and meta-analysis. *Clinical Nutrition*, *39*(7), 2001–2013. https://doi.org/10.1016/j.clnu.2019.10.016

Almandoz, J. P., Xie, L., Schellinger, J. N., Mathew, M. S., Marroquin, E. M., Murvelashvili, N., Khatiwada, S., Kukreja, S., McAdams, C., & Messiah, S. E. (2022). Changes in body weight, health behaviors, and mental health in adults with obesity during the covid-19 pandemic. *Obesity*, *30*(9), 1875–1886. https://doi.org/10.1002/oby.23501

American Psychological Association. (2023). *Self-efficacy teaching tip sheet*. American Psychological Association. https://www.apa.org/pi/aids/resources/education/self-efficacy

Bekesiene, S. (2023). Impact of personality on cadet academic and military performance within mediating role of self-efficacy. *Frontiers in Psychology*, *14*. https://doi.org/10.3389/fpsyg.2023.1266236

Bhandari, P. (2023, June 22). *What is qualitative research?: Methods & examples*. Scribbr. https://www.scribbr.com/methodology/qualitative-research/

Briggs, E. C., Fairbank, J. A., Tunno, A. M., Lee, R. C., Corry, N. H., Pflieger, J. C., Stander, V. A., & Murphy, R. A. (2019). Military life stressors, family communication and satisfaction: Associations with children's psychosocial outcomes. *Journal of Child & Adolescent Trauma*, *13*(1), 75–87. https://doi.org/10.1007/s40653-019-00259-z

Brown, A., Flint, S. W., & Batterham, R. L. (2022). Pervasiveness, impact and implications of weight stigma. *eClinicalMedicine*, *47*, 101408. https://doi.org/10.1016/j.eclinm.2022.101408

Buitrago-Garcia, D., Salanti, G., & Low, N. (2022). Studies of prevalence: How a basic epidemiology concept has gained recognition in the COVID-19 pandemic. *BMJ Open*, *12*(10). https://doi.org/10.1136/bmjopen-2022-061497

Busetto, L., Wick, W., & Gumbinger, C. (2020). How to use and assess qualitative research methods. *Neurological Research and Practice*, *2*(1). https://doi.org/10.1186/s42466-020-00059-z

Cawley, J., Biener, A., Meyerhoefer, C., Ding, Y., Zvenyach, T., Smolarz, B. G., & Ramasamy, A. (2021). Direct medical costs of obesity in the United States and the most populous

states. *Journal of Managed Care & Specialty Pharmacy*, *27*(3), 354–366. https://doi.org/10.18553/jmcp.2021.20410

CDC. (2022b, September 27). *Overweight & obesity*. Centers for Disease Control and Prevention. https://www.cdc.gov/obesity/index.html

Centers for Disease Control and Prevention. (2022, September 27). *Number of states with high rates of adult obesity more than doubles*. Centers for Disease Control and Prevention. https://www.cdc.gov/media/releases/2022/p0927-states-obesity.html

Centers for Disease Control and Prevention. (2023, June 20). *Unfit to serve*. Centers for Disease Control and Prevention. https://www.cdc.gov/physicalactivity/resources/unfit-to-serve/index.html

Chen, G., Gully, S.M. and Eden, D. (2001) 'New general self-efficacy scale', *PsycTESTS Dataset*, 4, pp. 62–83. doi:10.1037/t08800-000.

Christian, A., Parekh, B., & Koritzky, G. (2020). Bias and discrimination against men with overweight in the military. *Health Psychology Open*, *7*(2), 205510292098537. https://doi.org/10.1177/2055102920985374

Chu, D.-T., Minh Nguyet, N. T., Nga, V. T., Thai Lien, N. V., Vo, D. D., Lien, N., Nhu Ngoc, V. T., Son, L. H., Le, D.-H., Nga, V. B., Van Tu, P., Van To, T., Ha, L. S., Tao, Y., & Pham, V.-H. (2019). An update on obesity: Mental consequences and psychological interventions. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, *13*(1), 155–160. https://doi.org/10.1016/j.dsx.2018.07.015

Cooper, A. D., Warner, S. G., Rivera, A. C., Rull, R. P., Adler, A. B., Faix, D. J., Neff, R., Deagle, E. A., Caserta, R. J., & LeardMann, C. A. (2020). Mental health, physical health, and health-related behaviors of U.S. Army Special Forces. *PLOS ONE*, *15*(6). https://doi.org/10.1371/journal.pone.0233560

Corry, N. H., Radakrishnan, S., Williams, C. S., Sparks, A. C., Woodall, K. A., Fairbank, J. A., & Stander, V. A. (2019). Association of Military Life Experiences and health indicators among military spouses. *BMC Public Health*, *19*(1). https://doi.org/10.1186/s12889-019-7804-z

Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE.

Creswell, J. W., & Poth, C. N. (2018). *Qualitative Inquiry & Research Design choosing among five traditions* (4th ed.). Sage.

CRS. (2022, August 15). Defense primer: Military physical fitness testing and body composition. https://crsreports.congress.gov/product/pdf/IF/IF12192

Csizmar, G. T., & Irwin, M. (2021). Efficacy of weight loss interventions in United States active duty military populations: A systematic review. *Military Medicine*, *186*(11–12), 1093–1099. https://doi.org/10.1093/milmed/usab012

DHA. (n.d.). *How the military measures body composition*. HPRC. https://www.hprc-online.org/physical-fitness/training-performance/how-military-measures-body-composition

DoD. (2022, March 10). *DOD Instruction 1308 - Executive Services Directorate*. Directives Division Website. https://www.esd.whs.mil/portals/54/documents/dd/issuances/dodi/130803p.pdf

Dubik, Lt. Gen. J. M. (2023, January 27). *Recruiting in the face of Global Security Challenges U.S. Army*. AUSA. https://www.ausa.org/articles/recruiting-face-global-security-challenges

Frueh, B. C., Madan, A., Fowler, J. C., Stomberg, S., Bradshaw, M., Kelly, K., Weinstein, B., Luttrell, M., Danner, S. G., & Beidel, D. C. (2020). "Operator syndrome": A unique constellation of medical and behavioral healthcare needs of Military Special Operation Forces. *The International Journal of Psychiatry in Medicine*, *55*(4), 281–295. https://doi.org/10.1177/0091217420906659

García, J.A. *et al.* (2019) 'Self esteem levels vs global scores on the Rosenberg self-esteem scale', *Heliyon*, 5(3). doi:10.1016/j.heliyon.2019.e01378.

Hanson, J. A., Wagner, G., & Dretsch, M. (2020). Cognitive disinhibition and infrequent moderate-to-intense physical activity linked with obesity in U.S. soldiers. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, *26*(3), 973–981. https://doi.org/10.1007/s40519-020-00932-5

Harty, P. S., Friedl, K. E., Nindl, B. C., Harry, J. R., Vellers, H. L., & Tinsley, G. M. (2021). Military body composition standards and physical performance: Historical Perspectives and Future Directions. *Journal of Strength and Conditioning Research*, *36*(12), 3551–3561. https://doi.org/10.1519/jsc.0000000000004142

Holl, D. (2019, August 8). *Army Wellness Centers Offer Soldiers, Families World-class fitness services*. www.army.mil. https://www.army.mil/article/225290/army_wellness_centers_offer_soldiers_families_world_class_fitness_services

Hollerbach, B. S., Haddock, C. K., Kukić, F., Poston, W. S., Jitnarin, N., Jahnke, S. A., DeBlauw, J. A., & Heinrich, K. M. (2022). Comparisons of baseline obesity prevalence and its association with perceived health and physical performance in military officers. *Biology*, *11*(12), 1789. https://doi.org/10.3390/biology11121789

Jastreboff, A. M., Kotz, C. M., Kahan, S., Kelly, A. S., & Heymsfield, S. B. (2018). Obesity as a disease: The Obesity Society 2018 Position statement. *Obesity*, *27*(1), 7–9. https://doi.org/10.1002/oby.22378

Jung, F. U., Bae, Y. J., Kratzsch, J., Riedel-Heller, S. G., & Luck-Sikorski, C. (2019). Internalized weight bias and cortisol reactivity to social stress. *Cognitive, Affective, & Behavioral Neuroscience*, *20*(1), 49–58. https://doi.org/10.3758/s13415-019-00750-y

Keefer, M., Walsh, J., Adams, K., Climstein, M., Harris, C., & DeBeliso, M. (2022). Tactical masters athletes: BMI Index Classifications. *Sports*, *10*(2), 22. https://doi.org/10.3390/sports10020022

Krukowski, R. A., Hare, M. E., Talcott, G. W., Gladney, L. A., Johnson, K. C., Richey, P. A., Kocak, M., Keller, P. L., Hryshko-Mullen, A., & Klesges, R. C. (2018). Dissemination of the look-ahead intensive lifestyle intervention in the United States Military: A randomized controlled trial. *Obesity*, *26*(10), 1558–1565. https://doi.org/10.1002/oby.22293

Kumanyika, S. K. (2019). Unraveling common threads in obesity risk among racial/ethnic minority and migrant populations. *Public Health*, *172*, 125–134. https://doi.org/10.1016/j.puhe.2019.04.010

Lavallee, K. L., Zhang, X. C., Schneider, S., & Margraf, J. (2021). Obesity and Mental Health: A longitudinal, cross-cultural examination in Germany and China. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.712567

Legg M;Stahlman S;Chauhan A;Patel D;Hu Z;Wells N; (n.d.). *Obesity prevalence among active component service members prior to and during the COVID-19 pandemic, January 2018, 2021*. MSMR. https://pubmed.ncbi.nlm.nih.gov/35485798/

Manjunatha. (2022). Obesity and Growing Health Risks - A Review. *Asian Journal of Nursing Education and Research*, 350–352. https://doi.org/10.52711/2349-2996.2022.00073

Mansell, P. C., & Turner, M. J. (2022). Testing the REBT-I model in athletes: Investigating the role of self-confidence between irrational beliefs and psychological distress. *Psychology of Sport and Exercise*, *63*, 102284. https://doi.org/10.1016/j.psychsport.2022.102284

Martins, L. B., Monteze, N. M., Calarge, C., Ferreira, A. V., & Teixeira, A. L. (2019). Pathways linking obesity to neuropsychiatric disorders. *Nutrition*, *66*, 16–21. https://doi.org/10.1016/j.nut.2019.03.017

Masheb, R. M., Kutz, A. M., Marsh, A. G., Min, K. M., Ruser, C. B., & Dorflinger, L. M. (2019). “making weight” during military service is related to binge eating and eating pathology for veterans later in life. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, *24*(6), 1063–1070. https://doi.org/10.1007/s40519-019-00766-w

Meyer, S., & Cole, R. (2019). Army body composition program study results concerning: Enrollees are more over fat than expected. *Military Medicine*, *184*(Supplement_1), 400–408. https://doi.org/10.1093/milmed/usy302

Mirriam-Webster. (2014). *Webster's dictionary of the English language*.

Moustakas, C. (1994). *Phenomenological Research Methods*. Sage Publications.

Odero, S. A., Mwangi, P., Odhiambo, R., Mumbua Nzioka, B., Shumba, C., Ndirangu-Mugo, E., & Abubakar, A. (2023). Psychometric Evaluation of PHQ–9 and gad–7 among community health volunteers and nurses/midwives in Kenya following a nation-wide telephonic survey. *Frontiers in Psychiatry*, *14*. https://doi.org/10.3389/fpsyt.2023.1123839

Pan, M., Tai, R., Liu, Y., sun, Z., Yuan, H., Wu, Q., Liu, Y., & Sun, C. (2021). Pyroptosis: A possible link between obesity-related inflammation and inflammatory diseases. *Journal of Cellular Physiology*, *237*(2), 1245–1265. https://doi.org/10.1002/jcp.30627

Police, S. B., & Ruppert, N. (2022). *The U.S. military's battle with obesity*. Journal of nutrition education and behavior. https://pubmed.ncbi.nlm.nih.gov/35534103/

Rindler, G. A., Gries, A., & Freidl, W. (2023). Associations between overweight, obesity, and mental health: A retrospective study among European adults aged 50+. *Frontiers in Public Health*, *11*. https://doi.org/10.3389/fpubh.2023.1206283

Robinson, E., Haynes, A., Sutin, A., & Daly, M. (2020). Self-perception of overweight and obesity: A review of mental and physical health outcomes. *Obesity Science & Practice*, *6*(5), 552–561. https://doi.org/10.1002/osp4.424

Sarwer, D. B., & Polonsky, H. M. (2016). The psychosocial burden of obesity. *Endocrinology and Metabolism Clinics of North America*, *45*(3), 677–688. https://doi.org/10.1016/j.ecl.2016.04.016

Satter, M. (2023, October 18). *Military obesity rates soar, compounding recruitment challenges*. Roll Call. https://rollcall.com/2023/10/18/military-obesity-rates-soar-compounding-recruitment-challenges/

Shank, L. M., Schvey, N. A., Ekundayo, K., Schreiber-Gregory, D., Bates, D., Maurer, D., Spieker, E., Stephens, M., Tanofsky-Kraff, M., & Sbrocco, T. (2019). The relationship between weight stigma, weight bias internalization, and physical health in military personnel with or at high risk of overweight/obesity. *Body Image*, *28*, 25–33. https://doi.org/10.1016/j.bodyim.2018.11.003

Solomon, S., Shank, L. M., Lavender, J. M., Higgins Neyland, M. K., Gallager-Teske, J., Markos, B., Haynes, H., Repke, H., Rice, A. J., Sbrocco, T., Wilfley, D. E., Schvey, N. A., Jorgensen, S., Ford, B., Ford, C. B., Haigney, M., Klein, D. A., Quinlan, J., & Tanofsky-Kraff, M. (2022). The relationship between anxiety, coping, and disordered-eating attitudes

in adolescent military-dependents at high risk for excess weight gain. *Military Psychology*, *35*(2), 95–106. https://doi.org/10.1080/08995605.2022.2083448

Spitzer, R., Kroenke, K., & Williams, J. (1999). Patient health questionnaire and general anxiety disorder (PHQ-9 and gad-7). https://uhs.fsu.edu/sites/g/files/upcbnu1651/files/docs/PHQ-9%20and%20GAD-7%20Form_a.pdf

Stefanovics, E. A., Potenza, M. N., & Pietrzak, R. H. (2020). PTSD and obesity in U.S. military veterans: Prevalence, health burden, and suicidality. *Psychiatry Research*, *291*, 113242. https://doi.org/10.1016/j.psychres.2020.113242

Stenfors, T., Kajamaa, A., & Bennett, D. (2020). How to … assess the quality of qualitative research. *The Clinical Teacher*, *17*(6), 596–599. https://doi.org/10.1111/tct.13242

Steptoe, A., & Frank, P. (2023, March 29). *Obesity and psychological distress*. Philosophical transactions of the Royal Society of London. Series B, Biological sciences. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10475872/

Tanofsky-Kraff, M., Sbrocco, T., Theim, K. R., Cohen, L. A., Mackey, E. R., Stice, E., Henderson, J. L., McCreight, S. J., Bryant, E. J., & Stephens, M. B. (2013). Obesity and the US Military Family. *Obesity*, *21*(11), 2205–2220. https://doi.org/10.1002/oby.20566

The Army Body Composition Program. (2019). https://armypubs.army.mil/epubs/dr_pubs/dr_a/pdf/web/arn7779_ar600-9_final.pdf

Vafiadis, D. (2021, April 21). *How Excess Weight Impacts Our Mental and Emotional Health*. The National Council on Aging. https://www.ncoa.org/article/how-excess-weight-impacts-our-mental-and-emotional-health/

van Beukering, I. E., Smits, S. J., Janssens, K. M., Bogaers, R. I., Joosen, M. C., Bakker, M., van Weeghel, J., & Brouwers, E. P. (2021). In what ways does health-related stigma affect sustainable employment and well-being at work? A systematic review. *Journal of Occupational Rehabilitation*, *32*(3), 365–379. https://doi.org/10.1007/s10926-021-09998-z

Wang, S.-H., Chung, P.-S., Lin, Y.-P., Tsai, K.-Z., Lin, S.-C., Fan, C.-H., Lin, Y.-K., & Lin, G.-M. (2020). Metabolically healthy obesity and physical fitness in military males in the chief study. *Scientific Reports*, (11). https://doi.org/10.21203/rs.3.rs-119378/v1

Wang, Y., Beydoun, M. A., Min, J., Xue, H., Kaminsky, L. A., & Cheskin, L. J. (2020). Has the prevalence of overweight, obesity and central obesity levelled off in the United States? trends, patterns, disparities, and future projections for the obesity epidemic. *International Journal of Epidemiology*, *49*(3), 810–823. https://doi.org/10.1093/ije/dyz273

Ward, Z. J., Bleich, S. N., Cradock, A. L., Barrett, J. L., Giles, C. M., Flax, C., Long, M. W., & Gortmaker, S. L. (2019). Projected U.S. state-level prevalence of adult obesity and severe

obesity. *New England Journal of Medicine*, *381*(25), 2440–2450. https://doi.org/10.1056/nejmsa1909301

Webber, B. J., Ruiz, S. A., Talcott, G. W., Little, M. A., & Tate, D. F. (2020). Weight gain of service members after Basic Military training. *American Journal of Preventive Medicine*, *58*(1), 117–121. https://doi.org/10.1016/j.amepre.2019.08.022

Wen, Y., Liu, T., Li, S., Gong, R., & Li, C. (2022). Trends in the prevalence of metabolically healthy and unhealthy obesity in the U.S. adult population: Analysis of eight Nhanes cross-sectional survey cycles, 1999–2014. *BMJ Open*, *12*(11). https://doi.org/10.1136/bmjopen-2022-062651

WHO. (2023). *Obesity*. World Health Organization. https://www.who.int/health-topics/obesity#tab=tab_1

Wu, Y., & Berry, D. C. (2018). Impact of weight stigma on physiological and psychological health outcomes for overweight and obese adults: A systematic review. *Journal of Advanced Nursing*, *74*(5), 1030–1042. https://doi.org/10.1111/jan.13511

Yang, D., Beauvais, A., Forbes, W. L., Beckman, D., Estes, J., Martinez, C., & Wardian, J. (2021). Relationship between body mass index and diagnosis of obesity in the military health system active duty population. *Military Medicine*, *187*(7–8). https://doi.org/10.1093/milmed/usab292

Appendix A

Consent Form

Consent: General

Title of Project: The Mental Effect Of Obesity On Active-Duty Service Members In The United States: A Phenomenological Approach

Principle Investigator: [redacted], researcher. Doctoral Candidate, School of Health Sciences, Liberty University.

Invitation to be a Part of a Research Study

You are invited to participate in a research study. To participate, you must be at least 18 years of age, an active-duty service member, and fall into the category of obese by military standards. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research.

What is the study about and why is it being done?

The purpose of this study is to explore the mental impact that obesity has on military service members.

What will happen if you take part in this study?

If you agree to be in this study, I will ask you to do the following:

1. First procedure is to participate in an in-person, audio-recorded interview that will take no more than 1 hour.
2. Second procedure is to participate in 4 written surveys that will take no more than 1 hour.

How could you or other benefit from this study?

Participants should not expect to receive a direct benefit from taking part in this study.

What risks might you experience from being in this study?

The expected risks from participating in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

How will personal information be protected?

The records of this study will be kept private. Published reports will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher will have access to the records.

- Participant responses will be kept confidential by replacing names with pseudonyms.
- Interviews will be conducted in a location where others will not easily overhear the conversation.
- Data collected from you may be used in future research studies and/or shared with other researchers. If data collected from you is reused or shared, any information that could identify you, if applicable, will be removed beforehand.
- Data will be stored on a password-locked computer in a locked office. After three years, all electronic records will be deleted and all hardcopy records will be shredded.

- Recordings will be stored on a password locked computer for three years and then deleted. The researcher and members of her doctoral committee will have access to these recordings.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether to participate will not affect your current or future relations with Liberty University or [redacted]. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study, please contact the researcher at the email address/phone number included in the next paragraph. Should you choose to withdraw, data collected from you, it will be destroyed immediately and will not be included in this study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is [redacted]. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at [redacted] or at t[redacted]. You may also contact the researcher's faculty sponsor, [redacted], at [redacted]

Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the IRB. Our physical address is Institutional Review Board, [redacted] 24515: our phone number is [redacted], and our email address is [redacted]

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

Your Consent

By signing this document, you are agreeing to be in this study. Make sure you understand what the study is about before you sign. You will be given a copy of this document for your records. The researcher will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

□ The researcher has my permission to audio-record me as part of my participation in this study.

_____

Printed Subject Name

_____

Signature & Date

Appendix B

Recruitment Letter/ Verbal

Dear Potential Participant,

My name is [redacted], a doctoral candidate in the School of Health Sciences at Liberty University under the supervision of [redacted] the academic advisor/ faculty supervisor, I am conducting research as part of the requirements for a doctoral degree and to better understand a phenomenon. The purpose of my research is to explore the mental impact that obesity has on active-duty service members in the United States. I am writing to invite you to join my study. Participants must be at least 18 years of age, active-duty service member, and fall into the category of obese per military standards. Participants will be asked to take part in confidential audio recorded in-person interviews and 3 written surveys. The process should take approximately 1 hour to complete the procedures listed. Participation will be completely confidential, names and other identifying information will be requested as part of this study, but participant identities will not be disclosed.

To participate, please contact me at [redacted] . If you meet my participant criteria, I will work with you to schedule a time for an interview.

Aconsent document will be attached to this email. The consent document contains additional information about my research. If you choose to participate and have any questions, please contact me.

Sincerely,

[redacted]

808-[redacted]

518-[redacted]

Appendix C

Site Permission Request and Response

12/04/2023

[redacted]

Dear [redacted],

My name is [redacted], I am a graduate student in the School of Health Sciences at Liberty University, under the supervision of [redacted] my academic advisor/faculty supervisor and I am conducting research as part of the requirements for a doctoral degree and to better understand a phenomenon. The title of my research project is The Mental Effect of Obesity on Active- Duty Service Members in the United States: A Phenomenological Approach and the purpose of my study is to explore the mental impact obesity has on active-duty service members.

I am writing to obtain permission to conduct my research in the [redacted], and to [redacted] to participate in my research study.

Participants will be asked to participate in an audio recorded in-person interview and 4 written surveys. The data will be used to explore the mental impact obesity has on them personally. Participants will be presented with informed consent information prior to participating. Taking part in this study is completely voluntary, and participants are welcome to discontinue participation at any time.

Thank you for considering my request. If you choose to grant permission, please provide me with a signed statement on official letterhead indicating your approval.

Sincerely,

[redacted]

Doctoral Candidate

12/5/2023

[redacted]

Dear T[redacted]:

After careful review of your research proposal entitled The Mental Effect of Obesity on Active-Duty Service Members in the United States: A Phenomenological Approach, I have decided to grant you permission to conduct your study at the Armed Forces Wellness Center located on Fort Campbell, KY.

Sincerely,

[redacted]

Appendix D

Institutional Review Board Liberty University

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

January 24, 2024

[redacted]

Re: IRB Exemption - IRB-FY23-24-969 The Mental Effects Of Obesity On Active-Duty Service Members In The United States: A Phenomenological Approach

Dear Tegan Quigley, Marybeth Mitcham,

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under the following exemption category, which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:104(d):

Category 2.(iii). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:
The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by §46.111(a)(7).

For a PDF of your exemption letter, click on your study number in the My Studies card on your Cayuse dashboard. Next, click the Submissions bar beside the Study Details bar on the Study details page. Finally, click Initial under Submission Type and choose the Letters tab toward the bottom of the Submission Details page. Your information sheet and final versions of your study documents can also be found on the same page under the Attachments tab.

Please note that this exemption only applies to your current research application, and any modifications to your protocol must be reported to the Liberty University IRB for verification of continued exemption status. You may report these changes by completing a modification submission through your Cayuse IRB account.

If you have any questions about this exemption or need assistance in determining whether possible modifications to your protocol would change your exemption status, please email us at irb@liberty.edu.

Sincerely,

[redacted]

Administrative Chair
Research Ethics Office

Appendix E

DOD Institutional Agreement for Institutional Review Board Review

Department of Defense
Human Research Protection Program

DOD INSTITUTIONAL AGREEMENT
FOR INSTITUTIONAL REVIEW BOARD (IRB) REVIEW (IAIR)

General Instructions to Institutions and IRBs

- This form should be used when an institution will be engaged in human subject research and will use an Institutional Review Board (IRB) that is not organizationally or legally part of the institution. This Agreement will help ensure that the engaged institution with the federal assurance and the IRB providing the review and approval of the research (in accordance with 32 CFR 219 and DoD Instruction 3216.02) know the responsibilities of each party to this agreement. Contact your DoD Component Headquarters office (or DoD sponsor) for guidance if you want to submit an equivalent agreement or want to alter this form.
- This agreement will become an amendment to your DoD Assurance.
- Contact your DoD Component Headquarters office (or DoD sponsor) for guidance if you have questions.
- Follow your DoD Component Headquarters office (or DoD sponsor) instructions for paper or electronic submission.
- The "Institution Relying on the IRB Services" is the institution engaged in the research. The "Institution supplying the IRB Services" is the IRB or organization with the IRB.
- For DoD-sponsored extramural research: This agreement is needed for only for the external IRBs that will review DoD-sponsored research. It is not needed for any IRBs that review research not supported by DoD.

Department of Defense Human Research Protection Program

DOD INSTITUTIONAL AGREEMENT
FOR INSTITUTIONAL REVIEW BOARD (IRB) REVIEW

BETWEEN

INSTITUTION RELYING ON THE IRB SERVICES:
Naval Medical Center Portsmouth

AND

INSTITUTION SUPPLYING IRB SERVICES:
Liberty University

PART 1
INSTITUTION INFORMATION

This DoD Institutional Agreement for IRB Review describes the responsibilities of the engaged institution and the institution with the IRB. This Agreement, when signed, becomes part of the engaged institution's Federal Assurance for the Protection of Human Research Subjects approved by DoD (and may become part of the Federal wide Assurance (FWA) approved by the Department of Health and Human Services (DHHS)).

A. Engaged Institution Relying on the IRB

Name: Naval Medical Center Portsmouth
DoD Assurance Number: DHA000002
DoD Assurance Expiration: 08 Feb 2026
DHHS FWA Number: FWA00006001
DHHS IRB Number*: OHRP 00003882 & 00003883
DHHS FWA Expiration: 02 May 2028

B. Institution Supplying the IRB Review Services

Name: Liberty University
DHHS FWA Number: FWA00016439
DHHS FWA Expiration: 3/14/2024
DHHS IRB Number*: IRB00007258

*Provide for each IRB that serves as a reviewing IRB and is part of this agreement.

C. Scope

This Agreement applies to the following DoD-supported research conducted by the engaged institution:

[X] A single DoD-supported research protocol only (list title and other identifying information): IRB-FY23-24-969 - The Mental Effects Of Obesity On Active-Duty Service Members In The United States: A Phenomenological Approach

[ ] A group of DoD-supported research protocols (describe here or attach list):

[ ] All DoD-supported research performed by this institution.

D. Effective Dates

This Agreement is effective as of the date of the last authorized signature and will remain in effect indefinitely or until rescinded. It may be amended by consent of all parties at any time.

PART 2
INSTITUTIONAL RESPONSIBILITIES

All institutions are responsible for ensuring that their personnel (i.e., the Institutional Official, the IRB, IRB office staff, investigators and research staff, and any other personnel supporting research covered under this Agreement) act in accordance with all applicable federal, state and local laws and regulations (e.g., Title 32 Code of Federal Regulations Part 219 (32 CFR 219); Title 10 United States Code Section 980 (10 USC 980); DoD Directives and Instructions (e.g., DoDI 3216.02);; DoD Component policies; and the Food and Drug Administration regulations and guidance (e.g., 21 CFR Parts 50, 56, 312, and 812) where applicable in addition to the terms and conditions of the organizations' DoD Assurance and/or their DHHS FWA.

Specific DoD Component requirements are stated in Part 3 of this document.

All institutions will permit, upon request, the inspection of any facilities used in support of the activities described in the "Scope" and other research areas by federal agencies responsible for oversight of human research protection and proper management of the research within the scope of this agreement.

A. The Institutional Official of the Engaged Institution Relying on the IRB will:

1. Ensure that all institutional personnel involved in the research (covered within the scope of this agreement) have completed education and training requirements.

2. Verify that scientific review of the research protocol has been conducted and that the IRB considered the feedback from the scientific review.

3. Verify that the IRB has reviewed the research protocol in accordance with DoD requirements, including those identified in the research contract or agreement.

4. Ensure institutional personnel comply with requirements and oversight established by the

IRB.

5. Ensure institutional personnel follow the approved research protocol.

6. Ensure institutional personnel report to the IRB and DoD: (a) unanticipated problems involving risks to subjects or others; (b) serious or continuing non-compliance; (c) suspension or termination of IRB approval; and (d) any other events or circumstances requiring notification.

7. Ensure institutional personnel maintain current copies of the IRB approved research protocol (initial review, continuing review, amendments, adverse event reports, and final report), all communications with the IRB, this Agreement, and other relevant information in accordance with DoD record keeping requirements.

8. Verify the IRB has the expertise and policies and procedures needed to review and oversee the research submitted by the institution (in accordance with 32 CFR 219.107, §.103(b)(3) and §.115).

B. The Institution Supplying the Reviewing IRB will:

1. Verify that personnel involved in the research have completed required education and training for the protection of human research subjects.

2. Verify that the IRB is properly constituted for reviewing the research.

3. Fulfill the IRB responsibilities identified in the engaged institution's assurance.

4. Provide the Institutional Official of the engaged institution with information about the IRB, such as a list of IRB members or expertise and the written procedures for executing IRB responsibilities in accordance with paragraph A.8 above.

5. Provide to the engaged institution conducting the research and the Principal Investigator(s) a copy of the IRB review and determinations concerning the research (e.g., IRB minutes or other appropriate documents).

6. Maintain current copies of the IRB approved research protocol (initial review, continuing reviews, amendments, adverse events reports, and final report), all communications with the institution, this Agreement, and other relevant information in accordance with DoD Component record-keeping requirements.

C. Amendments and Termination

1. This Agreement may be modified, cancelled, or renegotiated upon mutual consent, at any time through an amendment signed by authorized representatives of the organizations. A decision to amend or terminate will be submitted to the DoD Component Designated Oversight Official.
2. The DoD Component Designated Official is not obligated to approve this Agreement.

PART 3
DOD COMPONENT REQUIREMENTS

A. This institution will comply with the requirements of the DoD Component issuing this Agreement. These requirements are identified in Part 3, paragraph B. DoD Components may require that other research, not specifically identified by 32 CFR 219, also comply with the terms of this Agreement (32 CFR 219.101(d)).

B. When this institution conducts research supported by or in collaboration with an organization of another DoD Component, this institution must comply with the policies and procedures of that organization. The requirements of selected DoD Components are identified in the references below:

Department of the Army
- AR 70-25 Use of Volunteers as Subjects of Research, 25 January 1990
- AR 40-38, Clinical Investigation Program, 1 September 1989
- AR 40-7, Use of Investigational Drugs in Humans and the Use of Schedule I Controlled Drug Substances, 19 October 2009

Department of the Navy
- SECNAVINST 3900.39E CH-1, 29 May 2018

Department of the Air Force
- AFI 40-402, Protection of Human Subjects in Research, 10 September 2014

Office of the Secretary of Defense for Personnel and Readiness
- Office of the Under Secretary of Defense (Personnel and Readiness) Research Regulatory Oversight Office Human Research Protection Program Operating Instruction, 29 September 2014

PART 4
INSTITUTIONAL AGREEMENT

A. Engaged Institution Relying on the External IRB

1. Institutional Signatory Official at the Engaged Institution

Acting in an authorized capacity on behalf of this institution and with an understanding of the institution's responsibilities under its assurance, I assure protections for human subjects as specifie above.

Signature: [redacted] Date: 8/5/24

Name: [redacted]
Rank/Grade: CAPT, MC, USN
Institutional Title: Directo[redacted]
Telephone Number: 757-[redacted]
FAX Number: [redacted]
Mailing Address: [redacted]
Email Address: [redacted]

2. Point of Contact for Human Research Protection at the Engaged Institution

Signature: [redacted] Date: 05 Feb 2024

Name: [redacted]
Rank/Grade: GS/CIV
Institutional Title: Huma[redacted] Protections Director
Telephone Number: 757-[redacted]
FAX Number: [redacted]
Mailing Address: Clinical Investigation Department[redacted]0
[redacted]
Email Address: [redacted]

B. Institution with the Reviewing IRB

1. Institutional Official of Institution with the Reviewing IRB

I am aware that my IRB is entering into this agreement.

Signature: [redacted] Date: 2/2/2024

Name: [redacted]
Institutional Title: Associate Dean of Operations, The Graduate School
Telephone Number: [redacted]
Mailing Address: Liberty University, [redacted]
Email Address: [redacted]

2. Point of Contact for Human Research Protection at the Institution with the Reviewing IRB

Signature: [redacted] Date: 2/2/2024

Name: [redacted]
Institutional Title: Administrative Chair of Institutional Research, IRB Chair
Telephone Number: [redacted]
Mailing Address: Liberty University, [redacted]
Email Address: [redacted]

3. Reviewing IRB Chair Agreement

Acting in an authorized capacity on behalf of the IRB and with an understanding of the institution's responsibilities under this assurance, I assure protections for human subjects as specified above.

Signature: [redacted] Date: 2/2/2024

Name: [redacted]
Institutional Title: Administrative Chair of Institutional Research, IRB Chair
Telephone Number: [redacted]
Mailing Address: Liberty University, [redacted]
Email Address: [redacted]

Appendix F

CITI Certification

CITI PROGRAM

Completion Date 31-Jan-2024
Expiration Date 31-Jan-2027
Record ID 60941885

This is to certify that:

Tegan Quigley

Not valid for renewal of certification through CME.

Has completed the following CITI Program course:

Responsible Conduct of Research (RCR)
(Curriculum Group)
Responsible Conduct of Research (RCR)
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
Collaborative Institutional Training Initiative
101 NE 3rd Avenue, Suite 320
Fort Lauderdale, FL 33301 US
www.citiprogram.org

Generated on 05-Feb-2024. Verify at www.citiprogram.org/verify/?w34f45b99-7a16-4a2f-a9a6-56437f9c23b8-60941885

Appendix G

DOD Legal Review Form

DEFENSE HEALTH AGENCY
DEFENSE HEALTH NETWORK EAST
650 JOEL DRIVE
FORT CAMPBELL, KY 42223

11 March 2024

MEMORANDUM FOR Deputy Commander of Clinical Services, United States Army Medical Department Activity, Fort Campbell, Kentucky 42223

SUBJECT: Legal Review of Education Partnership Agreement for Doctor of Philosophy in Health Sciences with Liberty University

1. **Background and Purpose.** The purpose of this memorandum is to provide a legal review for the Education Partnership Agreement for Doctor of Philosophy in Health Sciences between Liberty University and Blanchfield Army Community Hospital (BACH) in association with Naval Medical Center Portsmouth (NMCP).

2. **Review.** I have reviewed the Education Partnership Agreement and find no legal objection.

3. **Recommendation.** I recommend signing the Agreement.

4. The point of contact for this memorandum is the undersigned at [redacted] or [redacted]

[redacted]
[redacted]
Associate General Counsel
Defense Health Agency