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Relationship Between Self-Concept and Self-Compassion Scores and Weight-Loss Surgery Outcomes in Women

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Abstract

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by

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MA, Long Island University, 1997

BS, SUNY Old Westbury, 1993

Dissertation Submitted in Partial Fulfillment

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Abstract

Obesity is a global health concern associated with a multitude of psychosocial issues, including emotional dysregulation, depression, low self-esteem, social isolation, and economic issues related to bias. Weight loss surgery is generally considered to be an effective treatment; however, insufficient weight loss and weight regain are not uncommon. Because self-compassion and self-concept are psychological and social constructs that have been shown to influence obesity and health, the purpose of this study was to explore the relationship between weight loss surgery outcomes and these two concepts to obtain a deeper understanding of the mechanisms behind suboptimal weight loss. The theoretical framework for this study was Carl Rogers's personality theory, which emphasizes the influence of social factors on self-concept. This quantitative study employed a correlational design with a survey method. Participants had undergone bariatric surgery within the past 2–10 years and were administered both the Tennessee Self-Concept Scale-2 (TSCS-2) and the Self-Compassion Scale (SCS). A Pearson correlation analysis revealed a significant relationship between self-compassion scores and weight loss outcomes. Multiple regression analysis indicated that common humanity (a SCS score) significantly predicted the incidence of weight regain. Furthermore, TSCS-2 scale scores for academic/work and physical self-concept contributed to the prediction of weight regain when included in the stepwise regression equation. The findings of this study could offer medical and mental health professionals' clarity regarding the mechanisms influencing variation in weight loss outcomes, aiding in the development of preventive and supportive interventions post-weight loss surgery.

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Chapter 1: Introduction to the Study

Obesity has risen to over 40% of the population of the United States as of 2020 (Centers for Disease Control [CDC], 2023), with rates increasing from 30.5% to 41.9% in just the past 20 years. Obesity is a risk factor in a variety of significant psychosocial issues (Aitzetmüller-Klietz et al., 2023; Amundsen et al., 2017; Carraça et al., 2021). Obesity and binge eating disorder have been linked with emotional dysregulation, depression, and low self-esteem (Cella et al., 2019; Fulton et al., 2022). Stigmatization of obesity is also prevalent, impacting many who are obese and often leading to feelings of shame, which can sabotage weight loss efforts (Rand et al., 2017; Wetzel & Himmerstein, 2023).

Weight loss surgery (WLS) is considered by the medical community to be a highly effective and beneficial treatment for severe obesity (Arterburn et al., 2022; Majid et al., 2022; Rudolph & Hilbert, 2020). Currently, there are multiple forms of WLS commonly performed, including gastric bypass, gastric sleeve, and gastric banding. While most surgeries tend to yield initial weight loss, significant weight regain is not uncommon after the first year (Ghaferi & Varban, 2018; Tolvenan et al., 2022). The positive psychosocial impacts associated with weight loss often diminish with time and weight regain (Furtado, 2023).

This study was conducted to examine the relationship between WLS outcomes and two variables: self-concept and self-compassion. Self-concept refers to one's perception of oneself and is formed as a result of the feedback received in the social environment (Roger, 1959). Self-concept and the clarity of one's self-concept motivate

and guide behavior in a direction that is in alignment with one's perception of oneself and one's capabilities (Stets & Burke, 2000; Weber et al., 2023). A rigid self-concept may impede post-WLS transformation by influencing behavior in a manner that makes it challenging to maintain weight loss. But self-compassion has been shown to have a positive impact on eating pathology and the avoidance of weight regain (Breton-Peters, 2021; Mantzios, 2018). Therefore, one's level of self-compassion may be a relevant factor in weight loss and weight loss maintenance post-WLS. Demonstrating a relationship between these concepts may make a valuable contribution to the literature regarding the elements influencing weight loss outcomes post-WLS.

Background of the Study

Obesity has been a growing global concern for decades and continues to increase at high rates (World Health Organization [WHO], 2021). Obesity is generally reached at a body mass index (BMI) of 30 or greater, and more than 650 million individuals worldwide currently meet this criterion. Obesity is linked with multiple physical health risks, disability, and premature death (Safaei et al., 2021). Additionally, there are numerous psychosocial obstacles in obesity, including increased depression and anxiety (Carraca et al., 2021; Chin et al., 2018), as well as social isolation (Rotenberg et al., 2017; Zhou et al., 2024). Furthermore, several researchers have noted an increased risk of suicidal ideation in obese individuals (Park & Lee, 2021; Zhang, 2022). Obese individuals tend to perceive that they experience a lower quality of life than normally sized individuals (Abiri et al., 2022; Whitaker et al., 2018).

To address these negative impacts of obesity, bariatric or WLS has emerged as a

significant solution for managing obesity and facilitating weight loss (Majid et al., 2022; Matter, 2018). According to the American Society for Metabolic and Bariatric Surgery (ASMBS, 2023), WLS surgeries were performed 256,000 times in the United States alone in 2018 and continue to rise. Research suggests that WLS is the most efficient medical intervention for severe obesity (Athanasiadis et al., 2021). However, multiple research studies have shown that patients who undergo WLS often experience significant weight regain or suboptimal (lower than expected) weight loss (Abel et al., 2022; Amundsen et al., 2017).

One's self-concept or level of self-compassion may provide some answer to why individuals have suboptimal weight loss of weight gain after WLS. Self-concept is multi-dimensional, referring to a person's perception of themselves socially, physically, behaviorally, sexually, morally, and as a whole (Marsh & Shavelson, 1985). Self-concept can guide and motivate one's behavior and reactions to other people, places, and situations, aligning them with the way one perceives themselves (Mishra, 2016). Low self-concept has been linked with various psychosocial issues, including greater difficulty forming and maintaining relationships (Becht et al., 2017; Hong & Sohn, 2019; Kusec et al., 2016; Stets & Burke, 2014). It is important to note that self-esteem and self-concept are not interchangeable terms in the context of this study. Self-esteem, which can be fluid, is conceptualized as the value one associates with oneself at a given time or in reference to a particular situation (Rudolph et al., 2020). Self-concept, on the other hand, can be conceptualized as a socially developmental view of one's own attributes ("I am smart" or "I am pretty"), which are typically enduring (Kinch, 1963). Weber et al. (2023)

further asserted that if self-concept is a view of one's attributes, self-esteem can be understood as the feelings and level of acceptance that one has in regard to one's attributes.

Self-compassion is defined as the way a person relates to themselves and is especially relevant in light of challenges, failures, or perceived hindrances (Ness, 2003). According to Neff, the originator of the self-compassion theory, it is the ability to be open to the experience of our own suffering in a non-judgmental manner. Neff noted that self-compassion incorporates three main elements: kindness, a sense of humanity, and mindfulness. Neff asserted that a sense of kindness and sympathy toward oneself, a sense of connectedness to others, and a non-judgmental openness to one's emotional experience are linked to healthy psychological and social functioning (Ness, 2018). Self-compassion is linked to lower incidences of depression (Lopez et al., 2018) and can have a positive impact on a variety of psychosocial areas, including improving quality of life and decreasing the effects of social isolation (Salas, 2019; Schnepper et al., 2020) by decreasing the impact of internalized stigma (Braun et al., 2021; Hilbert et al., 2015). A person's level of self-compassion can impact their understanding of the distress they are in and influence their willingness to relieve themselves of distress (Lopez et al., 2018). The study of both self-compassion and self-concept, both relevant to human behavior and outcome, may provide some insight into variability of WLS outcome.

Statement of the Problem

Expectations are high for patients who receive WLS, and many patients view it as a last resort without fully understanding that success is not guaranteed (Freese et al.,

2017; Tolvenan et al., 2021). Researchers have found that between 20%–30% of individuals who undergo WLS gain a significant amount of weight back within 5–10 years of surgery (Abel et al., 2022; Athanasiadis et al., 2021). Further, suboptimal weight loss is often defined as the failure to lose more than 50% of excess weight or the regaining of at least 15% of post-surgery weight loss (Abel et al., 2022; Athanasiadis et al., 2021).

Weight loss has a positive impact on an individual's overall quality of life (Reynolds et al., 2017) and is also associated with improvements in self-esteem, body image, and interpersonal relationships (Burgmer et al., 2014; Griauzde et al., 2017). But these improvements often decline with time and weight regain (Burgmer et al., 2014; Risstad et al., 2015; Tolvenan et al., 2021), and many who achieve suboptimal weight loss regress psychosocially (Ames, 2022: Groven & Glenn, 2016). This can deepen social isolation, feelings of shame, depression, and low self-esteem (Geraci et al., 2015; Griauzde, 2018; Groven & Glenn, 2016) and overall quality of life (Berino et al., 2022).

The predominance of literature regarding WLS focuses on positive outcomes (Groven & Glenn, 2016). This may result from the lack of coherence around the issue of which standards pertain to weight regain and sub-optimal weight loss (Majid et al., 2022). However, various studies have begun to look at weight regain and its associated declines in both psychosocial and psychological areas (Geraci et al., 2015; Kvalem et al., 2022). Nonetheless, there is still no clear answer to the question of why some WLS patients are unable to obtain or sustain optimal weight loss post-surgery. This issue is important given the level of psychological and psychosocial duress obese individuals sustain and the

regression in these areas with suboptimal outcomes. Self-concept, or the way that an individual perceives themselves in relation to others, and self-compassion, a measure of how one relates to themselves, may be two important psychological mechanisms that influence the effectiveness of WLS and have not been extensively studied.

Purpose of the Study

The purpose of this study was to investigate whether there is a relationship between WLS outcomes and self-concept and self-compassion scores. Identifying a correlational relationship can bolster existing literature regarding the mechanisms that influence weight loss outcomes. Studies focusing on suboptimal weight loss and weight regain post-WLS have rarely explored self-concept or self-compassion. This knowledge could inform WLS participants in achieving or maintaining optimal weight loss and may enable health services personnel to better support these participants in their journey. Self-concept and self-compassion, both psychological and social constructs, have been shown to influence obesity and health-related areas. Exploring the possible relationship between WLS outcomes and these constructs could supplement and provide insight into any relationship between WLS outcomes and psychosocial issues. This study thus enhances understanding of the interacting elements involved in weight loss outcomes and resulting psychosocial issues.

Research Questions/Hypotheses

RQ 1: What is the relationship between Tennessee Self-Concept Scale-2 (TSCS-2) scores (including summary, supplementary and subscale scores) and Self Compassion Scale (SCS; and subscale) scores and overall percentage of weight loss post WLS in

women?

$H_1$1: There is a significant relationship between TSCS-2 scores and SCS scores and weight loss percentage.

$H_0$1: There is no significant relationship between TSCS-2 scores and SCS scores and weight loss percentage.

RQ 2: Do TSCS-2 scores (including summary, supplementary and subscale) and SCS (and subscale) scores predict weight regain post-WLS in women?

$H_1$2: TSCS-2 scores and SCS scores do predict weight regain post WLS.

$H_0$2: TSCS-2 scores and SCS scores do not predict weight regain post WLS.

Theoretical Framework

This study was underpinned by Carl Rogers's personality theory. Rogers's personality theory was the first to be rooted in a person-centered perspective and emphasizes the actualizing tendency (Ismail & Tekke, 2015). This actualizing tendency refers to a person's innate inclination toward becoming their ideal self. Rogers theorized that humans have an innate, actualizing tendency to grow, develop, and gain autonomy. This motivates humans to pursue living their ideal lives, along with complete openness to experience living in the moment and fully accepting oneself (Rogers, 1961).

Self-concept and self-compassion are relevant to Rogers's theory. The person who has actualized self-concept experiences a true expression of themselves, their character, and an increased overall well-being (Proctor, 2016). Rogers theorized that a positive self-concept, self-acceptance, and openness to experience, which are all facets of self-compassion, positively impact psychosocial factors (Rogers, 1959).

The self develops through interactions with others and is based on social self-evaluation (Rogers, 1959). The self-actualizing tendency is a person's drive to experience themselves in the way they would like to be perceived by others. According to Rogers, all people have a need for positive regard from others and for a sense of positive self-regard. When positive regard from others is value-based or rooted in certain standards or expectations, these standards become integrated into the self. The self-concept reflects the degree to which a person feels they meet preconceived standards. According to Rogers (1959), the self-concept has three components: self-image, which is a person's view of themselves; self-worth, which is the value a person places on themselves; and the ideal self, which is a person's aspirational self, or the version of themselves that they ideally hope to become. Self-image does not necessarily reflect reality and is based on expectations. Self-worth is linked with self-esteem, or the degree to which people value themselves in comparison to others (Rogers, 1959).

Incongruence is the suffering that results from the gap between a person's desired or ideal self and their current self-concept (Proctor, 2016). When there is incongruence, the actualizing tendency is usurped by the self-actualizing tendency. Individuals experiencing incongruence struggle with integrating themselves, which can be improved through therapy (North, 2015). This struggle is often manifested in maladaptive behaviors, a reliance on external validation, and decreased autonomy (Rogers, 1959). Rogers (1977) asserted that socialization, particularly in Western cultures, often encourages and rewards this process.

Nature of the Study

This quantitative, descriptive research followed a correlational design. A correlational study was appropriate in this case as there was no manipulation of variables (Schwartz et al., 2019). A causal relationship cannot be found in this case, but a correlation between the variables and analysis of the possible relationships between variables provides essential information. Two online survey tools were platforms for individuals to access the study. These online survey tools were also used to enlist participants. In addition, social media and bariatric surgery forums were platforms for engaging participants. Walden University was intended to serve as a resource as well, but the participant pool was not accessed for this study.

To participate in this study, participants were aged 18 or older, and at least 2 years must have passed since their WLS. Participants were required to provide information regarding their weight loss journey, including their initial weight, nadir weight (lowest weight), and current weight. Additionally, participants were asked to complete both the TSCS-2 and the SCS via an online survey tool. The TSCS-2 assesses one's self-concept across multiple domains, including physical, moral, personal, familial, social, and academic/vocational (Western Psychological Services, 2000). The TSCS-2 consists of 82 self-report statements rated on a 5-point Likert scale, ranging from 1 (*almost never*) to 5 (*almost always*). The SCS is a validated instrument that measures a person's level of self-compassion (Ness, 2003). It encompasses six subscales designed to target specific elements of self-compassion: self-kindness, self-judgment, common humanity, isolation, mindfulness, and over-identification. The scale includes 26 self-report statements rated

on a Likert scale ranging from 1 (*almost never*) to 5 (*almost always*).

This study involved two separate analyses to address the research questions. The first analysis explored the relationship between the two independent variables (IVs): SCS scores and TSCS-2 scores, with the dependent variable (DV): percentage of weight loss. The percentage of total weight loss was calculated by subtracting the participant's current weight in pounds from their starting weight and dividing that number by the starting weight. The second analysis had two IVs, SCS score and TSCS-2 scores, and one DV: percentage of weight regain. This calculation involves subtracting the lowest weight in pounds (the nadir) from the highest weight to determine the initial weight loss. Then, this number was subtracted from their current weight to find the weight regained. The result was then divided by the total weight loss in pounds to obtain a percentage of weight regained. Data on these variables was gleaned through use of the online survey tool. Participants were able to complete each scale, and their scores, along with weight-related and demographic data, were recorded.

Linear regression analysis was used to identify any relationship between the IVs and DV in both analyses. This research design demonstrated the existence and strength of any relationship between scale scores and weight loss outcomes. Additionally, it illustrated the direction of the relationship. A positive relationship between variables indicates that they move in the same direction (e.g., as scale scores increase, weight loss outcomes increase), while a negative relationship shows that the variables move in opposite directions (e.g., as scale scores increase, weight loss outcomes decrease). Data were analyzed using SPSS software.

Definition of Terms

The current study employed terms associated with the overall topic that may be unfamiliar to the audience. To provide a clear understanding of the topic and the information presented in the current study, the following key terms are defined:

Bariatric weight-loss surgery: Bariatric weight-loss surgery was defined as a variety of surgical procedures performed to induce rapid weight loss, including gastric bypass, sleeve gastrectomy, and gastric banding (ASMBS, 2023).

Internalized stigma (due to weight): The devaluation of oneself, the degradation of self-concept resulting from experienced weight bias (Palmeira et al., 2017; Wetzel & Himmelstein, 2023).

Psychosocial factors: Psychosocial factors encompass mental health as well as social and relational conditions that impact functioning (Griauzde et al., 2018).

Quality of life assessment: A general measure of one's holistic well-being, which can pertain to one's physical or psychological well-being, as well as perception of one's life circumstances (Aitzetmüller-Klietz et al., 2023).

Self-compassion: Self-compassion has three core components: self-kindness, mindfulness, and common humanity. It is defined as the way a person relates to themselves, especially in light of challenges, failures, or perceived hindrances (Ness, 2003).

Self-concept: Self-concept can be conceptualized as a socially developmental view of one's own attributes ("I am smart" or "I am pretty"), which are typically enduring (Kinch, 1963). It plays a role in influencing behaviors and interactions with

others (McLeod, 2023).

Weight bias/stigma: A chronic and pervasive set of negative attitudes held against obese individuals, meant to devalue them (Walsh et al., 2018; Wetzel & Himmelstein, 2023).

Assumptions

It was assumed that survey participants in this study answered the questions on the scales truthfully, with no intention to misguide the outcome of the research. It was also assumed that the scales used in this study were valid and provided accurate information regarding this population, and that the same psychological mechanisms would be at play, regardless of the surgical venue. Additionally, it was assumed that the participants of this study adequately represented the general population.

Delimitations

Participants for this study were adults, i.e., 18 years of age and older. WLS is largely performed on adults in this country, and data gleaned from children may skew outcomes and decrease reliability. Further study focusing on children specifically would be preferable. Data from children were also not collected to avoid the necessity of managing or ruling out ethical issues (consent, protected population). The sample was delimited to only those WLS patients who answer an online survey. This choice was made due to time constraints. The study was performed with participants who have completed surgery at least 2 years prior. The period prior to this (time of surgery to 2 years) is identified in the literature as the time in which the majority of weight is lost. The period of 2 years and beyond is most relevant to the research for this reason.

Limitations

The study was limited to the analysis of self-concept and SCS scores post-WLS. Time constraints did not allow for both pre- and post-WLS analysis of self-concept and self-compassion scores. Pre- and post-test scores may have provided a more comprehensive understanding of the impact of these variables on WLS outcomes and possibly enabled findings on a causal relationship. In addition, the data collected solely consisted of scale scores, with no interviews performed. Participant interviews may have provided a more in-depth understanding of the experiences of participants regarding self-concept and self-compassion.

Significance of the Study

According to the WHO (2021), obesity is a preventable yet rapidly growing global issue that can result in serious health complications, including death. WLS has become a common tool to address obesity, but it often results in suboptimal weight loss. Previous research has provided considerable information regarding the variables, especially physical (side effects of surgery, exercise) and behavioral (lifestyle changes, eating pathology), impacting WLS outcomes (Athanasiadis et al., 2021). Despite extensive research and data on how to succeed, WLS participants still often achieve suboptimal weight loss (Majid et al., 2022; Ward & Ogden, 2019). The knowledge of how to prevent suboptimal weight loss would benefit WLS participants and the healthcare community that supports them in avoiding this.

The search regarding why there is often extensive weight regain and variability in weight loss outcomes has by no means been exhausted. This phenomenon persists, as

does its impact on WLS surgery participants. There have not been any studies to date that specifically address self-concept in relation to suboptimal WLS outcomes, although related issues such as self-esteem, self-efficacy, and body image have been the subject of some study. Research on self-compassion has not specifically focused on its impact on suboptimal WLS outcomes. For example, Kearney (2014) studied self-compassion's relationship with overall weight loss outcomes rather than specifically focusing on suboptimal weight loss. Some relationship, though not statistically significant, was found between BMI change and self-compassion. Therefore, the present study aimed to build on previous research and make an original contribution to the field of psychology, as well as other health services fields involved in the care of WLS participants. Consequently, the findings of this study will contribute to social change. New knowledge gleaned will be valuable for informing medical and behavioral healthcare providers, enabling them to enhance and improve care for WLS participants.

Practical applications for this research also exist. Currently, there is no standardized pre- or post-surgery mental health intervention in the United States, although greater support typically leads to better outcomes (Furtado et al., 2023; Liebl et al., 2016). The knowledge gained from this study can inform both pre- and post-interventions aimed at improving outcomes and psychosocial status. Pre-screening assessments can be enhanced with data from this research study. Furthermore, the information gathered from this study will empower and enlighten participants to consider WLS surgery outcomes more realistically.

Summary

The pervasiveness of obesity and its psychosocial impact on the lives of the obese have been well documented in the literature. WLS has become a popular and often effective tool in the fight against obesity, but it is not always successful. Studies show that many people who undergo WLS either regain weight or never achieve optimal weight loss. Researchers have typically found that eating pathology (such as emotional eating and binge eating) and a lack of lifestyle changes (including an inability or refusal to exercise) result in suboptimal weight loss outcomes.

The question of why some people are able to overcome these obstacles and achieve and maintain weight loss while others are not is central to this study. This study broadens existing knowledge regarding the psychological elements that may influence weight loss outcomes. Self-compassion has been shown to have a positive relationship with health behaviors and body image. Self-concept, or the way a person perceives themselves, can influence behavior in a direction that aligns with our perceived notion of ourselves. This study explored the relationship between self-compassion and self-concept with suboptimal weight loss in order to understand any impact these concepts have on this issue. Understanding how these concepts impact weight loss outcomes will enable healthcare providers to improve support and interventions to avoid suboptimal outcomes.

The theoretical framework was Carl Rogers's self-theory. Rogers theorized that the idea of the self is created by interactions with others. He noted that these social interactions provide individuals with reinforcers and consequences based on whether they align with expectations or not. According to Rogers, the inability to meet social

expectations can cause a great deal of psychological distress. The self-concept informs not only how one sees themselves but also how one behaves as a result. This is potentially relevant to weight loss outcomes, as it may inhibit one's ability to make the lifestyle changes necessary to achieve and maintain weight loss. This negative socialized view of the self is antithetical to self-compassion, which has been linked with positive health behaviors and requires that a person sees themselves with kindness and as part of the larger community.

Chapter 2 provides an overview of the theoretical framework, which is Carl Rogers's self-theory. A review of the existing literature follows, including a synopsis of the psychosocial aspects of obesity and weight regain, WLS, self-compassion, and self-concept. Chapter 3 provides an overview of the research methodology, its design, and procedures for data collection and analysis. Chapter 4 includes an overview of the study itself including research questions, sampling, data collection, and results. Chapter 5, the final chapter, offers a discussion of the statistical analysis and interpretation of the data, conclusions drawn from the study, its impact on the field of study, and recommendations for future research.

Chapter 2: Literature Review

The purpose of this quantitative study was to identify and understand the nature of the relationship between one's self-concept and degree of self-compassion with the regain of weight or suboptimal weight loss post-weight loss surgery. Individuals typically opt for WLS due to the impact of obesity on their physical and emotional well-being but often experience significant weight regain within 2–5 years of surgery. This phenomenon can have psychosocial impacts, which are frequently overlooked in the general narrative surrounding the surgery. An important purpose of the study was to contribute to the existing literature addressing the factors that contribute to weight regain. Specifically, the study explored the relationship between suboptimal weight loss and two constructs: self-concept and self-compassion. The significance of this study lies in the possibility that the knowledge gleaned from it can eventually inform interventions aimed at relieving or preventing weight regain and its devastating impacts on participants.

This chapter includes an analysis of the existing literature regarding obesity, WLS, the psychosocial impacts of obesity, and weight regain, as well as the constructs of self-concept and self-compassion. The framework of this study, guided by Rogers's self-theory, will also be discussed. Rogers's theory indicates the importance of social acceptance and feedback in forming the self-concept, as well as the harmful effect of a negative self-concept. In this chapter, I will elucidate the ways in which Rogers's theory is relevant to this study and offer possible insights into factors influencing weight regain.

This chapter will also include a discussion of why the research is justified and provides a necessary contribution to existing literature. The aim of this study was to

contribute to the growing knowledge of the elements and influences of weight regain and to shed light on the deleterious effects of weight regain. The insights gleaned from this study may contribute to positive social change by assisting medical providers in properly selecting and supporting weight loss surgery participants, as well as aiding mental health professionals in intervention and support to help people manage the emotional issues that may lead to weight regain in some participants.

Literature Search Strategy

In this study, I focused on the concepts of weight loss or bariatric surgery, weight regain, self-compassion, self-concept, and Rogers's self-theory. An exhaustive literature search was conducted through the Walden Library System. The Human Services, Psychology, Sociology, Nursing, Counseling, and Health Sciences sections of the library were utilized in the search. The following databases were searched through the Walden University Library: PsycINFO, SAGE Journals, SocINDEX with full text, MEDLINE, ProQuest, PubMed, and EBSCO. Additionally, Google Scholar was utilized within the literature search. The following key words and phrases were utilized in order to complete the literature search: *weight loss surgery or bariatric surgery, weight loss surgery or bariatric surgery and weight regain, weight loss surgery or bariatric surgery and psychosocial, weight loss surgery or bariatric surgery physical health, weight loss surgery or bariatric surgery and mental health, obesity and mental health, obesity and psychosocial, obesity and stigma, obesity and relationships, obesity and self-compassion, obesity and self-concept, obesity and weight regain, weight loss surgery and weight regain, weight loss surgery or bariatric surgery and depression or anxiety, weight loss*

surgery or bariatric surgery and self-compassion, weight loss surgery or bariatric surgery and self-concept, weight loss surgery or bariatric surgery and quality of life, weight loss surgery or bariatric surgery stigma, weight loss surgery or bariatric surgery and relationships, and *Carl Rogers theory.*

Theoretical Framework

The theoretical framework of this study was Rogers's theory of the self (Rogers, 1959). Within this theory, Rogers described how the self and its various concepts are created, and he posited that all humans have a tendency toward self-actualization. According to Rogers, the healthiest self-concept is not based on what individuals should be like but on who they really are, with an acceptance of individual differences among people.

Major Hypotheses and Assumptions of the Theory

Rogers's (1959) self-theory incorporates different aspects of the self, including the self-image (the way one views themselves), self-esteem (self-worth—the way one evaluates oneself when compared to others), and the ideal self—the way one would like to be (McLeod, 2023). All of these aspects of self are interwoven into the self-concept and are derived from interactions with others. Rogers proposed that all humans have a self-actualizing tendency, aiming to be their best or truest selves and to live up to their fullest potential. He explained that various mechanisms within human nature manifest this drive toward self-actualization, including motivations, drives, the pursuit of pleasure, and creativity. Rogers asserted that this actualizing tendency can become distorted by outside forces, leading to maladjustment. Psychic tension builds when individuals move

in a direction contrary to their truest selves.

Rogers (1959) asserted that the development of the concept of self—one's awareness of one's being and functioning—evolves through interactions with one's mother followed by other social figures. The primary need to be one's truest self and perceive oneself in that truest form can be usurped by the need to receive positive regard from others. He asserted that significant others often project conditions of worth and, in order to receive that positive regard from the others in their lives, one begins to adapt in order to meet those conditions. Examples would be punishment for creativity or negative commentary on looks or personality from parents or peer groups. The secondary need to receive positive feedback from others begins to supersede the need to be the true self and see one's truest self. Therefore, one's concept of their true self and the acceptance of it are often derailed by external forces (Friedman & Schustack, 2009). The concept of the self often becomes based on how one compares to the standards of others and impacts the experiences that an individual values (McLeod, 2023; Proctor, 2016). When individuals behave in ways that are not popular or acceptable to others, they are punished, blamed, or criticized, thus shaping the impression of who they need to be with consequences if they are not who others think they need to be. Rogers (1977) noted that Western culture, in particular, reinforces and encourages behaviors that are contrary to the ideal self and perverts the actualizing tendency.

Rationale for the Choice of the Theory

Rogers (1959) pointed out that young children and babies are genuine and congruent with their ideal selves. However, as socialization progresses, there is a gradual

alienation from the true self as the need for positive regard from others intensifies. This incongruence can lead to maladaptive behaviors and psychic tension. Obese individuals frequently face intense bias, judgment, and criticism from others (Brownstone et al., 2023; Kaplan et al., 2023; Kim et al., 2019). Internalized stigma associated with obesity and weight regain correlates with depression, anxiety, and social isolation (Hilbert, 2014 ;Wetzel & Himmelstein, 2023). Following Rogers's theory, this intense external pressure and external judgment can foster a negative self-concept, leading to psychic conflict. Rogers (1961) noted that resolving this conflict involves disregarding outer conditions of worth imposed on the self, thus making self-acceptance a prerequisite for change and growth toward self-actualization.

Additionally, according to Rogers (1959), the self-actualized person is one who is mentally healthy, has positive self-regard, is congruent, lives in the moment, perceives the locus of evaluations as coming from within, and has a deeper acceptance of others. This aligns with the tenets of self-compassion, which hold that mental health follows acceptance and valuing of oneself. The concept of self-compassion extends to accepting others and being aware of their sense of community or shared experiences (Neff, 2011). Neff noted that mindfulness is also an important tenet of self-compassion, requiring individuals to experience emotions as they arise here and now. Rogers emphasized that the experiencing person is a manifestation of the actualized self, allowing all experiences into awareness, not just those influenced by others.

Literature Review

Obesity

Obesity continues to escalate worldwide, more than doubling within the past 40 years (WHO, 2021). According to the WHO (2021), there are more than 1.9 billion adults worldwide who are overweight or obese. The CDC (2022) also found that over 42% of the U.S. population is considered obese, with 9% classified as severely obese. Obesity is measured by a standard of measurement called BMI. Standardized levels of obesity range from obese (BMI between 30–35), severely obese (BMI between 35–40), to morbidly obese (BMI of 40 and above) in adults. The consequences of being overweight tend to increase with each level of obesity.

The CDC (2022) also reported that there is some degree of variation in the predominance of being overweight and obese throughout certain groups in the United States. Additionally, the highest obesity rates are found in individuals between the ages of 40 and 59 years old. Women are more commonly diagnosed with obesity and generally seek intervention at a greater rate than obese males (Cooper et al., 2021).

It is evident that obesity is a growing health concern, and understanding its causes and impacts has been the subject of many studies. Causes for obesity are numerous and include food sources, genetics, lifestyle habits, metabolic issues, and types of nutrition ingested, to name a few (Lin & Li, 2021). In terms of impact, many significant health risks of obesity include an increased risk of death due to cancer, cardiovascular disease, diabetes, and liver disease. The consequences of obesity on an individual's life and health are often severe and pervasive (Safaei et al., 2021).

Obesity and Quality of Life

Studies on the quality of life in obese individuals have been extensively conducted, with the general consensus indicating that obesity reduces one's perception of quality of life (Abiri et al., 2022; Halasi et al., 2018). Researchers have asserted that even a 10%–20% reduction in weight can lead to a substantial improvement in quality of life due to a decrease in comorbidities and an increase in positive body image (Aitzetmüller-Klietz et al., 2023; Brennan-Olsen et al., 2017). Increased physical pain and comorbidities may decrease productivity, and obese individuals have a higher rate of work absences (CDC, 2022). Obesity sometimes caused increased musculoskeletal pain and lack of mobility, which pervasively negatively impacts the quality of life (Narouze & Souzdalnitski, 2015). Obese women experienced pain levels 10 times higher than women with normal weight (Pazzianotto-Forti et al., 2018). Conversely, quality of life is correlated with both physical activity (Fang et al., 2019) and job satisfaction (Gupta et al., 2022).

There is also a consistent correlation between obesity and lower socioeconomic status (Anekwe et al., 2020). This correlation is further compounded by variables such as race, LGBTQ status, and sex. Health issues associated with obesity also significantly affect employment (Campbell et al., 2022). Obesity often exposes individuals to a higher risk of discrimination, which can affect both their employment and social spheres (Ambek et al., 2018). Additionally, self-stigma, characterized by feelings of shame and self-loathing, may be a major contributing factor to the overall decline in quality of life for many obese individuals (Farhangi et al., 2017; Himmelstein et al., 2022).

Obesity and Mental Health

Obesity places an individual at risk for multiple mental health issues and an overall decreased health-related quality of life (Abiri et al., 2022). Moreover, the relationship between obesity and quality of life issues can be bidirectional (Jaremka & Pacanowski, 2019). Mental health issues, for example, can influence lifestyle choices, which in turn can contribute to obesity.

Obesity and depression often co-occur. A study on obesity and depression in twins with differing BMI scores found that twins with a higher BMI had a higher occurrence of both depression and lowered general physical well-being (Kupila et al., 2023). A meta-analysis also showed a bidirectional relationship, indicating that those who were depressed were at a 70% greater risk for obesity, and obese individuals had a 40% higher risk of becoming depressed (Mannan et al., 2016). Several researchers have also noted a bidirectional relationship between depression and obesity, with obesity leading to depression in some cases and depression leading to obesity in others (Glaus et al., 2019; Panda et al., 2023). Additionally, many researchers have highlighted the link between obesity and various mental health disorders, such as depression, anxiety, and other mood disorders (Fulton et al., 2021; Łojko et al., 2015). Researchers have also found that the presence of atypical symptoms of depression or bipolar disorder, including hypersomnia, increased appetite, and heightened sensitivity to social rejection, may trigger an increase in obesity. Emotional eating, prevalent among obese individuals, may result from external stressors or poor mental health and can lead to weight gain (Benzarouk et al., 2021; Özsahin & Altintas, 2018). Furthermore, obesity actually alters

brain structure and function, contributing to psychiatric illnesses such as anxiety and depression (Chen et al., 2019; Fourrier et al., 2019).

Social anxiety and physical social anxiety also tend to be higher as BMI increases (Auster-Gussman et al., 2021; Mirijello et al., 2015; Tichener & Wong, 2014). Social anxiety increases avoidance of social interaction for fear of judgment from others and physical social anxiety (fear of being judged on a physical basis). In fact, there is a correlation between increased BMI and reduced motivation to exercise, which can reinforce the pathway to obesity (Auster-Gussman et al., 2021). Many researchers have noted that appearance-based social anxiety is especially prevalent in females (Dalrymple et al., 2017), though it is prevalent throughout the population of individuals with obesity and binge eating disorder (Ostrovsky et al., 2013). Females may be especially impacted by internalized stigma. The relationship between BMI and social anxiety is mitigated by internalized bias or self-stigma (Kaplan et al., 2023). It is typical for severely obese individuals to have faced bullying, which plays a role in the development of social anxiety throughout the lifespan (Kaplan et al., 2023; Özsahin & Altintas, 2018). In addition, brain chemistry changes resulting from early life stress may lead to excess fat storage (obesity; Özsahin & Altintas, 2018). In this sense, a cycle emerges: obesity leads to stigmatization and trauma, which, in turn, leads to higher levels of obesity. Moreover, self-esteem and social difficulties appear to have a bidirectional relationship, wherein being bullied or experiencing weight discrimination can lead to a decrease in self-esteem, and low self-esteem can place one at risk for bullying or social discrimination (Álvarez-García et al., 2019).

The literature has also discussed the link between suicidality and obesity. Being at a smaller weight may serve as a protective factor against suicidality in some individuals (Park & Lee, 2022). But obese individuals have an elevated risk of suicidal behaviors, such as feelings of wanting to be dead, thoughts of self-harm, and attempts, when compared to the general population, but not in completed acts of suicide (Amiri & Behnezhad, 2018). As BMI rises, so does the risk of suicidal behavior (suicidal thoughts and attempts) in both men and women, at a much higher rate than in the general population (Wagner et al., 2013). As many as 10% of severely obese individuals had at least one suicide attempt and attributed this to weight-related stigma (Chen et al., 2012). The level of suicidality in obese persons may be mitigated by the degree to which they identify with or perceive themselves to be obese (self-concept), which has been found to be consistent throughout the population, independent of gender and age (Haynes et al., 2019).

Obesity and Stigma

The stigmatization of obesity and obese people has been extensively studied. Fulton et al. (2023) have reflected that weight bias and discrimination remain rampant, even as obesity itself has become commonplace. They point out that this bias is ever-present, impacting most areas of life. Negative stereotypes are prevalent in Western society, often portraying obese individuals as lazy, lacking in willpower, and determination (Kim et al., 2019). Weight bias and discrimination exist, in part, as a result of misconceptions about why people are obese (Westbury et al.,2023). A variety of external sources, including the media and social media reinforce the idea that obesity is

the result of a lack or failure. These stereotypes, based on misconceptions, allow weight bias to be justified. Stigma against obese individuals is often fueled by the assumption that the obese individual has control over the condition (Almoayad et al., 2023). Ringel and Ditto (2019) regarded this as a multigenerational issue, theorizing that individuals in Western civilizations perceive obesity as a violation of the traditional Protestant work ethic. In their perspective, obesity is considered an outcome of weakness or laziness within this work ethic, which places a high value on discipline and hard work. The authors reflected that this attitude enables people to feel morally superior and opens the door for justified discrimination. They proposed that this is one of the reasons why anti-fat bias is so prevalent and why efforts to mitigate this bias are largely ineffective.

The attitude of disgust toward obesity runs deep and robust, as evidenced in the literature (Wabnegger & Schienle, 2022). Indeed, disgust often mitigates the relationship between obesity and stigma (Beames et al., 2016). They observed that the presence of this negative perception was often influenced by whether an obese individual was perceived to be working hard to change their circumstances. In their study, participants exhibited varying levels of anti-fat bias depending on whether a person was shown to have onset control (e.g., medical issues beyond their control leading to obesity) or offset control (the extent of effort invested in weight loss). There is a widespread assumption obesity is in one's control, and this has influence on bias (Westbury et al., 2023). There is a mechanism of human nature that seems to naturally lead humans to avoid or scorn diseased individuals (examples include AIDS and leprosy, etc.). Anti-obesity bias may be associated with this.

Similarly, when Jeon et al. (2019) explored this theory, they noted that humans are equipped with a "disease avoidance" mechanism that makes them automatically avoid interaction with diseased individuals. This is a natural, biological survival mechanism with which we are equipped as humans. These authors noted that, in the case of obese individuals, their bodies differ from the norm and may even exhibit signs of disease such as heavy breathing, sweating, limbs, etc.) and may innately be perceived as diseased by others. They asserted that this biological mechanism is so strong that it can override rational evidence indicating a person is not diseased, potentially leading others to perceive them as inherently diseased. This perception, in turn, can contribute to the dehumanization of obese individuals, fostering discrimination. Kim et al. (2019) echoed this sentiment, highlighting that stereotypes inherently foster an "us versus them" mentality, further marginalizing obese individuals within society. Such marginalization can have far-reaching consequences.

As many as 40% of obese individuals experience weight-related stigma or bias in the workplace (Puhl et al., 2020). Stereotypes such as being weak-willed, lazy, or morally flawed have a negative impact on employment, job satisfaction, and achievement (Fulton et al.,2023; Olesan et al.,2020). Anti-obesity bias can also serve as an obstacle to receiving proper healthcare. Yildz (2016) and Peterson and Roskos (2023) have elucidated that obesity bias among healthcare professionals is prevalent, which may lead obese individuals to experience shame, lack confidence to follow through on interventions, and even cancel appointments altogether. They found that these avoidance behaviors on the part of obese individuals could be directly linked to a sense of not being

attended to by medical professionals. For instance, equipment, seating, gowns, and environments are often not accommodating to individuals of larger sizes.

Humans are bombarded with media images of all kinds, from advertising and marketing to social media. Kite et al. (2022) noted the omnipresence of obesity bias in all forms of media and its detrimental impacts. They note that media influences not only what others believe about obesity but also what obese individuals believe about themselves. During the COVID pandemic, anti-obesity rhetoric was strengthened by the fact that individuals who are obese are at a higher risk for COVID complications (Pearl and Schulte, 2021). The media seemed to reinforce the notion of obesity being a lifestyle choice. Previously, Jeon et al. (2019) reviewed several news sources and noted that over half of news articles from major outlets depicted obese individuals in negative ways (eating poorly, lounging on a couch) or as headless, both reinforcing the disease avoidance and dehumanizing mechanisms that feed discrimination.

Social media, though noted by some to be especially influential in fostering weight bias early on (Lin & An, 2018), can be a force for positive change (Clark et al., 2021). In fact, a study conducted by Selensky and Carels (2021) showed that participants changed some of their preconceived notions regarding obesity and improved mood and self-esteem within one week of watching body-positive media. They assert that this provides evidence of the media's power to influence perception in both directions and potentially affect social change.

Obesity and Internalized Stigma

Many researchers have noted the existence and impact of internalized stigma

(Almutairi et al., 2021; Hilbert et al., 2014; Wetzel & Himmelstein, 2023). Individuals who are the subjects of stigmatizing influences often begin to believe and internalize these negative evaluations as their own. In other words, people who are obese and have been the subject of bias and negative stereotyping begin to believe that this is who they are. Internalized weight bias can create a feeling of separateness from society, a sense of being disenfranchised (Kim et al., 2019). In fact, the fear of being disenfranchised from others or marginalized as part of their definition of internalized stigma (Lilis et al., 2020). Internalized stigma can have widespread psychosocial consequences as it leads to feelings of low self-efficacy, low self-esteem, and self-loathing. It is often the mitigating element behind the impact of stigma on psychosocial issues such as depression, anxiety, self-esteem issues, and health behaviors (Almutairi et al., 2021; Hilbert et al., 2014).

Internalized stigma can manifest in a myriad of sabotaging behaviors, including poor eating habits (Wetzel & Himmelstein, 2023). There is a direct correlation between stigma and unhealthy eating behaviors such as binge eating, emotional eating, and eating pathology, as well as a decrease in health-related behaviors such as physical activity, proper nutrition, and health advocacy (Puhl et al., 2020). It is theorized that experiencing weight bias actually inhibits one's control overeating (Araiza and Wellmen, 2017). Indeed, the more a person is exposed to weight bias, the unhealthier food choices they make. In addition, internalized stigma is often one of the causes of avoidance of medical care due to perceived provider bias (Fulton et al., 2023; Heidebrecht et al., 2023). The medical community is making efforts to address this serious issue by increasing awareness among medical professionals. Spooner et al. (2018) noted in their research

that, in addition to fostering unhealthy lifestyle choices, stigma can pose obstacles to self-advocacy with healthcare providers and also affect attendance and maintenance of weight loss programs or interventions. In short, obese individuals commonly avoid doctors and other healthcare professionals, who may otherwise be able to assist them in losing weight, due to perceived bias and feelings of shame.

Weight Loss Surgery

WLS is seen in the medical community as a preferred intervention for severe obesity (Hua et al., 2022). According to the American Society for Metabolic and Bariatric Surgery (ASMBS), it is very effective. They note that patients lose up to 77% of excess weight within a year and, on average, maintain 50% of weight loss up to five years post-surgery (ASMBS). They point out that this surgery is generally safe (about 4% of patients have complications, and less than .1% of surgeries result in death) and generally accessible. Importantly, they report that the majority of individuals who undergo WLS experience a reduction in medical co-morbidities, such as hypertension and diabetes. WLS is generally recommended for individuals with a BMI over 40 or a BMI over 30 to 35 with comorbid health conditions, according to the NDDKI and the National Institute of Diabetes and Digestive and Kidney Diseases (U.S. Dept. of Health and Human Services, 2023). According to the NIDDK, there are five primary types of weight loss surgery:

- Laparoscopic adjustable gastric banding (LAGB) – A band filled with saline is placed at the top of the stomach. This effectively creates a smaller stomach, allowing hunger to be satisfied faster and individuals to consume less food. A port is left

under the individual's skin so that the doctor can easily refill the band with saline as the person's weight plateaus, requiring consistent maintenance.

- Laparoscopic Roux-en-Y gastric bypass (RYGB) – Generally referred to as gastric bypass, this procedure involves two surgical interventions and is the most invasive. It entails creating a smaller stomach by stapling the larger one and sectioning it off, so only the smaller part is utilized. Additionally, the small intestine is cut and bypassed to reduce the absorption and digestion of food. This procedure also has the added benefit of diminishing hunger by reducing the hormones in the gut that signal hunger to the brain.
- Sleeve gastrectomy – During the gastric sleeve surgery, similar to the RYGB procedure, the stomach is stapled. However, in this surgery, the stomach is vertically cut and then stapled, leaving only a narrow sleeve for food processing. It has a comparable impact on gut hormones, potentially reducing hunger levels.
- Open RYGB Biliopancreatic diversion (BPD/DS) with and without duodenal switch – This surgery is highly effective for weight loss, but it is more complicated and causes more challenging side effects, so it is less frequently performed. In essence, it combines elements of the gastric sleeve and the small intestine bypass in the RYGB procedure.
- Intragastric Balloon – This surgery involves the placement of a saline-filled balloon in the stomach to restrict the amount of food a person can eat. Serious side effects are rare but may include the internal deflation of the balloon causing it to move through or block the intestines, which may require additional

surgery.

Success rates of each surgery vary, according to the American Society of Metabolic and Bariatric Surgery (ASMBS), as do the risks of negative side effects and death.

Weight Regain Post WLS

The focus of studies that have examined bariatric or WLS has typically been on weight loss and its effectiveness. However, there is an increasing body of literature reflecting weight regain (Karmali et al., 2013). These authors reviewed 16 contemporary studies at that time. They found that between 10% and 20% of individuals gained a significant amount of weight after 10 years. Research on weight regain has steadily increased. A more recent systematic review of the literature conducted by Athanasiadis et al. (2021) found that a significant number of patients who underwent WLS experienced sub-optimal weight loss (less than 50% of excess weight) or weight regain (> 25% of the original weight loss). Indeed, their review discovered that over 36% of patients met these criteria. Abel et al. (2023) examined the necessity for supplemental weight loss interventions (pharmacological or additional surgery) post-WLS, as weight regain and suboptimal weight loss have become widespread. They observed that typically between 20% and 30% of individuals with suboptimal outcomes would benefit from additional intervention.

There is substantial variation in the reporting of WLS outcomes (Bonouvrie, 2019; Majid et al., 2022). There is a wide variety of outcomes and multiple studies with findings showing that up to 50% of patients return to their base weight after five years

(Jirapinyo et al., 2017). Overall, 20%–30% of weight loss surgery participants never achieve their intended weight loss (Bradley et al., 2016). Around 50% of WLS participants fail to maintain even 20% of their weight loss at the 10-year post-surgery mark.

This is, in part, due to the fact that there is no widely accepted measure for quantifying weight changes. King et al. (2018) addressed the wide variation in reported outcomes post WLS. These authors reflected that the variation may be due to many issues, including how weight regain is actually gauged, units of measurement utilized, type of surgery, demographics of the sample, sample size, and frequency of assessment. These researchers attempted to seek a standardized way of measuring weight regain by assessing over 1,400 individuals who had undergone RYGB surgery over a five-year period. They assessed these individuals not just by BMI but also using various assessments including body weight, self-report questionnaires regarding functioning, and laboratory results such as measures of cholesterol and blood sugar. The study examined weight loss after reaching nadir weight (the lowest weight post-surgery) and found that, on average, individuals regained 9.5% of their weight one year after nadir, 22.5% after three years, and 26.8% after five years.

Lauti et al. (2016) identified similar issues in defining weight regain post-gastric sleeve surgery. These authors conducted a systematic review of studies examining sleeve gastrectomy outcomes and found that up to 75% of weight was regained after six years. The ASMBS recognized the significance of this issue and established the Post-Operative Weight Recurrence (POWER) task force (Majid et al., 2022). This task force conducted

an extensive review of the literature, identified varying measures of suboptimal weight loss, and concluded that weight regain occurs in up to 75% of patients six years post-surgery.

Regain and Quality of Life

Perceived changes in quality of life, a measure of psychological, physical, and social satisfaction, post WLS have been the subject of various studies. It has been show that weight loss positively affected several areas of life, including self-esteem, sex life, and body image (Aitzetmuller-Klietz et al., 2023). Unfortunately, this improvement in quality of life is often reversed with weight regain (Berino et al., 2022; Hollywood et al., 2012). As weight increases, quality of life generally decreases. In fact, quality of life has been shown to regress to pre-surgical levels with the regain of even a portion (15%) of weight (Jirapinyo et al., 2017). Given the fact that obese individuals have often faced long-term weight bias, internalized stigma, and self-loathing, perhaps it is not surprising that these feelings might return with even partial weight regain. Many studies, including Braun et al. (2021), Furtado et al. (2023), and Wimmelman et al. (2014), found that the multitude of pre-existing psychosocial issues associated with obesity often continued post-surgery and can lead to a reduced quality of life and weight regain, despite expectations otherwise.

Regain and Mental Health

Numerous studies have demonstrated an improvement in mental health symptoms and quality of life following WLS, but a regression with weight regain (Athanasiadis et al., 2021and Gill et al., 2019). A literature review conducted on each of the primary WLS

procedures and weight regain as of 2019 found that depression, anxiety, emotional eating, and lowered quality of life were strongly associated with weight regain post-bariatric surgery (Athanasiadis et al., 2021). A meta-analysis of 14 studies concerning mental health issues following WLS found that depression and anxiety generally improved in the immediate period after surgery (Gill et al., 2019). However, they also noted evidence of increasing mental health decline in some participants thereafter. These reviews echoed the findings of previous researchers who identified correlations between weight regain and depression, binge eating, and night eating in individuals experiencing regain (Leung et al., 2019 and Unal et al., 2019). The crucial question of whether these issues may have led to regain or resulted from regain was addressed by Furtado et al. (2021). They studied individuals with pre-existing mental health conditions such as depression, anxiety, and binge eating disorder, and found that weight regain increased the incidence of these issues among those studied.

It is theorized that eating issues such as food addiction and food insecurity have a significant impact on weight regain post-surgery, yet they are not adequately captured under the category of binge eating disorder (Aylward et al.,2022). Consequently, they are not fully understood in relation to weight regain. Loss of control (LOC) eating behaviors were also correlated with weight regain (Yu, 2021). These behaviors may include eating at night, eating when not hungry, taking laxatives to lose weight, and engaging in other unhealthy weight control practices. Previous research had already established a link between reaching a weight loss plateau, its resulting emotional impact, and the subsequent return to maladaptive patterns of eating, with shame and guilt being

mitigating factors as usual (Korchmer, 2018 and McCarthy, 2015). Excess skin and other negative body image issues are prevalent post-WLS and can also influence weight regain (de Lourdes et al., 2021; de Remalho et al., 2015). Body dissatisfaction, dysfunction from medical issues, and sexual functioning are interrelated factors with depression and weight regain.

There is an increased risk of suicide and suicidal behaviors post-bariatric surgery compared to the general population (PharmD et al., 2023). In fact, suicidal episodes are more predominant in those who have completed WLS than in severely obese individuals who have not undergone surgery (Lagerros et al., 2017; Miller-Matero et al., 2023). The risk of suicide in those who have received bariatric surgery is may be actually be nearly four times higher than the rate in the general population (Anamonics et al., 2016). Disappointment with the results of the surgery, weight regain, or suboptimal weight loss can fuel depression and suicidal ideation (Bhattacharya et al., 2024; Oakes, 2018). Weight loss surgery patients often experience a type of "honeymoon period" within the first 12–24 months post-surgery, during which most people experience dramatic benefits from the procedure. However, for some individuals, weight regain and a return to previous eating and lifestyle habits can lead to a resurgence of depression, low self-esteem, and suicidal thoughts (Van den Eynde et al., 2021; Yusufov et al., 2017). A feeling of hopelessness resulting from weight regain and the re-emergence of pre-surgery issues such as BED and body image dissatisfaction may play a significant role in this phenomenon (Mitchel et al.,2013).

Weight Regain and Re-Stigmatization

Weight loss surgery is often perceived by others as an "easy way out," something people opt for when they lack the motivation or willpower to lose weight through traditional means (Groven & Engelsrod, 2016; Himmelstein et al., 2022). In fact, there exists a double stigma for those who undergo WLS (Dimitrov et al., 2023). They are perceived as weaker or lazier than individuals losing weight through conventional methods. This double stigma is exacerbated by weight regain post-surgery. Glenn et al. (2012) noted that the depiction of WLS participants in a negative light is highly prevalent in the media. Gender roles were found to be prevalent, such as the expectation for women to lose weight so she can find a partner and conceive a child. Additionally, WLS participants are still perceived as "bad citizens" due to the expensive cost of the surgery. This notion was echoed in the work of Meleo-Erwin (2019), who suggested that "neoliberal healthism" fuels the perception of WLS participants. This mindset identifies the individual as having complete control over their own choices, leading to the belief that if an individual chooses to make incorrect choices, it is their own fault.

Stigma toward bariatric patients has been associated with attribution theory (Himmelstein et al., 2022). In accordance with this theory, others perceive obesity as self-imposed, and this leads to diminished empathy. Scholars have noted the focus on the dramatic weight loss sometimes associated with WLS in the media and how this can be an obstacle. Some WLS participants have pointed out that this creates a feeling of shame and results in isolation (Groven & Braithwaite, 2015). They also noted that even bariatric support platforms fail to provide support, as it is often not acceptable to express negative

feelings, side effects, or the impacts of surgery.

A review of existing literature on WLS stigma revealed that patients often avoid seeking support due to anticipated stigma from both their community and healthcare professionals (Garcia et al., 2024). Individuals who experience weight regain often perceive judgment from peers and medical practitioners (Groven & Glenn, 2016), thus creating barriers to receiving support and potential interventions from the medical and mental health communities, ultimately leading to a sense of isolation. In addition, WLS participants who regained weight often express self-blame and a decrease in self-esteem (Geraci et al., 2015 and Tolvenan et al., 2021). WLS participants often feel unprepared for weight regain and generally blame themselves, even when they felt they had followed guidelines or had extenuating circumstances. Many WLS participants have felt ill-prepared for the challenges and side effects, reflecting that side effects often made lifestyle changes more physically difficult, and they felt a lack of support around this (Groven, 2014). WLS participants often experience daunting side effects and challenges with surgery, which can impact outcomes. Potential complications are numerous and may include dumping syndrome, anemia, various vitamin and mineral deficiencies, and gastrointestinal issues (Gulinac et al., 2023).

Self-Compassion

Self-compassion has three core components: self-kindness, common humanity, and mindfulness (Neff, 2011). Self-kindness is more than just ending negative self-talk; it involves coming to understand one's own weaknesses instead of criticizing, judging, or punishing oneself. Neff (2011) asserted that the need for positive self-judgment can lead

to shame, guilt, and self-blame when one doesn't measure up somehow. Self-criticism, on the other hand, can be seen as a social mechanism, a way of acknowledging one's own frailty or weakness so that the more dominant group won't focus on it or call it out first. A sense of common humanity is an essential ingredient in self-compassion and allows one to acknowledge that all humans, not just themselves, are flawed and a work in progress (Neff, 2003b).

According to Kristen Neff, the originator of Self-Compassion Theory and the Self-Compassion Scale, individuals who are struggling tend to isolate due to shame and the feeling that they are responsible for their own suffering (McGhee et al., 2017). Shame can also lead to self-harming behavior, numbing, and avoidant behavior (Garbutt et al., 2022). Self-compassion has been shown to be effective in decreasing the tendency to self-criticize and withdraw from others. It can also have a mediating effect on eating behaviors in times of stress and social isolation (Schnepper et al., 2020). A sense of common humanity enables individuals to feel less isolated from the rest of society, which they may perceive as not having these perceived weaknesses or issues. This sense of common humanity allows one to feel connected to others who share a common experience and therefore may receive needed support. According to Neff (2003), mindfulness involves being presently aware of one's emotional state and maintaining a mindset of non-judgment. Mindfulness is a core ingredient in self-compassion, as it is essential to be aware of one's emotional state and needs in order to understand and address them with compassion.

The role of self-compassion in the outcome of WLS has not yet been fully

explored. However, evidence of a relationship between obesity-related areas, including body image, eating pathology, and health-related behaviors, informs the current study. Internalized weight bias and the resulting shame experienced can be mitigated by self-compassion (Braun et al., 2021). Additionally, it has been indicated in the literature that a mindfulness/self-compassion-based intervention can be effective in encouraging intuitive eating behaviors and can be especially helpful in targeting emotional eating. Self-compassion interventions can also be effective in managing maladaptive eating behaviors and increasing intuitive or mindful eating (Carels et al., 2021). These findings were consistent with previous research by Hilbert et al. (2015), who discovered that weight-related self-criticism and self-stigma among the obese can lead to decreased quality of life, self-isolation, and greater somatic symptoms. They also found self-compassion to be a helpful and effective tool in decreasing self-stigma and moderating its impact. Salas (2019) studied the triggering impact of self-stigma or internalized weight bias on social isolation and social identity. This author found that self-compassion moderates this relationship and decreases social isolation. There is a tendency for those who have regained weight to avoid asking for help because of the shame they feel (Groven & Glenn, 2016; Lam et al., 2023). This avoidance can compound weight gain, maladaptive behaviors, and isolation. Long (2018) studied the impact of self-compassion on the fear of being judged by others and specifically, the avoidance of asking for help. This author found that individuals in the study who had higher levels of self-compassion exhibited decreased avoidance of asking for assistance from others.

There is a growing body of research exploring the impact of self-compassion on

eating behaviors. A literature review regarding self-compassion in weight management found that it is helpful in multiple obesity-related areas, including mindful eating, physical activity, and weight management (Brenton-Peters et al., 2021). Self-compassion has a generally positive impact on reducing impulsivity as it relates to weight loss (Mantzios and Wilson ,2013). Self-compassion lessens the impact of impulsivity and often assists individuals in hindering overall regression when impulsive eating occurred. Self-compassion is associated with a significant positive impact on disordered eating and body image (Linardon, 2021 and McCallum et al., 2021). One possible reason for this may be regarding it's impact on self-stigma, which is debilitating to the weight loss process (Carels et al.,2021 and Palmeira et al., 2017). Self-compassion is linked with a decrease in binge eating behavior. Individuals were less likely to criticize themselves, had fewer incidences of binge eating, and were more likely to be able to cope with setbacks. Individuals with self-compassion tend to have less negative affect toward dieting and higher eating-related self-efficacy, even as setbacks inevitably occur (Thøgersen-Ntoumani et al., 2021). They found that appearance-related self-compassion correlated with less disordered eating. Self-disgust, a feeling of extreme low self-worth regarding one's physical self or behavior, is associated with self-stigma and self-criticism. Palmeira et al. (2019a) found that self-disgust often leads to shame, self-blame, avoidance, and eating pathology. They noted the mediating impact of self-compassion on the relationship between BMI and body image; as self-compassion increases, issues with body image decrease, even among those with higher BMIs. These authors found this to be most significant in women in their study.

Several studies have noted that individuals who have the most internalized weight bias and self-judgment are the least likely to follow through on weight loss interventions (Lillis et al., 2020; McCallum et al., 2021). Individuals who have regained weight after weight loss surgery often avoid reaching out to providers and others due to embarrassment and lack of trust (Lam et al., 2023). Self-compassion has been shown to increase engagement, perhaps due to increased self-kindness (Hagerman et al., 2023).

Self-Concept

The term "self-concept," although operationalized in various ways, is generally understood to emerge from interactions with others and refers to one's perception of themselves in relation to others (Kinch, 1963; Rogers, 1959). The formation of self-concept is influenced by how individuals perceive themselves to be viewed by others, which is gleaned from responses—both positive and negative—towards them. This perception directs one's behavior, ensuring that it aligns with their perceived self (Cherry, 2022). Marsh and Shavelson (1985) proposed that self-concept is multifaceted. That is, it is often compartmentalized and broken down into categories that reflect individuals' own values and those of their culture. These authors suggest that it can be both descriptive ("I am a failure") and evaluative ("I fail at math") and hierarchical.

Self-concept can include broad, global generalizations regarding the self ("I am no good") or on a smaller scale ("I am not good at playing cards"). Within identity theory, this process is called self-categorization (Stets & Burke, 2000). These authors have noted that self-categorization renders accepting new information or altering one's behavior more challenging if the new information or behavior does not align with the

category already defined. Although the self-concept is not fixed and can change, individuals often resist information that contradicts the established self-concept (Keyes and Ryff, 2000). They may even be drawn only to circumstances, information, and others who validate their existing self-concept. The authors noted that this drive for self-consistency makes self-concept changes less likely. According to Social Identity Theory, self-concept is viewed in regard to how individuals perceive themselves within groups. Individuals are said to be motivated by acceptance and the ability to achieve within the group (Hogg, 2018).

The relationship between self-concept and weight loss efforts has been a focal point of study. For example, Alert et al. (2019) discovered, in their study of adolescents, that girls were more likely to over-identify themselves as overweight and have lower exercise self-efficacy. Furthermore, those who over-identified with being overweight or obese, or overestimated their weight status, were more likely to engage in sedentary behaviors compared to those who accurately identified their weight. The assimilation of an "obese identity" impacts one's perception of themselves even after weight loss and can be detrimental to the weight loss process (Mento et al., 2022). The change in perception regarding one's ability to lose weight may result from prolonged exposure to the internalization of stigmatizing notions (Major et al., 2020; Perdue et al., 2020). An individual identifying as obese may perceive themselves as powerless, even after weight loss surgery. Self-concept also significantly influences weight loss; individuals who do not identify as obese may struggle to maintain weight loss behaviors (Kwak et al., 2022).

If the self, or parts of the self, are seen as disgusting by others (e.g., weight or

physical appearance), this view can become ingrained in the self-system (Gilbert, 2015). It is noteworthy that while this psycho-social decline is clearly indicated with adult-onset obesity, the pervasive impact on those who experience obesity as children can be even more destructive (Bingol & Demirpence, 2020; Liu et al., 2022). In fact, authors have noted that if the younger one becomes obese, the more cumulative and destructive its impact on the development of the self, due to the exposure to social stigma.

Self-esteem, which entails the evaluation of oneself compared to others, was a tenet of self-concept (Rogers, 1959). Researchers have established a significant relationship between low self-esteem and obesity, as well as weight gain (Byth et al., 2022; Elran-Barak, 2019). Self-esteem involves the evaluation of one's abilities, skills, and social acceptance, which pertains to one's perception of how accepted or included they are by others (Schwager et al., 2020). One's self-esteem impacts their health-related behaviors (Bonsaksen et al., 2015 and Liu et al., 2022). Specifically, low self-esteem can lead to unhealthy behaviors which are subconsciously aimed at managing difficult emotional states such as anxiety and depression. In fact, it has been noted in e literature that low self-esteem often hinders weight loss efforts and progress (Herbozo et al., 2015). Low self-esteem, which is prevalent in individuals with binge eating disorder, negatively affects healthy eating behaviors (Brechan & Kvalem, 2015; Cella, 2019; Kapoor et al., 2022). This may be attributed to the extent of negative self-evaluation and the resulting negative emotions regarding the outcomes of weight loss efforts.

Gap in the Literature

Weight regain post WLS is common, and researchers have begun to study its

moderators more substantively. Generally, the outcome of weight loss surgery is seen to hinge on three elements: the ability to adhere to a very restrictive diet, consistent exercise regimen, and the development of coping strategies for emotional eating (Groven et al., 2010). There is an established relationship between self-compassion and one's body image, eating pathology, and healthy eating behaviors (Sirois et al., 2015). Kearney (2014) studied the relationship between self-compassion and weight regain post weight loss surgery. While this author did not find a significant relationship, she noted the limitations of her study and emphasized the need for further research in the area. Kearney (2014) conducted a study on weight loss surgery participants in general, categorizing them by BMI and total weight lost. The study included both male and female participants and utilized the short form of the Self-Compassion scale. In contrast, the current study focused on female participants, who were more likely to exhibit lower levels of self-compassion, particularly those who regained weight. Additionally, this study employed the long form of the Self-Compassion scale. The aim of this strategy was to gain a more detailed understanding of the impact on those most likely affected by the regain of weight. Self-concept, as it relates to weight-related behaviors has been studied, but not specifically as it applies to weight regain post-weight loss surgery (Alert et al., 2019; Brechan & Kvalem, 2015; Cella, 2019). Self-concept is formed in relation to others and can be influenced by internalized weight bias. This study aimed to broaden our understanding of how self-concept may play a role in the regain of weight post-WLS.

Summary

The purpose of this study was to identify and understand the nature of the

relationship between one's self-concept and degree of self-compassion with the regain of weight after weight loss surgery. This chapter included an overview of existing literature regarding obesity, weight regain post WLS, self-concept and self-compassion. I discussed the incidence of obesity and its associated psychosocial issues, as well as weight regain post-surgery and the possible reoccurrence of those issues. Mental health decline, internalized stigma, feelings of guilt and shame, and social isolation are some of the issues common to both obesity and weight regain. Weight loss surgery is often promoted as the solution to many of life's issues, including improved self-esteem, social life, sexual attractiveness, and confidence (Groven & Brathwaite, 2015). Unfortunately, the high expectations associated with this surgery, and the assumption that it will resolve many problems for the individual, can actually lead to psychosocial decline (Griauzide et al., 2018). The possibility of weight regain and the myriad of complications are often overlooked. While WLS targets the physical aspects of weight loss, some argue that the procedures fall short of addressing the various other issues interrelated to obesity, eating disorders, self-concept, and psychological issues, thereby potentially making weight loss less sustainable (Ogden et al., 2011). Also discussed in this chapter was Carl Rogers's Self Theory, which serves as the conceptual framework for the study. I discussed these concepts and proposed their relevance to the process of weight regain. Extensive research aims to explain the physical and behavioral reasons why an individual may regain weight post-WLS. This study seeks to fill the gap in understanding some of the psychological processes that may impede weight loss.

Chapter 3: Research Method

The purpose of this quantitative study was to explore the relationship between self-concept and self-compassion and weight loss outcomes post WLS. Additionally, the study aimed to investigate the relationship between self-concept and self-compassion and weight regain as a separate phenomenon. Self-concept was measured using the TSCS-2, which provides multivariate scale scores for self-concept within the domains of physical, moral, personal, family, social, and academic/work. Self-compassion was measured using the SC. Participants in this study were administered both of these scales, and their responses were analyzed using SPSS software. Multiple linear regression analysis was employed to identify the nature and direction of any relationships between variables.

Chapter 3 will discuss the research methodology and provide a detailed description of the study's design. The chapter is divided into relevant areas: research design and rationale, methodology, population and sampling procedures, instrumentation, data collection and analysis, threats to validity, and ethical considerations. A summary of the research methods utilized and a brief introduction to the following sections of the study concludes the chapter.

Research Design and Rationale

Research Questions and Variables

RQ 1: What is the relationship between TSCS-2 scores (including summary, supplementary and subscale scores) and SCS (and subscale) scores and overall percentage of weight loss post WLS in women?

$H_1$1: There is a significant relationship between TSCS-2 scores and SCS scores

and weight loss percentage.

$H_0$1: There is no significant relationship between TSCS-2 scores and SCS scores and weight loss percentage.

RQ 2: Do TSCS-2 scores (including summary, supplementary and subscale) and SCS (and subscale) scores predict weight regain post-WLS in women?

$H_1$2: TSCS-2 scores and SCS scores do predict weight regain post WLS.

$H_0$2: TSCS-2 scores and SCS scores do not predict weight regain post WLS.

The study examined the relationship between self-compassion and self-concept and weight loss outcomes through two analyses. SCS scores and TSCS-2 scores were the independent variables explored in both analyses. The SCS scores include one general score and six subscale scores (kindness, self-judgment, common humanity, isolation, mindfulness, and over-identification). TSCS-2 scale scores include summary scores (total self-concept and conflict), supplementary scores (identity, satisfaction, and behavior), and six subscales (Physical, Moral, Social, Academic/Work, Personal, and Family). The dependent variable for addressing RQ 1 was the percentage of weight loss. This percentage was calculated for each participant by subtracting their current weight from their initial weight, and then dividing the resulting difference by their initial weight. For RQ 2, the dependent variable was the percentage of weight regain. This was calculated by subtracting each participant's lowest weight (nadir) from their highest weight, thus establishing the total number of pounds lost. The lowest weight was subtracted from the current weight to determine weight regain in pounds. This figure was then divided by the total weight loss in pounds to calculate the percentage of total weight regain. Possible

confounding variables in this study included the type of surgery performed, the length of time since the surgery, co-morbidities, and the age of the person at the time of the surgery.

Research Design

I utilized a correlational research design with survey data for a variety of reasons. First, it is a cost-effective and efficient way to reach as many participants as possible within the study's time constraints. Second, the survey was easily accessible through any internet-connected electronic device and targeted individuals across the entire United States. The ability to have a wide variety of participants makes a representative sample more likely. Third, the survey format, utilizing a survey software program, enabled the data from the two validated instruments to be thoroughly and reliably analyzed. This study was a cross-sectional study, meaning participants were accessed only once and did not have to be contacted again for any kind of follow-up. This design type reduces the possibility of participant dropout.

A disadvantage of a cross-sectional survey design study was that participants were accessed only once, and progress or changes over time cannot be captured. I sought to generalize the answers given on that one day only. There may have been elements that influenced participants' answers and perceptions on that specific day, such as mood, stress, or distraction, potentially skewing the outcome. Another disadvantage may have been bias. This study was implemented online and offered participants no other access. Though many individuals who have had WLS currently have access to internet-compatible electronic devices, it cannot be assumed that all individuals have this access.

A correlational method was also part of this study, as this type of method is typically used when data are unmanipulated (Schwartz et al., 2019). This design allowed examination of the nature of the relationship between variables, the way they covary, by means of a correlation coefficient but will not be able to determine cause and effect. A correlation coefficient provided a standardized method to articulate the relationship between variables, its strength, and direction (Hanna & Martin, 2012). Intervention was not a possibility in completing this study; therefore, an experimental design was inappropriate. Evidence of correlation, though not implying causation, provides valuable information regarding the variables and their interconnection. Correlation enables predictions to be made between variables using a linear regression equation and regression line (Schwartz et al., 2019). Once a significant relationship between variables is established, a regression line facilitates predictions about one variable based on knowledge of the other. In this study, this implied that understanding one's level of self-compassion or self-concept allows for predictions concerning weight loss surgery outcomes.

Methodology

Population

The population for this study comprised females aged 18 years and above who have undergone any type of weight loss surgery within the past two to ten years. The assumption was that the same psychological mechanisms will be at play, regardless of the surgical venue. Individuals under the age of 18 were not selected to participate as most surgeries are performed on adults. Additionally, due to the nature of this stage of life,

these individuals may experience a different psychosocial process than adults, and thus it would be best to study them separately. These issues, along with others unique to this population, may have skewed the outcomes solely due to the age of participants.

A review of the literature revealed that the impact of self-compassion and self-concept issues regarding obesity, weight regain, body image, and internalized stigma is significant in women (Hibert et al., 2015; Palmeira et al., 2017). Therefore, the study directly focused on women to target outcomes in individuals who may be most affected. Participants must have undergone surgery at least two years prior to the study since the initial two years post-surgery are typically when subjects tend to lose the bulk of their weight. Individuals who underwent surgery more than 10 years ago were excluded to minimize the influence of other confounding variables that may naturally arise beyond that timeframe (such as aging, other medical issues, lessening psychological association with the surgery). Individuals who had undergone more than one WLS were also excluded, as additional surgeries may have skewed the data on actual outcomes. Demographic information was gathered from the participants. Participants in this study were required to have been able to read and write in English, as the survey was provided only in English. Descriptive statistics were analyzed based on the demographic data collected, including age, state of residence, ethnicity, and type of surgery.

Sampling, Participation, and Data Collection

Several sources were utilized for recruitment in this study. First, convenience sampling was employed by two online survey platforms, Survey Swap and Qualtrics. These programs served as venues for survey implementation and participant recruitment.

Both platforms boasted millions of individuals in their participant pools worldwide, and this study accessed both companies to obtain the highest number of respondents in a time-efficient manner. The Walden University Participant Pool was intended but not accessed to recruit participants. Snowball sampling was conducted through recruitment via social media platforms such as Facebook and Reddit. Snowball sampling was able to access a greater number of participants beyond the researcher's individual social media network. A social media post on Facebook and Reddit detailing the basic purpose and criteria for the study was posted to glean participants. Each contact was asked to share the request for participants on their own page and encourage their friends to do the same. The links to the Qualtrics survey was included in the post. Surveys were completed via the internet on the chosen platform, and the data was collected by that platform upon completion.

Power Analysis

Calculating the statistical power in a test is crucial to avoid making a type II error, which is the incorrect rejection of the null hypothesis (Hanna & Dempster, 2012). The power of a test can be understood as the probability that a test will reveal a treatment effect and enable the rejection of the null hypothesis (Gravetter & Wallnau, 2016). According to these authors, researchers conduct power analyses prior to research to ensure that the outcome can accurately represent its significance. This is accomplished through the estimation of sample size, size of the treatment effect, and the selection of the alpha level. The treatment effect represents the measure under study. Generally speaking, as the effect size increases, so does the power of the test or the ability to reject the null

hypothesis. Sample size plays a significant role in determining the power of a test. Generally speaking, the larger the sample size, the greater the power of the study. Since it is impossible to attain data from every person who has undergone WLS, it is important to calculate the number of participants needed for the study to achieve a significant outcome. The least number of participants was 143. With a power of .80 and alpha of .05, the formula used to estimate sample size is as follows:

$$n = f(\alpha, \beta) * (\frac{2s^2}{\delta^2})$$

$$n = 11.7 * (\frac{2(4.94)^2}{2^2})$$

n = 142.76

Where:

α = significance level = 0.01

1 − β = power

β = 0.20

f(α, β) is a value calculated from α and β

δ = smallest effect of interest = 2

s = standard deviation = 4.94

f(α, β) for the most commonly used values for α and β

Instrumentation and Operationalization of Constructs

TSCS-2

The measurement of self-concept in this study was obtained using the TSCS-2. It assesses one's perception of oneself across multiple domains (Fitts & Warren, 1996), including Physical, Moral, Personal, Family, Social, and Academic/Work. Supplementary

scores are derived from three categories: Identity, Satisfaction, and Behavior. Response bias is addressed through four validity scales: Inconsistent responding, Self-criticism, Faking good, and Response Distribution. The scale also yields two summary scores: Total Self-Concept and Conflict. A high Total Self-Concept score often signifies general self-confidence, resilience, and an ability to move toward situations in which individuals can improve. An individual with a low self-concept score may perceive themselves as having less value, may experience anxiety or depression, and may be more sensitive to negative evaluation. A moderately high score on the Conflict scale would be associated with a person who focuses on their positive attributes, on what they are, rather than what they are not. In contrast, a low Conflict score may indicate that a person is focusing on the evaluation of what they are not or their negative attributes. The TSCS:2 adult form is a self-report scale and consists of 82 self-descriptions. The participant is asked to use a Likert scale to rate how these self-descriptions apply to themselves. The Likert scale ranges from 1: always false, 2: mostly false, 3: partly false and partly true, 4: mostly true, and 5: always true.

The adult form was validated on 1,944 individuals ranging in age from 13–90 and required a third-grade reading level, as reported by Fitts and Warren (2017). The TSCS-2 demonstrates good internal consistency, with a Cronbach's alpha score of 0.80. According to the authors of the TSCS-2, the scale has been utilized multiple times on a variety of different populations. It shows good construct validity when compared to other scales measuring similar constructs, such as the MMPI and Edwards Personal Preference Schedule. Recently the TSCS-2 was utilized to evaluate the relationship between physical

self-concept scores in adolescents and body mass and body perception (Zsakai et al., 2017). Additionally, the scale was employed to study self-concept in relation to work readiness (Lau et al., 2020) and in relation to relationship quality and illness acceptance in individuals with multiple sclerosis (Wright & Kiropoulos, 2017).

SCS

The scale utilized in this study to measure self-compassion was the Self-Compassion Scale, designed by Kirsten Neff (Neff, 2003). Neff developed this self-report scale for use by the general public and expressly noted that it can be used in studies without written authorization (see Appendix). This scale is based on the author's theory that self-compassion has three elements: self-kindness, mindfulness, and a sense of common humanity. The scale items were derived through pilot testing of undergraduate students and eventually materialized into the current format. The scale includes 26 items, to which respondents indicate how they typically act toward themselves in difficult times. Responses are measured on a Likert scale ranging from 1 (Almost Never) to 5 (Almost Always). These items yield outcomes based on subscales, which encompass the three elements of self-compassion proposed by Neff along with their alternates: self-kindness, self-judgment, mindfulness, over-identification, common humanity, and isolation. The scale yields both a grand score, measuring one's overall level of self-compassion, and subscale scores, which offer insight into specific tendencies.

This scale was created and validated on undergraduate students. Neff examined the reliability of the scale and found that the internal consistency of the whole scale was .92, and the individual subscale scores for internal consistency ranged between .75 and

.80. In 2003, Neff examined the validity of the scale by comparing the SCS with measures of multiple social connectedness, self-acceptance, self-esteem, depression, anxiety, and self-criticism. Significant Pearson's correlations were found between the SCS and these scales. Neff found that the SCS scores of women were consistently lower than those of the male participants in each of the studies used to create and validate this instrument. The self-compassion scale has recently been used to measure self-compassion as it relates to emotional eating (Gouveia et al., 2019), disordered eating, and perfectionism (Bergunde & Dritschel, 2020).

Data Analysis

IBM SPSS software, version 27, was utilized to analyze all data in this study. Research questions were addressed by using Pearson's coefficient analysis to determine if there is a relationship between scores on the TSCS-2 scores and SCS scores and weight loss outcomes. Multiple linear regression analysis was performed on this data to demonstrate the strength and direction of any relationship, as well as to account for possible confounding variables such as years post-surgery, age of participants, comorbidities, and type of surgery. Demographic data and descriptive statistics were analyzed as appropriate.

Threats to Validity

The purpose of this quantitative correlational study was to provide a description of the self-concept and self-compassion levels in a sample of adult female WLS participants, aiming to generalize these findings to the overall population of adult female WLS participants. There were potential threats to both internal and external validity, as is

the case for any study according to Creswell and Creswell (2018). According to these authors, internal threats might have included any factors outside the study that participants may be involved in, which could have impacted the researcher's ability to generalize from the data.

Additionally, the sample may have exhibited intrinsic volunteer bias since the study focused on internet surveys. The sample generated could have been biased as participants must have had access to and be comfortable using the internet. Furthermore, the study may have been susceptible to a form of regression bias, as individuals responding to the survey may have represented extreme outcomes. For example, someone experiencing a marked level of duress due to suboptimal weight loss may be more psychologically focused on their outcome and therefore more likely to respond to the survey than those who do not experience the same level of duress. Construct validity is a measure of whether a study measures what it intends to measure (Dempster & Hanna, 2016). Both the TSCS-2 and SCS have been independently validated and are adequate measures of self-concept and self-compassion.

External validity addresses the researcher's ability to generalize about a larger population from the data in the current study. Possible threats to external validity in this study may have been the experimenter effect. If this researcher used language that conjures an emotional reaction in participants (such as a focus on the importance of finding changes in self-concept or self-compassion), this may have placed psychological pressure to skew answers in this way.

Ethical Considerations and Procedures

The data collected during survey procedures did not include identifying information. Participants were anonymous. Identification of participants was not necessary for the survey companies responsible for posting the survey and handling the data collection. These companies have alternate means of keeping track of participants and limiting the ability of participants to fill out the survey more than once. Subjects were provided with an overview of the study's theme and basic criteria to become participants. Participants needed to read and sign a consent form that clearly identifies their rights and protections if they decide to take part. This consent form made it clear that any participant who became uncomfortable during or regarding the survey could end the study at any time and was under no obligation to complete it. Additionally, the number of a national hotline was included. It was suggested that if triggered, participants should contact the hotline number in order to receive brief counseling and referral if necessary. The consent also encouraged any participant who wished to know the outcome of the study to contact me, and they will be provided with this information when available. Study approval was obtained from the Walden University Institutional Review Board (IRB) in order to verify that standards were met for the protection of human participants.

Summary

This chapter summarized the methodology proposed to answer the research questions in this study. The purpose of this quantitative study was to explore any relationship between self-concept and self-compassion and weight loss outcomes. The independent variables, Self-concept and Self-compassion, were measured using the

TSCS-2 and its subscales, as well as the SCS and its subscales. Both instruments have been previously validated. Separate analyses were conducted to address RQ1 and RQ2. RQ1 addressed the relationship between scale scores and overall weight loss outcome, while RQ2 examined the relationship between scale scores and weight regain. This study employed a correlational research design using survey data, which allowed inferences to be drawn regarding the relationships but cannot determine cause and effect. The nature, strength, and direction of the relationships between variables were analyzed using Pearson's correlation coefficient and multiple linear regressions.

The population for this study consisted of females over the age of 18 years who have undergone WLS within the past 2–10 years. Convenience sampling was conducted using the online platforms, Qualtrics and Survey Swap. Additionally, snowball sampling was carried out through social media platforms. Ethical data collection was ensured through the use of an online survey platform that does not permit the collection or storage of identifying information. Chapter Four will present the results of the study. Each research question will be addressed through statistical analysis of the data and descriptive statistics of all variables.

Chapter 4: Results

The aim of this study was to describe the relationship between self-concept and self-compassion and weight loss outcomes in women post-WLS. An additional objective of this study was to determine whether self-concept and/or self-compassion could predict weight loss outcomes. Previous literature has demonstrated links between both self-concept and self-compassion and issues related to weight (Alert et al., 2019; Hilbert et al., 2015; Major et al., 2020; Salas, 2019). The independent variables in this study were the scores on the TSCS-2 and the SCS. All domains (including physical, moral, personal, family, social, and academic/work) and supplementary scores (Identity, Satisfaction, and Behavior) were included in the analysis of the TSCS-2 scale scores. In addition, all subscale scores on the SCS (which include Self-Kindness, Self-Judgment, Mindfulness, Over-Identification, Common Humanity, and Isolation) were analyzed for this study. Two research questions informed the study. "What is the relationship between TSCS-2 scores (including summary, supplementary and subscale scores) and SCS (and subscale) scores and overall percentage of weight loss post WLS?" and "Do TSCS-2 scores (including summary, supplementary and subscale) and SCS (and subscale) scores predict weight regain post WLS?"

Data Collection

Sampling

According to the power analysis, 143 participants were needed to achieve the necessary power, significance level, and effect size. The survey was created using the Qualtrics survey platform. Sampling was approached in two ways: convenience sampling

and snowball sampling. Snowball sampling was attempted by posting a request for participants on social media platforms such as Facebook and Reddit. However, these sources did not yield enough responses to meet the necessary effect. The majority of responses were obtained through convenience sampling, primarily via the Qualtrics platform participant pool initially. The initial release utilized the Qualtrics participant pool and generated 202 participant responses. Many of these responses were discarded as invalid for the study, resulting in 101 usable responses by the end of that release. This figure included some of the social media responses, although it is not possible to discern which responses came from which source. Due to the insufficient number of viable responses, the study was subsequently released again through the "Survey Swap" platform. This garnered an additional 192 responses, of which 150 were also discarded. A total of 394 responses were ultimately collected, yielding 153 valid and usable responses. The discarded surveys were not utilized for the following reasons: incomplete responses (166), duplicate responses (12), starting weights lower than 150 pounds (22), and completion in under 4 minutes (41). The final sample of 153 met the minimum criteria sufficient to obtain 80% power to identify significance in hypothesis testing.

Demographics

The sample included adult women (age 18 and above) living in the United States, who underwent a WLS within the past 2–10 years. Only participants who underwent just one WLS were included. Possible weight loss surgeries involved in this study included the following types: laparoscopic adjustable gastric banding (LAGB), sleeve gastrectomy, open RYGB biliopancreatic diversion (BPD/DS) with or without duodenal

switch, and laparoscopic Roux-en-Y gastric bypass (RYGB). The mean weight of participants in the study prior to WLS was 305 ± 88 lbs. The mean weight loss was 137 ± 69 lbs. The mean percentage of weight regain was 9.7 ± 13.6%. The descriptive analysis is illustrated in Table 1.

Table 1

Types of Weight Loss Surgery

Type of Surgery	Frequency	Percent
Laparoscopic adjustable gastric banding (LAGB)	63	41.2
Laparoscopic Roux-en-Y gastric bypass (RYGB)	42	27.5
Sleeve gastrectomy	41	26.8
Open RYGB biliopancreatic diversion (BPD/DS) with or without duodenal switch	7	4.6
Total	153	100.0

Analysis of Data

IBM SPSS software, version 27, was utilized to analyze all data in this study. Generally, a normal distribution and not a skewed one is the base assumption of statistical procedures. For this reason, TSCS-2 and SCS scores were analyzed using z scores formed by dividing the skewness by the standard error of skewness in order to identify the normality of the distributions. A *z* score within +/-3.29 indicates a normal distribution (West et al., 1995). The results (presented in Table 2) show that in the case of the dependent variable, "percentage of weight regain," the distribution of the data was substantially skewed. As recommended by Tabachnick and Fidell (2013), a logarithm was applied to this data in order to transform it and normalize it. This normalized version of the "weight regained" variable was used in all following analyses.

Table 2

Summary Statistics for Study Measures

Study Measures	*Mean*	*SD*	*Skewness*	*SE*	*z*	
Self-Concept						
Physical	39.45	8.74	-0.02	0.20	-0.08	
Moral	25.95	7.88	0.45	0.20	2.29	
Personal	29.25	8.73	0.38	0.20	1.92	
Family	30.24	9.23	0.21	0.20	1.07	
Social	28.35	7.59	-0.12	0.20	-0.62	
Academic/Work	28.17	7.66	-0.29	0.20	-1.48	
Total Self-Concept	181.42	41.35	-0.06	0.20	-0.31	
Identity	47.14	13.89	0.27	0.20	1.40	
Satisfaction	55.23	12.15	-0.11	0.20	-0.58	
Behavior	50.39	12.51	-0.17	0.20	-0.85	
Self-Compassion						
Kindness	3.48	0.70	0.06	0.20	0.31	
Common Humanity	3.49	0.72	-0.35	0.20	-1.80	
Mindfulness	3.52	0.67	-0.13	0.20	-0.66	
Lack of Indifference	2.59	0.83	0.24	0.20	1.20	
Total Self-Compassion	3.27	0.36	-0.22	0.20	-1.13	
Weight variables						
% weight lost	39.35	13.59	-0.01	0.20	-0.05	
% weight regained	9.74	13.56	2.23	0.20	11.39	*
Normalized variable (logarithm)						
% weight regained	1.28	1.52	0.11	0.20	0.58	

Hypothesis Testing

Two hypotheses were proposed in the current study based on each of the research questions:

RQ 1: What is the relationship between TSCS-2 scores (including summary, supplementary and subscale scores) and SCS (and subscale) scores and overall percentage of weight loss post WLS in women?

$H_1$1: There is a significant relationship between TSCS-2 scores and SCS scores and weight loss percentage.

$H_0$1: There is no significant relationship between TSCS-2 scores and SCS scores

and weight loss percentage.

RQ 2: Do TSCS-2 scores (including summary, supplementary and subscale) and SCS (and subscale) scores predict weight regain post-WLS in women?

$H_1$2: TSCS-2 scores and SCS scores do predict weight regain post WLS.

$H_0$2: TSCS-2 scores and SCS scores do not predict weight regain post WLS.

RQ1: What is the Relationship Between Scale Scores and Weight Loss?

Correlation is a statistical technique commonly utilized to describe the direction, form, and strength of a relationship between variables (Gravetter & Wallnau, 2009). A Pearson correlation is a statistical equation that allows measurement of the degree and direction of a relationship between variables. The results of the Pearson correlations are shown in Table 3.

Table 3

Pearson Correlations Between Study Outcomes and Predictors

	% Weight Lost		% Weight Regained*	
Scales	*r*	*p*	*r*	*p*
Self-Concept				
Physical	.08	.346	.15	.071
Moral	.09	.245	-.07	.399
Personal	.13	.106	.02	.775
Family	.16	.054	.06	.452
Social	.05	.526	-.01	.916
Academic/Work	.13	.099	-.12	.155
Total Self-Concept	.13	.107	.01	.868
Identity	.10	.232	.09	.275
Satisfaction	.15	.073	-.01	.893
Behavior	.12	.138	.02	.766
Self-Compassion				
Kindness	.10	.210	.00	.957
Common Humanity	.21	.009	-.16	.050
Mindfulness	.08	.310	-.02	.835
Lack of Indifference	-.05	.538	.03	.699
Total Self-Compassion	.16	.044	-.07	.385

*logarithm

Regarding RQ 1, the percentage of weight lost (r = .21, p = .009), one predictor variable, the Common Humanity scale score (a subscale of the SCS), significantly impacted outcomes. The total SCS score yielded a significant result (r = .16, p = .044). The total SCS score includes the common humanity scores, which may have been the influential factor in this outcome. No significant outcomes were noted in regard to the TSCS-2 scores in the Pearson correlation equations.

RQ 2: Can the Independent Variable Scores Predict Weight Loss?

Regarding RQ 2, the percentage of weight regain (r = -.16, p = .050), the results of the Pearson correlations show that the Common Humanity scale score (a subscale of the SCS) significantly impacted outcomes. Linear regression analysis allows for prediction based on the identification of a regression or "best fit line" that can be drawn through the data on a scatter plot. In short, the slope of this "best fit" line through the data points allows understanding of how much the independent variable influences the dependent variable (Gravetter and Wallnau, 2016). Both Pearson correlation and stepwise linear regression analysis were utilized to describe the relationships between the predictors (independent variables: TSCS-2 scores and SCS scores) and the outcomes (dependent variables: percentage of weight loss and weight regain). Linear regression analysis is employed to estimate the relationship between one dependent variable and multiple (at least two) independent variables (Bevins, 2023). It not only demonstrates the strength of the relationship but also predicts the value of a dependent variable given the independent variables. A significance level of .05 was utilized as the criteria for each

variable (separate TSCS-2 and SCS scores) to be entered into the regression equation. The regression line created was able to illustrate the direction and strength of the relationship between scale scores and weight loss outcome and was also able to identify the strongest predictor variables, or scale scores most capable of predicting or influencing weight loss outcomes.

Statistical analysis meets the four assumptions of the linear regression equation (James et al., 2013). These assumptions include:

- Independence: There are no correlations between the residuals in the data. The assumptions were tested, confirming that the Durbin-Watson statistic was close to 2.0, which indicates that there was no multicollinearity (intercorrelation between independent variables) in the regression models.
- Linear relationship: A linear relationship was shown between the predictor (independent) variables and the criterion variables.
- Homoscedacity: Residuals do not show a constant variance at every level of x. Heteroscedasticity was ruled out, as evidenced by scatterplots of the standardized predictors against the standardized residuals.
- Normality: Residuals are distributed normally with assistance from the logarithm.

The results of the regression analysis to predict the percentage of weight lost (RQ 2) are summarized in Table 4. Following the inclusion of common humanity into the regression equation, no other predictive scale scores showed a relationship with the percentage of weight lost. The results partially support the alternative hypothesis: there

was one significant relationship between TSCS-2 and SCS scores and the percentage of weight loss. The beta weight (β = .21, p = .009) reflects the result found using Pearson correlation in Table 3.

Table 4

Stepwise Linear Regression to Predict the Percentage of Weight Lost

Step	Variable Entered	R^2 Change	F Change	df	p	β	p
1	Common Humanity	.04	6.91	1, 151	.009	.21	.009

The results of the regression to predict the percentage of weight regained are summarized in Table 5. Note that R^2 is the square of the residual value, or the square of the distance from the best-fit line to where the variable lies. This is a measure of effect size, indicating how much the variability in scores is predicted by the treatment effect (Gravetter & Wallnau, 2009). In this case, the farther the value of R^2 is from the best-fit line, the less influence the independent or predictor variable (scale scores) has on the dependent or criterion variable (percentage of weight loss). The error is squared in order to accentuate the larger deviations from the line and to keep the number positive. R^2 change signifies the change in R^2 between two equations when a new variable is introduced. F change is used to demonstrate the significance of the change in R^2.

The analysis indicates that two TSCS-2 scale scores, Academic/Work and Physical Self-Concept scale scores, significantly contributed to the prediction of weight regained when entered into the regression equation alongside the SCS subscale, common humanity. The beta weights reflected the relationships identified through Pearson correlations, with the regression showing stronger predictive power when these predictors

were considered together. The beta weights for the common humanity (β = -.21, p = .006) and Academic/Work Self-Concept (β = -.23, p = .010) scales were negative. These results indicate that higher scores on the two scales significantly predict a lower percentage of weight regain. Conversely, the beta weight for the physical Self-Concept scale was positive (β = .32, p = .001), indicating that a higher score on this scale predicts a higher percentage of weight regain. These findings support the acceptance of the alternate hypothesis that TSCS-2 scores and SCS scores predict weight regain post-WLS.

Table 5

Stepwise Linear Regression to Predict the Percentage of Weight Regained

Step	Variable Entered	R^2 *Change*	*F Change*	*df*	*P*	β	*p*
1	Common Humanity	.03	3.91	1, 151	.050	-.23	.006
2	Physical Self-Concept	.04	7.01	1, 150	.009	.32	.001
3	Academic/Work Self-Concept	.04	6.82	1, 149	.010	-.23	.010

Summary

The purpose of this quantitative study was to identify and describe any relationship between self-concept and self-compassion and weight loss outcomes after weight loss surgery in women. Participants were adult women living in the United States who had undergone one of four types of weight loss surgeries within the past 2–10 years. A survey format was utilized to construct the study, which was published via social media and the Qualtrics survey platform.

The study utilized Pearson correlation analysis and linear regression equations to address the research questions. The outcome of the data analysis revealed significant relationships between certain variables. A Pearson correlation analysis was utilized to

address RQ 1. This analysis revealed that the SCS scores, primarily its subscale common humanity scores, showed a significant positive correlation with the percentage of weight loss and a significant negative correlation with the percentage of weight regain. In other words, the higher the participant's self-compassion, the higher her weight loss percentage, and conversely, the lower the score, the higher the percentage of weight regain.

A stepwise linear regression analysis was conducted to address RQ 2. This analysis yielded evidence of relationships between variables, allowing for predictions to be made. According to the regression equation, TSCS-2 scales such as Academic/Work and Physical Self-Concept scale scores significantly contributed to the prediction of weight regain when included in the regression equation alongside the Self-Compassion subscale, common humanity. In summary, the TSCS-2 Academic/Work scale combined with the SCS had a significantly negative impact on weight regain, while the Physical Self-Concept scale score had a significant positive impact on weight regain. Interpretations of these findings and their implications for social change will be discussed in Chapter 5, along with limitations of this study and recommendations for future research.

Chapter 5: Discussion, Conclusions, and Recommendations

Obesity, which continues to increase, has extensive impacts, including psychosocial, physical, and an overall decrease in quality of life (Abiri et al., 2022). Significant weight loss can restore the quality of life in multiple areas for individuals affected by obesity (Aitzetmuller-Kleitz et al., 2023). It is well-documented that bariatric or WLS is an effective intervention for dramatic weight loss, more so than lifestyle or pharmaceutical interventions (Hua et al., 2022; Arterburn et al., 2021). However, weight regain and suboptimal weight loss post-surgery are predominant issues that are beginning to be addressed (Athanasiadis et al., 2021). In fact, significant weight regain is shown in 30%–40% of participants within 5–10 years of surgery. Weight regain often brings with it a return to pre-surgery health issues and psychosocial issues, including depression and anxiety (Tolvenan et al., 2022). This is despite the fact that some evidence suggests that certain physical occurrences, including hormonal and metabolic changes, often lead to weight regain but are not within the control of the patient (Tolvenan et al., 2021). Psychologically, weight regain can compound the feelings of shame, self-loathing, and internalized stigma that obese individuals typically endure. The purpose of the current study was to contribute to the existing literature regarding the question of why so many people fail to achieve or sustain weight loss post-surgery, aiming to promote positive social change.

The study of factors leading to weight regain post-WLS has broadened, enabling scientists to reveal links between regain and a myriad of variables, both physical and psychosocial (Martin-Fernandez et al., 2022). There seems not to be one conclusive

answer to this question but perhaps a multitude of variables interacting in ways that are as unique as the weight loss surgery patient. But I found that a gap existed in the literature regarding the impact of two psychological mechanisms: self-concept and self-compassion. I conducted a survey and correlation research study to examine the relationships between weight loss outcomes and both of these constructs. The operational definition of self-concept in my study was gleaned from various sources, including Carl Rogers's self-theory. Self-concept was defined as an individual's perception of themselves and their attributes (Kinch, 1963). Self-concept is understood to be influenced by social development and driven by social validation (Rogers, 1959). Self-concept was measured using the TSCS-2. The operational definition of self-compassion was derived from the work of Dr. Kristen Neff (2003). Her theory of self-compassion identifies three key elements: self-kindness, common humanity, and mindfulness. Self-compassion is defined as the manner in which a person relates to themselves, particularly significant during times of challenges, failures, or perceived obstacles. The SCS was employed in this study to measure self-compassion. The long forms of both scales were utilized in this study instead of their shorter counterparts.

The survey I created presented both of these scales to women who underwent WLS 2–10 years ago. Participants were collected via social media and online survey companies. The inclusion criteria also included living in the United States and having undergone only one WLS. I partially confirmed my hypothesis regarding RQ 1, which was that these two psychological constructs would have a relationship with weight loss outcomes. Self-compassion scores exhibited a significant relationship with outcomes

pertaining to addressing this question. Concerning RQ 2, when all scale scores were entered into a linear regression equation, physical and academic self-concept scale scores demonstrated significant predictive ability in conjunction with the SCS Common Humanity scale scores. Chapter 5 entails an in-depth discussion of these findings, along with recommendations for future research, limitations, and implications for social change.

Interpretations of Findings

Research Question 1

In addressing RQ 1, "Is there a relationship between TSCS-2 and SCS scores and weight loss outcome in women after WLS?" I conducted several Pearson correlation analyses and identified one significant relationship. Specifically, I found a significant positive correlation between the common humanity subscale score of the SCS and weight loss outcome. This result suggests that as the sense of common humanity increases, so does weight loss. Neff (2003), the creator of the SCS, noted that this subscale measures camaraderie, a shared experience of personal failures, negative experiences, or suffering. The author highlighted that a sense of common humanity allows suffering to be better tolerated with less self-loathing and self-blame. Importantly, Neff suggested that a sense of common humanity may enable individuals facing failure or adversity to take more productive action.

Self-compassion has been found to be meaningful in motivating individuals after weight gain (Thogersen-Ntoumani et al., 2021). This finding may provide one explanation for the correlation observed in my study between common humanity and

weight loss. As previously stated, obesity is highly correlated with shame, eating pathology, lowered quality of life, and mental health issues (Abiri et al., 2022). There is a pattern of compounded internalized stigma due to obesity and suboptimal weight loss or weight regain post-surgery (Himmelstein et al., 2022). This finding is seen in other studies as well, which have shown that the experience of weight regain compounds these issues, leaving patients who have regained weight with deepening mental health issues, disordered eating, shame, self-loathing, and hopelessness (Furtado et al., 2023; Tolvenen, 2022). Shame and self-blame often lead to isolation and a resistance to asking for support, making a sense of community an essential part of healing the trauma of internalized stigma (Brownstone et al., 2023). This is in alignment with my finding that self-compassion, especially the common humanity dimension, positively impacts one's experience of weight loss.

Neff (2023) also suggested that it is often the case that when individuals perceive that they have failed at something, they also often perceive that others have succeeded. This description may offer additional insight into the mechanism behind the impact of self-compassion in this study. Setbacks are inevitable in every process of weight loss post-surgery, but some individuals may feel isolated as a result. Researchers have called this the "lonely struggle" of some WLS patients (Badorrek et al., 2023). A lack of self-compassion may inevitably allow a sense of personal lack and failure, potentially leading to regression back into maladaptive habits in order to cope with these feelings. As a general mandate, patients are expected to manage their lifestyle habits and monitor their weight post-surgery. But this process of monitoring weight can be challenging for a

person who has a history of obesity and dieting, potentially resulting in self-blame, shame, and generally less self-compassionate feelings (Brenton-Peters et al., 2021). A self-compassion-based intervention can reverse this trend and is correlated with healthier lifestyle behaviors such as exercise.

Another challenge is the feeling of stigma or judgment from medical practitioners, which impacts an obese person's avoidance of support from professionals (Dan & Kyle, 2020). Bariatric patients often feel judged by providers who care for them and frequently resist seeking support from their healthcare team when they have achieved suboptimal weight loss or have experienced weight regain (Lam et al., 2023). Thus, a cycle of shame, isolation, and weight regain is created, which may have been avoided with appropriate intervention. High levels of internalized weight bias prior to surgery are linked with continued mental health issues, emotional eating, and lowered levels of physical activity post-surgery (Braun et al., 2021). Self-compassion was found to decrease the impact of internalized stigma. Peer support, as an expression of common humanity, has been found to be particularly effective post WLS (Conceico et al., 2020). Many WLS patients identify a need for more support from others who share common experiences but are unable to access it. These findings are in alignment with the outcome of this study and reflect the importance of common humanity.

Despite the findings related to self-compassion, my research study showed no significant relationships between self-concept and weight loss outcomes. According to Rogers's self-concept theory, self-concept fuels behaviors. It was hypothesized that, for this reason, TSCS-2 scores would have a relationship with weight loss outcomes. In other

words, if one had a low self-concept, they would behave in alignment with internalized stigma and not take the necessary actions to lose weight or be more apt to regain it for the same reasons. However, this relationship was not found to be significant in my study. One possible reason for this phenomenon may be some people's perception of their own obesity. Studies show that some individuals who are obese do not perceive themselves in this way; it is not part of their self-concept (Robinson et al., 2020). As a result, the internalized shame and stigma associated with the negative psychosocial impacts of obesity have less impact. Therefore, it is possible that many of the participants who took part in the study did not perceive themselves in such a way that significantly influenced their self-concept or behavior. An alternate theory may lie in the link between self-compassion and self-concept, which will be discussed more thoroughly in relation to RQ 2.

Research Question 2

With regard to RQ2: Do TSCS-2 and SCS scores predict weight regain? The SCS subscale Common Humanity was shown to significantly predict the incidence of weight regain (see Table 5). Additionally, TSCS-2 scale scores for Academic/Work and Physical Self-Concept contributed to the prediction of weight regain when incorporated into the stepwise regression equation. Both of these scale scores enhanced the predictive ability of the Common Humanity scale scores in predicting weight regain. According to the outcomes of this study, a higher Academic/Work scale score influences weight regain negatively (i.e., a higher score was associated with less weight regained), while the "Physical Self-Concept" scale score impacted weight regain positively (i.e., a higher

score was associated with more weight regained).

According to Fitts and Warren (1996), the Academic/Work Self-Concept scale represents "how people perceive themselves in school or work settings, and how they believe they are seen by others in those settings" (p. 24). According to the authors, individuals who score highly on this scale tend to have the self-confidence to take on new challenges and tasks without becoming daunted and overwhelmed by initial failures. They are typically able to think in creative ways when approaching obstacles. They also tend to seek out mentors in new settings more than others. People with low scores in this area often tend to see failure in a new task as an indication of their incompetence and may have unrealistic expectations of themselves. A very low score on this scale may also be associated with a cognitive or depressive disorder. Consequently, one might expect that a high score on this scale could be more effective in achieving the daunting tasks of weight loss and maintenance, while those scoring in a low range might be expected to become more overwhelmed by weight loss obstacles. Studies show that weight regain occurs more often in individuals with emotional dysregulation, emotional eating, and perceived low self-discipline (Martin-Fernandez et al., 2022). Given the forces of internalized stigma, it follows that a person who experiences a setback will more easily perceive this as a failure and be less resilient. Conversely, research shows that quality of life is correlated with physical activity and job satisfaction (Fang et al., 2019).

The Physical Self-Concept Score had a positive impact on weight regain. This implies that when considering a participant's SCS Common Humanity score and the TSCS-2 Physical Self-Concept score, the higher the Physical Self-Concept scale score,

the more weight was regained. According to Fitts and Warren (1996), the Physical Self-Concept scale represents "the individual's view of his or her body, state of health, physical appearance, skills, and sexuality" (p. 23). They note that this scale is highly correlated with measures of self-esteem. High scores on this scale tend to signify a positive view of oneself in the above areas. Low scores tend to indicate body image distortions or unrealistic expectations of how their body should look compared with others. The authors note that females with low scores in Physical Self-Concept tend to have mental health issues, including depression and eating disorders.

This outcome seems to contrast with previous research. One might expect a person with low scores on this scale to be more impacted by body image issues and low self-esteem and, therefore, be more apt to regain weight. This finding may result from anomalies in the data, as the participants in the study may not have been representative of the population in this area. This outcome suggests that more research needs to be done in this specific area. While this is an unexpected outcome, one could conceptualize scenarios in which this finding may be reasonable. For example, high physical self-concept scores are associated with a positive self-image/self-esteem. If an individual feels secure in their physical self-concept but chooses WLS for health reasons, they may not have the same degree of motivation to maintain their weight loss as someone whose self-image is based solely on their weight loss outcome.

Self-Concept Theory

The theoretical framework of this study was Carl Rogers's Self Theory (1959). Rogers proposed that all humans have a true self, which is their true nature and the part of

themselves that can self-actualize into the human being they are meant to be. This process of self-actualization, according to Rogers, is the coming together of how a person sees themselves and how they want to see themselves. Rogers notes that anxiety and psychological distress result from an individual's excessive space between their authentic, true self and their current perception of themselves. In order to bridge this gap and reach a place of self-actualization, a person must perceive themselves in alignment with their true self and also feel that others accept and validate them for who they are.

Rogers (1959) pointed out that the separation from one's true self can begin with negative messages in one's social environment. For obese individuals, this may initially include critical parents, friends, and even media, and continue throughout adulthood. This can cause distress and even mental health issues. Studies show that a significant percentage of WLS patients have been diagnosed with mental health issues such as emotional dysregulation and depression (Furtado et al., 2023; Mishali & Kisner, 2022). According to Rogers, the self-actualization process is made possible when individuals begin to accept themselves and develop regard for themselves. This process, according to Rogers, is aided by positive feedback, acceptance, and validation from others. This is in alignment with self-compassion and, specifically, with Common Humanity. Internalized stigma can be effectively addressed in a group setting, creating that sense of common humanity and enabling individuals to "deprogram" stigma by connecting to others (Brownstone et al., 2023).

I found no significant correlation between weight loss outcomes and self-concept in regard to RQ1. However, it is perhaps notable that the subscale "Common Humanity"

of the SCS was correlated. Based on previous research, Common Humanity is shown to provide individuals with a sense of being understood, validated, and accepted. These are the very elements at play in reaching self-actualization and a positive self-concept. It is also notable that anxiety and other mental health issues, identified as adjuncts to a lower self-concept and being in misalignment with one's true self, are also identified with weight regain post-surgery.

Limitation of the Study

There were several limitations that may have impacted the outcomes of this study. External validity, or the degree to which the findings are generalizable to the overall population, may have been affected by a few factors. First, the survey was published online only. Participants were exposed to the survey in two ways: through social media platforms such as Facebook and Reddit, and through survey companies Survey Swap and Qualtrics, both of which have large participant pools. It is assumed that participants from both routes met the criteria for the survey, as the survey began with screening questions aimed at collecting only participants who met the criteria. However, the study may have been impacted by selection bias, as all participants needed to have access to a computer and be computer literate. Another possible limitation could be the presence of distinct characteristics inherent in people who frequently engage in social media or participate in surveys, which may not be representative of the general population. Additionally, the exclusion criteria included men, children, individuals who have undergone two surgeries, and anyone residing outside the United States. Consequently, the study results may not be generalizable to these other groups.

There may also have been threats to internal validity. The survey was designed by combining two previously validated survey instruments: the TSCS-2 and SCS. These questions from both scales were posted one right after another in order to complete the survey. The combining of the scales and the resulting survey's length could have potentially impacted the outcome by inducing a type of survey fatigue. The effect of completing them both together concurrently has an unknown impact as it has not been documented to have been done before. In addition, my survey had a total of 118 questions as a result of using the long forms of both scales. This number of questions could have caused fatigue among some of the participants, affecting their accuracy in answering towards the end of the survey. I rejected surveys that were completed in less than four minutes as a cut-off point when collecting data. The scales themselves had no minimum time to complete the forms as a guide, so this timeframe was chosen as the minimum. There were surveys that were kept which were completed in far less than the average time frame. These may not have been completed mindfully and, therefore, may skew the outcome of the survey.

Another possible limitation of the study may have been its cross-sectional nature. The data represented the participants' mindset on the day of the survey itself. There is no way to gauge if their answers on that particular day were impacted by other influences. It may have been more informative if I were able to provide the survey to the same participants at intervals. Ideally, prior to surgery, and at one year and five years post-surgery, to measure their self-compassion and self-concept baseline and trajectory throughout the process. This information may have indicated whether the participants'

level of self-concept or self-compassion was influenced by the process itself or by innate factors. Additionally, substantial demographic information was not collected as part of the study. Basic demographics regarding inclusion criteria were obtained, including sex, adult status, weight, and surgery information. It would have been enriching to our data to, for example, isolate specific age groups, cultures, or locations in order to identify any differences in outcomes when accounting for these factors.

Implications for Social Change

There are currently no identified mandates for mental health treatment and support after weight loss surgery in the United States, though many insurance companies suggest this to patients (ASMBS). There are often mandates for one or two counseling sessions prior to surgery at the behest of insurance companies and surgeons. Studies suggest that weight loss surgery participants often feel that long-term external support is lacking post-surgery (Spreckley et al., 2021). Additionally, there are currently no set interventions in place to approach the issue of weight regain post-weight loss surgery (Abel et al., 2022).

The outcomes of this study indicate the significant impact of self-compassion. Specifically, the data suggests that Common Humanity, or the connection to and validation from others, and a sense of self-kindness (the opposite of self-loathing and self-stigmatization), are important elements of weight loss after WLS. This finding is in alignment with various studies that have suggested that more mental health support is necessary post-surgery (Abel et al., 2022; Badorreck et al., 2022; Billing-Bullen, 2021).

There are many obstacles to accessing mental health therapy and support groups,

including cost, accessibility, lack of support by peers, and self-stigma (Barley et al., 2023; Ogden & Quirke-McFarlane, 2023). Despite these obstacles, the information gleaned from this study may be useful. For instance, knowledge of the impactful role of self-compassion and self-concept, particularly self-kindness and connection to others, would be helpful to share with WLS participants in general. Armed with this knowledge, surgeons and general practitioners could provide helpful suggestions for patients who cannot or will not attend group or in-person counseling. They would be able to access other sources of information, including books and media, and be encouraged to reach out for support personally.

Additionally, it has been established that many individuals who achieve suboptimal weight loss or regain weight isolate themselves out of fear of judgment or bias from their providers (Lam et al., 2023). Providers could become more aware of their biases and the special needs of these patients, developing a necessary open and supportive relationship. Rogers's (1953) theory identifies validation, positive regard, and support from others as variables in the path toward congruence and self-acceptance. Research shows that WLS patients feel they would benefit from more support and communication from their providers throughout the weight loss journey (Grilo et al., 2022 and Lam, 2023). Medical providers responsible for follow-up and maintenance following WLS could potentially develop treatment interventions that take these issues into account.

Recommendations for Future Research

The findings of this study are aligned with other studies that have noted the

importance of increased support post-WLS. It might be helpful to revise this study to include either the shorter forms of the scales or to vary the order of the scales in order to increase reliability. Based on my study findings and existing literature, I would recommend creating an intervention designed to utilize the elements of self-compassion and self-concept discussed here. Issues of internalized stigma, pervasive among individuals who have faced both obesity and sub-optimal weight loss, could be very appropriately addressed through group work and finding a common humanity. Interventions should also pay special attention to the issues of avoidance, perception of practitioner judgment, and self-loathing/blame in order to create a safe and effective therapeutic relationship. A pilot study could be utilized to test the validity of this approach. Additionally, the link between physical self-concept and weight loss warrants more intensive study to identify the possible mechanisms influencing this outcome.

Conclusion

The purpose of this study was to aid in understanding the reasons for sub-optimal weight loss and the regaining of weight after WLS. There can be no denying that WLS impacts many, and this study was not meant to detract from the evidence of this. In fact, the outcomes of this study could potentially help individuals who have undergone WLS avoid weight regain. The outcomes of this study could also potentially assist medical and mental health professionals in effectively supporting individuals post WLS. This is important because the impact of weight regain on the lives of individuals who face it can be devastating. The psychosocial struggles brought on by obesity are often compounded by regain, leaving some isolated and ashamed.

As discussed, research on self-compassion has noted relationships with varied body and self-concept related areas. My research adds to this by directly linking the aspect of self-compassion (known as common humanity) with bariatric surgery outcomes. Common humanity is a specific aspect of self-compassion that is linked to a sense of being understood by others, supported, and aided by others who share a common experience. Support groups and bariatric mental health counseling are not currently mandated or even strongly encouraged for patients post-surgery. This study may provide an exciting clue to aid in managing weight regain, and my hope is that additional research will be conducted to further explore this idea. Additionally, increased mandates for post-surgery emotional support seem justified by this study and multiple studies preceding it. The outcomes of my study justify the medical and psychological community's need to address this issue in a more substantial manner.

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Appendix A: Survey Questions

Have you had weight loss surgery?
Was your weight loss surgery under ten years ago?
Was your weight loss surgery over two years ago?
Are you a female?
Are you over the age of 18?
What was your weight on the date of your surgery?
What was your lowest weight after surgery?
What is your current weight?

How I Typically Act Toward Myself in Difficult Times

Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner.

Almost Never				Almost Always
1	2	3	4	5

_____ 1. I'm disapproving and judgmental about my own flaws and inadequacies.
_____ 2. When I'm feeling down I tend to obsess and fixate on everything that's wrong.
_____ 3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.
_____ 4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.
_____ 5. I try to be loving towards myself when I'm feeling emotional pain.
_____ 6. When I fail at something important to me I become consumed by feelings of inadequacy.
_____ 7. When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am.
_____ 8. When times are really difficult, I tend to be tough on myself.
_____ 9. When something upsets me I try to keep my emotions in balance.
_____ 10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.
_____ 11. I'm intolerant and impatient towards those aspects of my personality I don't like.
_____ 12. When I'm going through a hard time, I give myself the caring and tenderness I need.

_____ 13. When I'm feeling down, I tend to feel like most other people are probably happier than I am.
_____ 14. When something painful happens I try to take a balanced view of the situation.
_____ 15. I try to see my failings as part of the human condition.
_____ 16. When I see aspects of myself that I don't like, I get down on myself.
_____ 17. When I fail at something important to me I try to keep things in perspective.
_____ 18. When I'm really struggling, I tend to feel like other people must be having an easier time of it.
_____ 19. I'm kind to myself when I'm experiencing suffering.
_____ 20. When something upsets me I get carried away with my feelings.
_____ 21. I can be a bit cold-hearted towards myself when I'm experiencing suffering.
_____ 22. When I'm feeling down I try to approach my feelings with curiosity and openness.
_____ 23. I'm tolerant of my own flaws and inadequacies.
_____ 24. When something painful happens I tend to blow the incident out of proportions.
_____ 25. When I fail at something that's important to me, I tend to feel alone in my failure.
_____ 26. I try to be understanding and patient towards those aspects of my personality I don't like.

This scale asks you to describe how you feel about yourself. There are no right or wrong answers, so please just describe yourself as honestly as you can. When you are ready to begin, read each statement and decide how well it describes you according to the scale below. Read each statement carefully. Then circle the number that shows your answer. Circle only one number for each statement, using this scale:

1 = Always False 2 = Mostly False 3 = Partly False and Partly True 4 = Mostly true 5 – Always True

1 2 3 4 5 1. I am an attractive person.
1 2 3 4 5 2. I am an honest person.
1 2 3 4 5 3. I am a member of a happy family.
1 2 3 4 5 4. I wish I could be more trustworthy.
1 2 3 4 5 5. I do not feel at ease with other people.
1 2 3 4 5 6. Math is hard for me.
1 2 3 4 5 7. I am a friendly person.
1 2 3 4 5 8. I am satisfied with my moral behavior.

1	2	3	4	5	9. I am not as smart as the people around me.
1	2	3	4	5	10. I do not act the way my family thinks I should.
1	2	3	4	5	11. I am just as nice as I should be.
1	2	3	4	5	12. It is easy for me to learn new things.
1	2	3	4	5	13. I am satisfied with my family relationships.
1	2	3	4	5	14. I am not the person I would like to be.
1	2	3	4	5	15. I understand my family as well as I should.
1	2	3	4	5	16. I despise myself.
1	2	3	4	5	17. I don't feel as well as I should.
1	2	3	4	5	18. I do well at math.
1	2	3	4	5	19. I am satisfied to be just what I am.
1	2	3	4	5	20. I get along well with other people.
1	2	3	4	5	21. I have a healthy body.
1	2	3	4	5	22. I consider myself a sloppy person.
1	2	3	4	5	23. I am a decent sort of person.
1	2	3	4	5	24. I try to run away from my problems.
1	2	3	4	5	25. I am a cheerful person.
1	2	3	4	5	26. I am a nobody.
1	2	3	4	5	27. My family would always help me with any kind of trouble.
1	2	3	4	5	28. I get angry sometimes.
1	2	3	4	5	29. I am full of aches and pains.
1	2	3	4	5	30. I am a sick person.
1	2	3	4	5	31. I am a morally weak person.
1	2	3	4	5	32. Other people think I am smart.
1	2	3	4	5	33. I am a hateful person.
1	2	3	4	5	34. I am losing my mind.
1	2	3	4	5	35. I am not loved by my family.
1	2	3	4	5	36. I feel that my family doesn't trust me.
1	2	3	4	5	37. I am not good at the work I do.
1	2	3	4	5	38. I am mad at the whole world.
1	2	3	4	5	39. I am hard to be friendly with.
1	2	3	4	5	40. Once in a while I think of things too bad to talk about.
1	2	3	4	5	41. Sometimes when I am not feeling well, I am cross.
1	2	3	4	5	42. I am neither too fat nor too thin.
1	2	3	4	5	43. I'll never be as smart as other people.
1	2	3	4	5	44. I like to work with numbers.
1	2	3	4	5	45. I am as sociable as I want to be.
1	2	3	4	5	46. I have trouble doing the things that are right.
1	2	3	4	5	47. Once in a while I laugh at a dirty joke.
1	2	3	4	5	48. I should have more sex appeal.
1	2	3	4	5	49. I shouldn't tell so many lies.
1	2	3	4	5	50. I can't read very well.
1	2	3	4	5	51. I treat my parents as well as I should.
1	2	3	4	5	52. I am too sensitive about the things people in my family say.

1	2	3	4	5	53. I should love my family more.
1	2	3	4	5	54. I am satisfied with the way I treat other people.
1	2	3	4	5	55. I ought to get along better with people.
1	2	3	4	5	56. I gossip a little at times.
1	2	3	4	5	57. Sometimes I feel like swearing.
1	2	3	4	5	58. I take good care of myself physically.
1	2	3	4	5	59. I try to be careful about my appearance.
1	2	3	4	5	60. I am true to my religion in my everyday actions.
1	2	3	4	5	61. I sometimes do very bad things.
1	2	3	4	5	62. I can always take care of myself in any situation.
1	2	3	4	5	63. I do as well as I want to at almost any job.
1	2	3	4	5	64. I feel good most of the time.
1	2	3	4	5	65. I take a real interest in my family.
1	2	3	4	5	66. I try to understand the other person's point of view.
1	2	3	4	5	67. I'd rather win a game than lose one.
1	2	3	4	5	68. I am not good at games and sports.
1	2	3	4	5	69. I look fine just the way I am.
1	2	3	4	5	70. I do not know how to work well.
1	2	3	4	5	71. I have trouble sleeping.
1	2	3	4	5	72. I do what is right most of the time.
1	2	3	4	5	73. I am no good at all in social situations.
1	2	3	4	5	74. I solve my problems quite easily.
1	2	3	4	5	75. I am a bad person.
1	2	3	4	5	76. I am satisfied with my relationship with God.
1	2	3	4	5	77. I quarrel with my family.
1	2	3	4	5	78. I see something good in everyone I meet.
1	2	3	4	5	79. I find it hard to talk with strangers.
1	2	3	4	5	80. Sometimes I put off until tomorrow what I ought to do today.
1	2	3	4	5	81. It's easy for me to understand what I read.
1	2	3	4	5	82. I have a lot of self-control.

Appendix B: Social Media Post

*****Participants needed for weight loss surgery outcomes study*****

Are you an adult female who has had weight loss surgery within the past two to ten years? If you are, please take the time to respond to a 15-25 minute survey!
Your answers will provide needed insight into any relationship between self-concept (the way one sees themselves) and self-compassion (the way one relates to themselves) and bariatric (weight loss) surgery outcomes. This may lead to interventions which help people cope with unsatisfying weight loss or weight gain and may even help prevent it.
The study is anonymous, you will be asked to give no identifying information, so your answers will remain private.
There is very minimal risk of harm involved in taking part in this study. In fact, you can withdraw at any point during the survey if you should choose.

If you are interested in taking part in the study, please use the following link:

XXXXXXXXXXXXXX

Appendix C: Permission Letter and Original Self-Compassion Scale

To Whom It May Concern:

Dr. Kristin Neff grants permission to use the Self-Compassion Scale (Neff, 2003) for any purpose whatsoever, including research, clinical work, teaching, etc. Please cite:

Neff, K. D. (2003). Development and validation of a scale to measure self-compassion. *Self and Identity*, 2, 223-250.

Permission is also given to translate the Self-Compassion Scale using the analytic approach to validate the factor structure that was established in:

Neff, K. D., Tóth-Király, I., Yarnell, L., Arimitsu, K., Castilho, P., Ghorbani, N.,… Mantios, M. (2019). Examining the Factor Structure of the Self-Compassion Scale using exploratory SEM bifactor analysis in 20 diverse samples: Support for use of a total score and six subscale scores. *Psychological Assessment, 31 (1), 27-45.*

Best wishes,

Kristin Neff, PhD

Appendix D: TSCS Permission

Rights & Permissions

Certificate of Limited-use License

License #: CON325

Date: May 3, 2021

Principal Investigator's name and title: Christine Curry-Tuthill, PhD Student

Name of the Assessment: Tennessee Self-Concept Scale, Second Edition (TSCS:2)

Permitted number of uses: 172 uses

Description of the study:

"The Relationship Between Self-Concept and Self-Compassion Scores and Weight-Loss Surgery Outcomes."

Use of the TSCS:2 Adult Form

Reference terms dated 26Apr'21.

Method of administration:

Administration and Scoring via a secure, password-protected online environment with database-style sc

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