Summer 8-2022

Age-Based Comparison of the Motivations, Self-Efficacy, and Quality of Life in Bariatric Surgery Candidates

Sheena K. Bling

AGE-BASED COMPARISON OF THE MOTIVATIONS, SELF-EFFICACY, AND QUALITY OF LIFE IN BARIATRIC SURGERY CANDIDATES

by

Sheena K. Bling, B.S., R.D.N.

A Thesis Presented in Partial Fulfillment
of the Requirements for the Degree
Master of Science

COLLEGE OF HUMAN ECOLOGY
LOUISIANA TECH UNIVERSITY

August 2022

LOUISIANA TECH UNIVERSITY

GRADUATE SCHOOL

April 20, 2022
Date of thesis defense

We hereby recommend that the thesis prepared by

Sheena K. Bling, B.S., R.D.N.

entitled **Age-Based Comparison of the Motivations, Self-Efficacy, and Quality of Life in Bariatric Surgery Candidates**

be accepted in partial fulfillment of the requirements for the degree of

Master of Science in Nutrition & Dietetics

Vicky L. Green
Vicky L. Green
Supervisor of Thesis Research

Ethel N. Jones
Ethel G. Jones
Head of Human Ecology

Thesis Committee Members:
Simone P. Camel
Mary C. Fontenot

Approved:

Gary A. Kennedy
Dean of Applied & Natural Sciences

Approved:

Ramu Ramachandran
Dean of the Graduate School

GS Form 13
(01/20)

ABSTRACT

Overweight and obesity is a worldwide epidemic that is negatively impacting individuals' health and quality of life. Much research has been conducted regarding the effects of diet and exercise for weight loss, with current research providing evidence in favor of bariatric surgery for severely obese adults and children. The purpose of this project is to understand participants motivating factors, anticipated post-surgery success and anticipated changes in physical, social and mental health. The objectives were to describe participants' motivations for pursuing bariatric surgery, describe participants level of confidence with postsurgical diet implementation, and compare participants anticipated post-surgery changes in quality of life and compare to current expectations. Using a qualitative research approach, seventeen male and female participants between 25 and 41were individually interviewed. The motivating factors found were health and wellness, comorbidities, family and children, and physical fitness. Participants confidence in their abilities was characterized by practicing postsurgical diet changes, changing presurgical eating habits and work-life balance. Finally, quality of life themes included activities of daily living, enjoying extracurricular activities, improved physical appearance, social eating, attending special events, greater willingness to participate socially and improved anxiety and depression and positive self-perception. Many concepts were found to be overlapping throughout many of the themes which were fear and frustration and energy and stamina. Overall, the small sample size limits the

generalizability of the results. The current study provides beneficial information for registered dietitians and related healthcare professionals to better understand their patient population and provide recommendations that best meets the patient's needs.

APPROVAL FOR SCHOLARLY DISSEMINATION

The author grants to the Prescott Memorial Library of Louisiana Tech University the right to reproduce, by appropriate methods, upon request, any or all portions of this Thesis. It was understood that "proper request" consists of the agreement, on the part of the requesting party, that said reproduction is for his personal use and that subsequent reproduction will not occur without written approval of the author of this Thesis. Further, any portions of the Thesis used in books, papers, and other works must be appropriately referenced to this Thesis.

Finally, the author of this Thesis reserves the right to publish freely, in the literature, at any time, any or all portions of this Thesis.

Author_____

Date _____

G.S. Form 14
(5/03)

TABLE OF CONTENTS

ABSTRACT iii

APPROVAL FOR SCHOLARLY DISSEMINATION v

LIST OF TABLES x

ACKNOWLEDGMENTS xii

CHAPTER 1 INTRODUCTION 1

Statement of the Problem 2

Purpose 3

Research Objectives 4

Justification 4

CHAPTER 2 REVIEW OF LITERATURE 6

Obesity 7

Comorbidities Associated with Obesity 8

Type 2 Diabetes Mellitus 9

Cardiovascular Diseases 9

Diet and Lifestyle Intervention for Obesity 10

Bariatric Surgery 11

Sleeve Gastrectomy 12

Roux-en-Y Gastric Bypass 13

Adjustable Gastric Banding 15
Duodenal Switch Gastric Bypass 16
Post-Surgery Bariatric Diet 17
Bariatric Surgery in Adolescent Population 19
Age and Bariatric Surgery 20
Psychological Burden of Obesity 21
Quality of Life Before and After Surgery 23
Motivation and Expectations 24
Self-Efficacy for Weight Loss 25
Summary 27
CHAPTER 3 METHODOLOGY 28
Sample and Subjects 28
Data Collection Instruments 29
Data Collection Procedure 30
Data Analysis 32
CHAPTER 4 RESULTS 34
Demographics 35
Motivating Factors 36
Health and Wellness Theme 37
Comorbidities Theme 39
Family and Children Theme 42
Physical Fitness Theme 44
Failed Weight Loss Attempts Theme 45

Anticipated Post-Surgery Success 47
Increased Diet Confidence Post-surgery.....48
Implementing Postsurgical Diet Changes Theme.....48
Decreased Diet Confidence.....51
Changing Presurgical Eating Habits Theme.....51
Work-Life Balance Theme 53
Post-Surgery Quality of Life.....55
Perceived Physical Changes 56
Activities of Daily Living Theme.....57
Extracurricular Activities Theme.....60
Physical Appearance Post-Surgery Theme.....62
Anticipated Impact of Surgery on Social Factors.....64
Social Eating Theme.....65
Special Events Theme.....66
Willingness to Participate Theme 68
Post-Surgery Mental Health.....70
Post-Surgery Anxiety and Depression Theme.....71
Self-Perception Theme.....73
Other 75
Cultural Background Theme.....76
Fear and Frustration Theme.....78
Energy and Stamina 80
CHAPTER 5 DISCUSSION.....81

Motivating Factors 82
Success with Diet Implementation Post-Surgery 85
Changes in Physical Abilities 87
Changes in Physical Appearance 87
Social Eating and Special Events 88
Willingness to Participate in Social Activities 89
Anxiety/Depression 90
Self-Perception 90
Cultural Impact 91
Fear and Frustration 92
Energy and Stamina 93
Implication of Findings 93
Future Research 94
Strengths and Limitations 94
Conclusion 95
APPENDIX A APPROVAL FORMS 96
APPENDIX B SURVEY INSTRUMENTS 101
REFERENCES 107

LIST OF TABLES

Table 1 *Demographic Data (N=17)*.....36

Table 2 *Themes Regarding Motivating Factors*.....37

Table 3 *Motivating Factors - Health and Wellness Theme*.....39

Table 4 *Motivating Factors - Comorbidities Theme*.....41

Table 5 *Motivating Factors - Family and Children Theme*.....43

Table 6 *Motivating Factors - Physical Fitness Theme*.....45

Table 7 *Motivating Factors- Failed Weight Loss Attempts Theme*.....47

Table 8 *Themes Related to Diet Confidence*.....48

Table 9 *Increased Diet Confidence- Implementing Postsurgical Diet Changes Theme*.....50

Table 10 *Decreased Diet Confidence - Changing Presurgical Eating Habits Theme*.....52

Table 11 *Decreased Diet Confidence - Work-Life Balance Theme*.....55

Table 12 *Themes Regarding Perceived Physical Changes*.....56

Table 13 *Physical Abilities - Activities of Daily Living Theme*.....58

Table 14 *Physical Abilities - Extracurricular Activities Theme*.....61

Table 15 *Anticipated Physical Appearance Post-Surgery Theme*.....63

Table 16 *Themes Regarding Anticipated Impact of Surgery on Social Factors*.....64

Table 17 *Impact on Social Factors- Social Eating Theme*.....66

Table 18 *Impact on Social Interactions - Special Events Theme*.....67

Table 19 *Social Interactions - Willingness to Participate Theme*.....69

Table 20 *Post-Surgery Mental Health* 70

Table 21 *Mental Health Post-Surgery Anxiety and Depression Theme*.....72

Table 22 *Mental Well-Being – Self-Perception Theme*.....74

Table 23 *Other Themes* 76

Table 24 *Cultural Background Theme* 77

Table 25 *Fear and Frustration Theme*.....79

Table 26 *Energy and Stamina Theme* 80

ACKNOWLEDGMENTS

First, I would like to thank Dr. Green for her endless support throughout this journey. Whether it was my frantic late-night emails or hiccups that arose in my research process, she was always an email away and met each situation with kindness and patience. Thank you for always pushing me to become a little bit better with each draft of my thesis. Additionally, thank you to my remaining committee members, Dr. Fontenot and Dr. Camel for sharing your deep insight and guidance throughout this process.

I would also like to thank Doctors Hospital of Manteca and the Weight Loss Surgery Department for allowing me to conduct this research study. None of this would have been possible without your support and for that I am extremely grateful.

Finally, I would like to thank my Mom and Dad for their support and words of encouragement in moments where things felt very uncertain. Thank you for always believing in me, making sure I was fed and listening to me talk about my research. Without your continued support, I would not be where I am today.

CHAPTER 1

INTRODUCTION

Obesity has become the most prominent health condition in the US, affecting individuals of all ages, genders and ethnicities (Hales et al., 2017). Many developing countries across the world are seeing the prevalence of young adults being overweight and obese reaching rates of 28% and 12%, respectively (Poobalan & Aucott, 2016). Adult obesity rates in the United States have followed a similar trend, increasing significantly since 1999 (Hales et al., 2017). The direct effects of increasing weight have influenced the development of various comorbidities such as hypertension, obstructive sleep apnea, type 2 diabetes, and cardiovascular disease. Changes in environmental and social factors have led to the increased prominence of obesity. In addition to the stigma and social pressures that accompany being overweight, individuals must learn to manage the associated health conditions (Ells et al., 2015). Weight loss is encouraged to relieve these pressures and improve quality of life. The stigma and social pressures are also considered to be strong motives for weight loss (Santos et al., 2017). Research has shown that individuals who achieve a weight loss of five percent of their total body weight have improved health and reduced risk for comorbidities (Williamson et al., 2015).

A variety of strategies and procedures are available for individuals who are attempting to lose weight. Non-surgical options include diet modifications and exercise (Aksungar et al., 2017). Diet modifications include alterations in the macronutrient

composition (low fat, low carbohydrate, high protein), total calories consumed, or timing of meals (Ells et al., 2015). Depending on the degree of obesity and the presence of comorbidities, bariatric surgeries are also available to facilitate significant weight loss (Inge et al., 2016). Bariatric surgery has become an increasingly common procedure over the past 10 years as some are performed laparoscopically, resulting in significant postoperative health improvements (American Society for Metabolic and Bariatric Surgery, 2014). Current research supports the use of bariatric surgery to help achieve weight loss, comorbidity reduction and improve overall health in adults as well as adolescents and young adults.

Statement of the Problem

The serious and long-lasting health concerns that accompany obesity create a community-wide and worldwide health care dilemma (Horne et al., 2015). Beginning at the age of 20 years, it is noted that obesity rates begin to trend upwards, peaking for most individuals around the ages of 50-65 years old (Chooi et al., 2019). There are many diets and weight loss programs advertised to the public as perfect weight loss solutions. A large body of research has been conducted in the area of obesity and weight management, comparing the different interventions to determine the most effective and sustainable option. According to Santos (2017), 40% of the general adult population has attempted to lose weight within the last five years, with most attempts occurring in overweight and obese individuals. Weight regain is common following a weight loss attempt and is especially common in overweight/ obese population (Montani et al., 2015). These individuals often go through periods of weight cycling, where weight is intentionally lost as a result of an individual’s efforts and is then regained once the dieting period is

complete. Lifestyle and behavioral intervention for weight loss in severely obese individuals was found to have 5-8% improvement in weight and comorbidities (Jakobsen et al., 2018). Therefore, it is important to select weight loss strategies that ensure the long-lasting effects of weight loss and comorbidity reduction to prevent obesity rates from continuing to increase (Montani et al., 2015).

It is well known that bariatric surgery can provide beneficial long-term results across various age groups. However, patients' expectations of surgery tend to stretch far beyond the realistic outcomes. A study conducted by Homer (2016) looked at a group of 18 bariatric surgery candidates aged 30-61years with the goal of understanding the expectations and experiences prior to undergoing surgery. The majority of participants expected an immediate physical change, elimination of comorbidities, increased self-confidence and a sense of normalcy. However, many of these patients did not fully understand or accept their personal role in achieving their desired results (Homer et al., 2016). This disconnect highlights the importance of ensuring adequate support and education for patients before and after surgery. As bariatric surgery becomes increasingly common across all age groups, few studies have yet to fully assess patient's self-efficacy in terms of diet and weight loss as well as the psychological aspects of surgery in younger adult populations.

Purpose

The purpose of this project is to preoperatively identify participants' motivations for pursuing bariatric surgery and analyze their current and anticipated self-efficacy and quality of life as it relates to age.

Research Objectives

1. To describe the characteristics of the bariatric surgery population in terms of age, gender, BMI, type of surgery and comorbidities.
2. To compare and contrast the common motivating factors prompting the decision to undergo bariatric surgery among different age groups.
3. To describe participants' confidence in their abilities to implement and maintain the post-surgery diet recommendations after surgery among different age groups.
4. To compare and contrast the pre-surgery and anticipated post-surgery perception of physical, social and mental well-being among different age groups.

Justification

With a significant proportion of the population struggling to manage their weight, it is important to establish evidence-based weight loss strategies for individuals attempting to lose weight and achieve healthier versions of themselves. While behavior and lifestyle modifications are often the preferred method for weight loss, many individuals remain unsuccessful at achieving and maintaining weight loss. Two post-surgery follow-up studies confirmed the benefits of bariatric surgery in helping to induce significant long term weight loss and reduce mortality rates when compared to obese nonsurgical patients (Maciejewski et al.,2016; Arterburn et al., 2015). A growing body of research has focused on the outcomes, benefits and safety of bariatric surgery in adolescents starting at the age of eight up to eighteen years of age (Durkin & Desai, 2017; Beamish & Reinehr, 2017; Paulus et al., 2015). The adult population has also been

extensively researched for many years, providing support for safe and effective use in adults age 30 and above (Susmallian et al., 2019; Gonzalez-Heredia et al., 2015). With severe obesity becoming increasingly common in young adults, a greater number of bariatric surgery candidates are between the ages of 20 and 30. However, minimal research is available analyzing the quality of life, self-efficacy and motivation for surgery in this specific population. This study will provide an important steppingstone towards the future of best practice for successful bariatric surgeries in young adults.

CHAPTER 2

REVIEW OF LITERATURE

The prevalence of individuals who are overweight or obese is steadily increasing (Hales et al., 2017). According to the World Health Organization, since 1975 obesity prevalence has tripled from 4% to 18% in 2016, indicating an urgent need for a solution (World Health Organization, 2020). In the past, obesity was thought to be influenced primarily by caloric imbalances. However, research has demonstrated that obesity is significantly more complex in that environmental, physical, and genetic factors play a significant role. (American Society of Metabolic and Bariatric Surgery, n.d.; World Health Organization 2020). Obesity is affecting populations worldwide and is contributing to increased presence of health problems. A significant number of deaths and hospitalizations are attributed to excessive weight (World Health Organization, 2020). From diabetes and coronary diseases to other metabolic disorders, the health and quality of life of Americans is declining (Ells et al., 2015; Slagter et al., 2015). Recent statistics show 39.8% of adults in the United States are obese. Obesity trends differ by state, with a majority of states experiencing obesity rates at or above 35% (Hales et al., 2017). The comorbidities and health risks that occur along with obesity have put a strain on the health status of the world (Montani et al., 2015). In hopes of combating the obesity epidemic, there has been a push for programs, diets and lifestyle changes that will lead to weight loss (Ells et al., 2015).

Obesity

Obesity is a chronic condition that is clinically defined by a body mass index (BMI) exceeding 30 kg of body weight/height m^2 (American Society of Metabolic and Bariatric Surgery, n.d). For adults, BMI is calculated using weight and height and indirectly measures the level of body fat in an individual. BMI classifications were determined to allow for interpretation of the calculated amount. The normal range for BMI is 18.5 kg/m^2 to less than 25 kg/m^2. A BMI between 25 kg/m^2 and less than 30 kg/m^2 is considered overweight. The BMI range for obesity is 30 kg/m^2 and higher. Subcategories exist within the obesity classification to further specify severity. If BMI exceeds 30 kg/m^2 but is less than 35 kg/m^2 it is considered Class 1 obesity. Class 2 obesity is diagnosed when BMI is above 35 kg/m^2 but less than 40 kg/m^2. Class 3, or severe obesity occurs when BMI exceeds 40 kg/m2 (Centers for Disease Control and Prevention, 2020a).

Fat accumulation can occur in two general areas of the body. Central obesity or intra-abdominal obesity is the accumulation of fat around the abdomen, often referred to as android body shape. Deposition of fat in the hips and buttocks is called peripheral obesity, also known as gynoid body shape. The location of fat deposition correlates with the risk of disease. Those with central obesity are at significantly higher risk for disease (Aras et al., 2015). Central obesity exacerbates the effects of excessive weight as it causes adipocytes to secrete biochemical factors that create a toxic environment, encouraging the development of disease (Supriya et al., 2018). Excess weight is linked to health complications such as Type 2 diabetes, inflammation, and metabolic syndrome (Aras et al., 2015). Effects of these comorbidities are amplified as BMI continues to

increase. Studies have indicated that as weight and comorbidities increase, health related quality of life decreases, further supporting the push for weight loss (Antoni, 2017; Aras et al., 2015; Slagter et al., 2015). Over the years, overweight and obesity has become a devastating chronic disease with limited strategies for prevention and resolution (Lager et al., 2017).

Comorbidities Associated with Obesity

The presence of obesity increases the risk for many cardiometabolic conditions, also known as comorbidities. These conditions include Type 2 diabetes, cardiovascular disease, hypertension as well as colorectal, prostate, and breast cancer. Studies have shown a direct correlation between BMI and comorbidity development (Seo et al., 2015). Pantalone (2017) conducted a study looking at the prevalence of obesity and comorbidities in patients 20 years of age and older. It was determined that the prevalence of prediabetes, Type 2 diabetes, hypertension, and coronary artery disease increased with each obesity category (Pantalone et al., 2017). The relationship between obesity and comorbidity development stems from the pathophysiology of obesity itself. In susceptible individuals, excess calorie intake is stored in the body as fat cells, also known as adipose tissue. This in turn creates an unhealthy/unfavorable environment in the body that fosters the development of comorbidities. Excessive adiposity that is sustained for long periods of time begins to interrupt the normal functioning of hormones and metabolic pathways in the body. As a result, comorbid conditions begin to develop (Lorenzo, 2019). Therefore, achieving modest weight loss of 5-10% helps induce improvement and/or remission of comorbidities (Ryan & Yockey, 2017).

Type 2 Diabetes Mellitus

The National Institute of Health defines diabetes as a chronic inability to regulate blood glucose levels. This could be due to insulin resistance and/or decreased production of insulin from the beta cells of the pancreas (Boles et al., 2017). The combination of obesity and Type 2 diabetes increases the risk for cardiovascular events and liver disease (Levelt et al., 2016). The presence of obesity itself promotes the development of insulin resistance within the body (Costanzo et al., 2015). Research conducted by Pantalone (2017) determined that the prevalence of both prediabetes and Type 2 diabetes increases from 12% at a BMI of 25 and increases to 30% in those with BMI greater than 40. A study conducted by Levelt (2016) looked at the differences in comorbid outcomes in lean and obese males with Type 2 diabetes. The authors were able to conclude the presence of a relationship between obesity and Type 2 diabetes as they found that insulin resistance and epicardial fat deposition was positively correlated in this population (Levelt et al., 2016). Both studies support the association between high BMI and Type 2 diabetes development. Therefore, the reduction of body fat by either bariatric surgery or lifestyle intervention improves the body's ability to regulate blood sugars.

Cardiovascular Diseases

As defined by the American Heart Association, cardiovascular disease (CVD) is an umbrella term that refers to multiple conditions such as coronary heart disease, heart failure, hypertension, stroke, atrial fibrillation, as well as heart attacks (American Heart Association, 2017). Significant evidence has been found to support the relationship between obesity and cardiovascular disease, identifying obesity as an independent risk factor for CVD. Obesity induces hemodynamic shifts such as increasing blood volume,

increasing heart rate, and increased blood pressure (Koliaki et al., 2019). The degree and duration of obesity plays an important role in CVD development and resulting morbidity and mortality (Ortega et al., 2016). The Cardiovascular Disease Lifetime Risk Pooling Project analyzed data from multiple studies, allowing for analyses across many variables. Researchers were able to compare the number of years lived with and without CVD events based on age and BMI. A total of 190,672 participants between the ages of 20 and 80 years were analyzed. It was found that middle-aged men and women who were overweight and obese were at greater risk for a CVD event and CVD death compared to those with a normal BMI. Similar results were seen in the younger age group but in the obese and morbidly-obese category. Overall, men and women within the normal range for BMI were able to live an average of 7.5 and 7.1 years longer without CVD (Khan et al., 2018).

Diet and Lifestyle Intervention for Obesity

The Obesity Guidelines published by the American Heart Association/ American College of Cardiology/ Obesity Society recommend that overweight and obese individuals should attempt weight loss through a comprehensive weight loss program for a minimum of six months (Webb & Wadden, 2017). Comprehensive programs provide tailored and consistent guidance for diet, lifestyle and behavioral interventions through group or one on one session with trained professionals (Webb & Wadden, 2017). Through multiple sessions, the goal is to induce weight loss by teaching sustainable weight loss techniques and providing accountability. Research has shown that individuals are able to lose 9-10% of their initial body weight by following a comprehensive program. However, following completion of the program, patients tend to regain about

one third of the weight lost (Webb & Wadden, 2017). Similar results were found in the Social Mobile Approaches to Reduce Weight (SMART) study which provided weight loss intervention via social platforms for 24 months (Godino et al., 2016). The intervention group had access to health coaches who provided continuous support with personalized diet and fitness plans. While the control group was only provided access to a basic health promoting website and a monthly newsletter. It was found that the intervention group achieved significant weight loss at both six and twelve months. However, the success of this weight loss and maintenance was not positively documented thereafter (Godino et al., 2016). A meta-analysis of the literature found that diet induced weight loss produced long term hormonal biochemical changes in the gut which in turn increased appetite resulting in weight regain (Lean & Malkova, 2016). Maintenance of weight loss is often difficult to obtain due to the obesogenic environments composed of inexpensive and readily available calorically dense foods in combination with physiological feedback mechanisms that try to counteract weight loss (Hall & Kahan, 2018). Diet and lifestyle intervention are considered to be the ideal solution for weight loss; however, it does not always produce the anticipated long-term outcomes for all.

Bariatric Surgery

Bariatric surgery consists of a group of procedures that effectively alter nutrient absorption and/or decreases the amount of food intake, resulting in weight loss (American Society of Metabolic and Bariatric Surgery, n.d.a). Hundreds of thousands of bariatric surgeries are successfully performed each year with a surgical mortality rate of just 0.5% (Schroeder et al., 2016). Patients have a variety of procedure options to choose from, including laparoscopic adjustable gastric banding (LAGB), laparoscopic sleeve

gastrectomy (LSG), Roux-en-Y gastric bypass (RNYGB), and Biliopancreatic diversion with duodenal switch (BPD/DS) (American Society of Metabolic and Bariatric Surgery, n.d.a; Schroeder et al., 2016). Generally, procedure selection is based on the surgeon's recommendations following a comprehensive assessment of each patient's medical history (Golomb et al., 2015). Many institutions use BMI and comorbidities as qualification metrics for surgery. To qualify for bariatric surgery, patients should: (1) possess a BMI greater than or equal to 40, or (2) have a BMI greater than or equal to 35 and at least one comorbid condition. Some also look for documentation of unsuccessful weight loss attempts with other methods (American Society of Metabolic and Bariatric Surgery, n.d.d).

Sleeve Gastrectomy

The laparoscopic gastric sleeve (LSG) was initially considered to be one part of the biliopancreatic diversion surgery started in 1988 and was eventually made a stand-alone procedure following excellent results (Benaiges et al., 2015). It is a non-reversible procedure performed by cutting and removing 80% of the curved portion of the stomach. The remaining portion of the stomach is stapled closed along the incision line (Novikov et al., 2018; American Society of Metabolic and Bariatric Surgery, n.d.a). The removal of a significant portion of the stomach results in a reduction in volume as well as changes in hormones that regulate hunger and satiety, resulting in weight loss (American Society of Metabolic and Bariatric Surgery, n.d.a).

A retrospective analysis of LSG patients completed by Golomb (2015) found the initial percentage of excess weight loss (%EWL) was approximately 76.8% at one-year post operation. Significant weight loss continued thereafter with 69.7% EWL at three

years and 56.1% at five years post operation. The LSG was found to successfully help patients achieve weight reduction and remission of some comorbidities, but weight regain was also common with this procedure (Golomb et al., 2015). Advantages of the LSG include unaltered intestinal absorption, no anastomosis and no changes to the pylorus (American Society of Metabolic and Bariatric Surgery, n.d.a; Golomb et al., 2015) A common complication seen in LSG patients is leakage from the staple line, occurring in 1-3% of cases (Benaiges et al., 2015). Additional complications include bleeding, stenosis, and portal thrombosis. Bleeding can occur during and after surgery. Post-surgery bleeding within the lining of the abdominal cavity or within the organs can significantly affect hemoglobin levels and increase risk of hemorrhage (Iannelli et al., 2019). Gastric stenosis can result from misplacement of surgical tools during surgery or from a functional twist within the gastric tubes. Patients will typically experience vomiting and a full feeling when stenosis occurs. Cases that require endoscopic or surgical intervention only occurred in about 0.6% of the population (Iannelli et al., 2019).

Roux-en-Y Gastric Bypass

The Roux-en-Y gastric bypass (RNYGB) is considered to be the gold standard for bariatric surgeries due to its rapid and effective short- and long-term results (American Society of Metabolic and Bariatric Surgery, n.d.a; Palleja et al., 2016). The procedure is performed by rerouting the gastrointestinal system to create a small, one-ounce pouch at the top of the original stomach. It is then connected directly to the jejunum of the small intestine. This process bypasses a significant portion of the stomach and small intestine, thereby reducing digestion and absorption of calories and nutrients (American Society of Metabolic and Bariatric Surgery, n.d.a). Lager (2017) found that within the first twelve

months post-surgery, RNYGB patients lost 42.6 kg of body weight, which was more than the 36.1kg lost by LSG patients. RNYGB patients also demonstrated greater metabolic changes, such as improvements in hemoglobin A1c and systolic blood pressure compared to LSG patients (Lager et al., 2017). Similarly, Liakopoulos (2020) found a significantly lower incidence of renal disease, cardiovascular disease, congestive heart failure, and all-cause mortality following RNYGB surgery, strengthening the relationship between significant weight loss and comorbidity reduction.

Common surgical complications resulting from RNYGB surgery include peritonitis which is inflammation of the inner abdominal wall or an intestinal blockage which can occur in 7.3% of patients (Gribsholt et al., 2018). Death may also occur as a result of these complications. A cohort study conducted by Gribsholt (2016) analyzed the all-cause and cause specific death rates 30 days after RNYGB surgery. Of the 9,895 patients analyzed, 0.15% of patients died as a result of surgery. More specifically, 0.04% of those patients died due to peritonitis. While the all-cause mortality rates of RNYGB patients was found to be similar to those of the general population in the comparison cohort, surgical patients did die significantly earlier (Gribsholt et al., 2016). Additional post-surgery complications include severe protein malnutrition. The malabsorptive nature of the RNYGB along with increased protein needs increases the risk of developing malnutrition (Kuin et al., 2019). Kuin (2019) noted that severe cases of protein malnutrition are seen in 5% of RNYGB patients, whereas 0% to 2% of gastric sleeve patients experience malnutrition. This study concluded that initiating enteral nutrition in addition to pancreatic enzyme supplementation proved to be an effective treatment (Kuin et al., 2019). In situations where severe malnutrition persists despite medical and

nutritional intervention, liver failure can occur. A case report reviewed two patients who had undergone RNYGB and LSG. Within the first-year post operation, both patients experienced reoperation and several hospital admissions for malnutrition. Both patients were given enteral nutrition to treat the malnutrition. However, both patients subsequently died as a result of liver failure (Lammers et al., 2018). While this outcome is rare, significant consideration must be taken.

Given the nature of the surgery, nutrient deficiencies are a common complication of RNYGB surgery. Deficiencies typically occur due to inadequate intake, malabsorption of consumed nutrients, preoperative deficiencies, taste changes, and food intolerances (Lupoli et al., 2017). For this reason, patients are advised to follow consistent post-surgery vitamin supplementation which includes multivitamins, vitamin B12, iron, calcium and Vitamin D. However, Dogan and Homan (2018) found that 80.4% of patients were compliant with vitamin supplementation post-surgery, however deficiencies were still common within the sample. These deficiencies were attributed to the quality of the supplement and the dosage taken. Researchers noted that patients who were deemed non-compliant with vitamin supplementation often underestimated the severity of the consequences. Advantages of this surgery include significant weight loss of 60-80% of their excess weight, favorable changes to gut hormones, and in most cases, maintenance of at least 50% of excess weight in the long term (American Society of Metabolic and Bariatric Surgery, n.d.a).

Adjustable Gastric Banding

Laparoscopic adjustable gastric banding (LAGB) surgery was the first laparoscopic bariatric procedure that was completely reversible. It was widely popular in

the 1990's and early 2000's. Recently, surgeons have moved away from performing this procedure due to the introduction of other weight loss procedures that have a reduced complication rate and improved long-term effectiveness when compared to the LAGB. (Lazzati et al., 2016). This procedure involves the placement of an inflatable band around the upper portion of the stomach. The band is then gradually inflated with saline to create a small stomach pouch which helps to reduce food intake and increase satiety (American Society of Metabolic and Bariatric Surgery, n.d.a). Many patients experienced complications that eventually led to the removal of the gastric band. A retrospective analysis done by Kowalewski (2017) found that 40% of patients experienced weight gain with the LABG and 25% experienced pouch slippage. Other common complications that may require the removal of the gastric band included port infection or dislocation, pouch dilation, band erosion (Kowalewski et al., 2017). Advantages of LAGB is that the procedure is completely reversible with the lowest risk of vitamin and mineral deficiency (Sudlow et al., 2020).

Duodenal Switch Gastric Bypass

Patients with severe obesity are often recommended to undergo the Biliopancreatic Diversion with Duodenal Switch (BPD/DS) to help achieve more beneficial weight loss. Weight loss is achieved by decreasing intake as well as absorption of nutrients (Skogar & Sundbom, 2017). This procedure is done in two parts. First, stomach capacity is reduced by performing a sleeve gastrectomy. This is followed by rerouting the small intestine and connecting the ileum directly to the stomach pouch. The bypassed segment of the intestine is still viable and is reconnected to the small intestine as it contains important digestive factors such as bile and enzymes (American Society of

Metabolic and Bariatric Surgery, n.d.a). In a study conducted by Skogar and Sundbom (2017), it was found that the BPD/DS produced a significantly greater decrease in BMI postoperatively compared to the RNYGB at 79% and 62%, respectively. Comorbidities were also found to be reduced following BPD/DS, but there were also complications (Skogar & Sundbom, 2017). A similar result was found by Werling (2018) in a 60 patient, randomized trial comparing the effects of RNYGB vs BPD/DS. Results of the study showed the BPD/DS produced a 51% greater reduction in BMI than the RNYGB. Improvements in metabolic panel and physical activity were also noted following BPD/DS (Werling et al., 2018). The malabsorptive nature of the procedure, resulting from diversion of the small intestine, increases the risk of nutrient deficiencies over a period of time. Therefore, patients having this procedure are prescribed lifelong vitamin and mineral supplementation. Nett (2016) performed an analysis of vitamin and mineral status 5 years post BPD/DS. Of the 43 patients analyzed, 81% were found to have recurrent deficiencies of vitamins and minerals. A significant portion of patients (44%) were found to be anemic in addition to being deficient in the fat-soluble vitamins including Vitamin A (23%), Vitamin D (76%), Vitamin E (7%) and Vitamin K (11%) (Nett et al., 2016). While complication rates following this procedure are high, patients are able to achieve greater weight loss and improved long-term success. (American Society of Metabolic and Bariatric Surgery, n.d.a)

Post-Surgery Bariatric Diet

Bariatric surgery poses new nutritional challenges due to changes in size of the stomach and nutrient absorption. Adequate nutritional intake after surgery aims at preventing malnutrition, gastrointestinal complication and weight regain. Calorie intake

is significantly decreased after surgery to about 400-800 kcal per day in the weeks following surgery and can increase to 1000 kcal one-year post-surgery reference. Previous research has determined that sufficient protein intake leads to the best outcomes. At a minimum, bariatric surgery patient should consume 60 grams of protein a day, however some surgeries have much higher requirements. (Tabesh et al., 2019).

Due to these physical changes, diet consistency and amounts must be altered. Patients are typically started on a diet of low sugar clear liquids initiated within 24 hours after surgery (Bettini et al., 2020). Recommendations for advancement vary depending on the surgeon. Following the clear liquid diet, patients are typically progressed to a pureed diet and then, eventually advanced to a soft solid diet for 2 weeks. During these initial stages, adequate protein intake is crucial for preserving lean body mass while significant weight loss is occurring. Liquid protein supplements are typically used to help meet these protein goals due to limited stomach volume and intolerance of quality animal-based protein foods (Bettini et al., 2020). Adequate hydration must also be achieved through careful and continuous intake of fluids. Starting immediately after surgery, patients are instructed to take small sips of liquids throughout the day to meet hydration goals. No fluid intake can occur during meals due to decreased stomach volume and risk of rapid gastric emptying and decreased satiety. Strict intake rules are implemented to ensure adequate intake is achieved while minimizing risk (Parrott et al., 2020)

Patients' success after surgery is directly related to their adherence to diet and lifestyle recommendations. Masood (2019) analyzed fifty patients who underwent bariatric surgery and followed them for at least eighteen months after surgery. During the post-surgery follow up period, researchers explored the relationship between diet and

lifestyle with the rate of weight regain. It was found that patients who were able to maintain their weight loss after surgery were 44% more adherent to the recommended dietary habits compared to only 10% adherence in those who experienced weight regain (Masood et al., 2019). These findings support the validity of the evidence-based guidelines as well as the impact consistency has on long term weight loss success.

Bariatric Surgery in Adolescent Population

The obesity epidemic is infiltrating all age groups. This is especially true for adolescents and young adult populations. This has laid the foundation for premature death in children and young adults. Promoting a significant cause for concern as comorbidities are arising at a younger age, increasing the risk of long-term morbidity and mortality. Children are considered to be severely obese if they possess a BMI > 99th percentile (Durkin & Desai, 2017). Similar to criteria set for the adult bariatric population, bariatric surgeries are only recommended for adolescents with severe obesity and only after non-surgical options have been pursued with no success (Beamish & Reinehr, 2017). The most common bariatric surgeries performed on adolescents are RNYGB, LAGB and LSG (American Society of Metabolic and Bariatric Surgery, n.d.b). Inge (2016) conducted a prospective study, including 242 adolescent patients who had bariatric surgery. At three years post operation the average percent weight loss in those who underwent RNYGB was 28%, compared to 26% in those who had LSG. Bariatric surgery was also found to induce improvements in hypertension and dyslipidemia in these adolescents (Inge et al., 2016). A similar result was found by Ryder (2018) when looking at 5-year postoperative weight loss. Their study compared long term maintenance of weight loss in the surgical group versus a non-surgical group. At both one year and 5

years post RNYGB, a 38.5% and 29.6% reduction in BMI was achieved, respectively (Ryder et al., 2018).

While bariatric surgery in adolescents has proven to be beneficial in terms of weight loss and comorbidity reduction, there is still concern for side effects, long term outcomes and the ethics surrounding the decision for bariatric surgery (Beamish & Reinehr, 2017).

Age and Bariatric Surgery

Bariatric surgery is typically performed on patients age 18 years and older (American Society of Metabolic and Bariatric Surgery, n.d.b). In certain circumstances, bariatric surgery is also considered for patients under the age of 18. While age is not used as a qualifying factor for bariatric surgery, it is an important consideration when assessing each patient for readiness. An age-based analysis was conducted by Gonzalez-Heredia (2015), to determine characteristic comorbidities, complications and outcomes experienced in each age group. To qualify for this study, participants already had to have undergone either a SG or RNYGB. They were then stratified into three age groups: younger than 55 years, 55 to 65 years old and 65 years and older. Patients above the age of 55 had greater prevalence of comorbid conditions, while participants under the age of 55 years had more complications post-surgery. Despite these differences, there was no obvious variability in the percent of weight loss in each age group 6,12, and 24 months after surgery (Gonzalez-Heredia et al., 2015). Given this, age does not seem to significantly affect post-surgery outcomes. A retrospective review of elderly patients, age 65 and older who underwent bariatric surgery produced similar results. A large portion, 77%, of these surgery candidates had comorbid conditions. While a higher rate of

complications did occur, successful comorbidity reduction and weight loss was also seen as a result of surgery (Susmallian et al., 2019).

Different considerations need to be evaluated when working with the younger population, especially those of childbearing age. Analysis of the United Kingdom National Bariatric Surgery Registry looked specifically at factors related to fertility and reproduction in females age 18 to 45. Bariatric surgery induces weight loss which can enhance fertility in women. Those in this age group showed similar reductions in weight with average BMI dropping from 48.2 to 37.4 one-year post operation. The rate of comorbid conditions also decreased from 2.36 to 0.96 per person. Reproductive issues were improved post-surgery, however patients with three comorbidities experienced increased menstrual dysfunction. However, surgery is still an effective weight loss approach even though there is a risk associated with reproductive impairments (Edison et al., 2016). Therefore, each person should receive a personalized treatment plan that best fits their needs.

Psychological Burden of Obesity

The presence of obesity in and of itself carries a significant psychological burden. Individuals in this population often face discrimination and stigmatization because of their body weight (Griauzde et al, 2018). Assumptions are often made about an individual's habits, personality and overall likeability based on their outward appearance and their weight. Specifically, those who are obese are considered "weak-willed" and "unmotivated" (Bunga, 2018). Research has shown that these negative assumptions lead to the increased prevalence of disordered eating, low self-esteem, mood disorders, and anxiety in obese individuals seeking bariatric surgery (Jumbe et al., 2017).

Prior to bariatric surgery, patients are required to complete a psychological/psychiatric evaluation in hopes of identifying and managing potential barriers to success following surgery (Jumbe et al., 2017). The mental health status of many patients pursuing bariatric surgery is often poor and can significantly impact their success after surgery. Qualitative studies suggest that many patients expressed a longing for some level of normalcy after surgery, whether it be physically, mentally and/or socially (Coulman et al., 2020). Following surgery, patients expressed satisfaction with being able to independently take care of their daily tasks and personal needs, feeling more motivated and achieving a healthier relationship with food by changing their mindset (Coulman et al., 2020).

Often, patients experience an improvement in mental health following surgery. Griauzde (2018) conducted a qualitative research study looking at psychosocial changes following bariatric surgery. A total of eleven focus groups were conducted, consisting of 77 participants with an average age of 48 years. It was concluded that the three most common psychosocial changes that occurred after surgery was their perception of themselves, how they were perceived by others, and changes in personal relationships. Many participants noted positive changes in these areas, however some others noticed negative reactions and difficulty adjusting to their new life (Griauzde et al, 2018).

Diet and eating habits play a big role in post-surgery outcomes. A study conducted by Konttinen (2015) compared a matched group of obese bariatric surgery candidates with obese participants receiving conventional weight loss treatment. Each group was assessed for their change in weight and eating behavior at one year and then again at two, six, and 10 years. On average, significantly more weight loss was achieved

by surgical patients at one year compared to the conventional group, where maximum weight loss was achieved at six months. Surgical patients saw a large decrease in their hunger and ability to give in to eating stimuli. This was found to be related to better short- and long-term weight loss in surgery patients. However, patients who did not achieve more than 10% loss of their baseline weight or gained weight during the follow up period, did not experience the same decreases in hunger and changes in self-control (Konttinen et al., 2015). Despite experiencing successful weight loss after surgery, many participants still struggled mentally (Jumbe and Meyrick, 2018). While many physiological changes occur following surgery, many of the mental and psychological changes take time to adapt.

Quality of Life Before and After Surgery

Those with long standing weight-related health issues tend to struggle physically and mentally prior to intervention. Quality of life as it relates to health and weight, is often referred to as health-related quality of life (HRQOL). This is defined as the suffering and limitations imposed physically and socially as a result of illness (Sarwer & Steffen, 2015). Research done by Major (2015) assessed the quality of life in obese patients before and after bariatric surgery. A total of 65 participants were included with an average age of 42.75 years. Quality of life was assessed using two validated tools, the Short Form Health Survey (SF-36) and Moorehead-Ardelt Quality of Life Questionnaire II (MA-QoLQ II). Prior to surgery, the average quality of life score for physical and mental health was 85.2 based on the SF-36 survey. Additionally, a deeper assessment done by MA-QoLQ II survey found that 58% of participants felt their quality of life was average, and 13.8% felt it was good. The same tools were used to measure quality of life

after surgery. The average quality of life score based on the SF-36 survey increased after surgery to 145.1, indicating a statistically significant improvement. Similarly, 27.89% ranked their quality of life as average and 36.8% ranked their post-surgery quality of life as good (Major et al., 2015). These increased quality of life scores following surgery indicate positive changes seen in patients' physical abilities, self-esteem, and social habits as a result of significant weight loss. A similar result was found by Janik (2016) in a cross-sectional study of two separate groups, a control group of 101 participants seeking bariatric surgery and an operated group of 58 participants who underwent a LSG or RNYGB 12-18 months earlier. The mean age of the control and operated group were 40.2 and 43.6 years, respectively. Using the same MA-QoLQ II survey form, the operated group had a higher quality of life score compared to the control, non-operated group (Janik et al, 2016). Both studies further support the idea that bariatric surgery improves more than the weight and health of participants.

Motivation and Expectations

Over the years, patients' motivations and expectations for weight loss have shifted, given personal and societal influences. Two studies conducted over a decade ago, determined that while there was a small percentage of patients who were motivated by physical, outwardly factors, however the main motivation for surgery were the health issues associated with obesity (Pearl et al., 2019). Pearl (2019) evaluated 208 patients to determine their reasons for pursuing surgery, their body dissatisfaction, and the motivating roles of certain people in their life. Physical health and longevity were the top two reasons that motivated patients to pursue surgery. Participants considered these factors to be significantly more important than any psychosocial factors or quality of life.

Of the additional factors, physical appearance was still significantly important. Additionally, participants considered themselves to be their greatest motivator, far more than health care providers and family (Pearl et al., 2019). A similar result was found by Sharman (2016), using a qualitative approach, conducted six focus groups with a total of 49 patients who had either been waitlisted for surgery or had already undergone surgery. A significant number of participants expressed that their motivation stemmed from their desire to cure their current comorbidities or, in some cases prevent their onset. Many were also influenced by the fear of premature death related to their weight and comorbidities (Sharman et al., 2016). It is also important to note that the average age of participants in the two studies discussed was 42 years and 55 years, respectively.

Many patients view surgery as their last hope of regaining control over their weight and health (Opolski et al., 2015). As a result, post-surgery expectations often do not align with the realistic outcomes. A meta-analysis done by Opolski (2015) reviewed articles on various eating habits in bariatric surgery candidates. A common theme found among articles looking at pre-surgical expectations of post-surgery eating habits showed that many participants saw surgery as a way to control their eating habits. General expectations of surgery were quite high, as many patients believed it would cure their struggle with weight loss as well as many of their life's problems.

Self-Efficacy for Weight Loss

Self-efficacy is defined as the degree to which an individual perceives their ability to make the necessary changes to achieve a specific outcome (Jaensson et al., 2019). Higher levels of self-efficacy often lead to improved health behaviors, such as weight loss (Nezami et al., 2017). The SELF Trial looked at the effects of self-efficacy

improvement sessions in addition to behavioral intervention for weight loss. Participants were randomized into two groups to receive either standard behavioral weight loss treatment (SBT) on its own or in addition to self-efficacy enhancement sessions. Both groups were provided with specific calorie and exercise regimens.

Those receiving additional self-efficacy enhancing support participated in 30 one-on-one sessions throughout the study period. Overall, the group receiving standard intervention in addition to self-efficacy training saw a greater percent weight change of 8% at 18 months compared to 5.96% in the SBT group. Weight loss continued to progress in the self-efficacy group, whereas the SBT group saw less long-term weight loss. Self-efficacy scores for weight related behaviors showed a larger positive change in the self-efficacy group compared to the SBT group (Burke et al., 2015). Further support for the importance of self-efficacy for weight loss was provided in a pilot study done by Faghri and Buden (2015) which determined that for a one-unit increase in weight loss self-efficacy score a resulting 0.39 decrease in BMI is expected.

Success following bariatric surgery depends on each patient's level of involvement and consistency in their diet and lifestyle changes. A prospective study done by Kvalem (2016) studied the differences in motivation, self-efficacy and adherence among patients scheduled for bariatric surgery versus those pursuing a conservative method of weight management. Participants in each group were asked to complete questionnaires containing questions from a variety of surveys. Participants having surgery seemed to have more confidence in their ability to make diet changes and cope with any stress and setbacks. Interestingly, surgical patients reported extensive histories of unsuccessful and unhealthy weight loss attempts, familial obesity, and greater intake of

carbonated beverages. Nonetheless, surgical patients' self-efficacy was higher than non-surgical patients (Kvalem et al., 2016). Self-efficacy plays a very important role all health-related behavior changes especially in weight loss. A variety of experiences and relationships can affect one's self efficacy positively or negatively.

Summary

The obesity epidemic is affecting populations worldwide. Overconsumption and ease of access to food in recent times are the main causes for the increasing weight of the world (Mattson et al., 2017). According to the CDC, weight loss of 5% can help to improve health outcomes in a large part of the overweight and obese population (Centers for Disease Control and Prevention, 2020b). Bariatric surgery is a tool to help kickstart sustainable weight loss and comorbidity remission or reduction (Maciejewski et al., 2016). Current research regarding bariatric surgery in young adults is still evolving. The current research studies have provided evidence in favor of bariatric surgery for severely obese adults and children. Long term follow-up for sustainability and effectiveness of bariatric surgery in the young adult and adolescent population is still being analyzed. Future research should focus on the journey of young adults through the bariatric surgery process, as a knowledge gap exists related to this age group.

The purpose of this current study is to conduct an age-based comparison of motivating factors, anticipated post-surgery success and quality of life. Research objectives for this study include comparison of the motivating factors to pursue bariatric surgery amongst age groups, describe participants' confidence in their abilities to successfully implement the post-surgery diet and finally to compare the anticipated changes in participants physical, social and mental health.

CHAPTER 3

METHODOLOGY

A qualitative research approach was chosen for this project to gain insight into the characteristics, mindset and life experiences that influences one to pursue bariatric surgery. Using a phenomenological design, common themes in patient experiences were identified. Prior to data being collected, approval for this study was obtained through Metro West Medical Center Institutional Review Board (IRB) and Louisiana Tech IRB (Appendix A). The primary researcher was employed as a registered dietitian at this facility.

Sample and Subjects

The convenience sample chosen for this study consisted of obese men and women who were preparing to pursue bariatric surgery at Doctors Hospital of Manteca. Those between the age of 18 and 41 years old were eligible to participate. Patients who had begun the pre-surgical clearance process as of January 2021 were considered for participation. Additional selection criteria included a BMI greater than or equal to 40 or a BMI greater than or equal to 35 along with at least one obesity-related comorbidity and must have had completed the pre-operative nutrition class. These were identical to the criteria for qualification for bariatric surgery. Participants were excluded from this study

if they had a previous bariatric surgery. Data collection occurred between August and October 2021. The age range was capped at 41 years based on the age of participants in existing research being 40 years and above (Pearl et al., 2019, Kvalem et al., 2016, Burke et al., 2015, Janik et al., 2016). Additionally, the average age of bariatric surgery candidates at Doctors Hospital of Manteca is about 42 years of age.

Data Collection Instruments

Following review of existing data collection instruments, an interviewer administered questionnaire was created by the primary researcher, specifically for this research project (Appendix B). The questions in this survey were modeled after current research articles as well as existing questionnaires (Yanovski et al., 2015; RAND Corporation, n.d; Hult et al., 2019). The survey aimed to assess participants motivating factors, thoughts and feelings towards their quality of life before and after surgery as well as their anticipated post-surgery success. The questionnaire first included five questions to gather general demographic information and past medical history. This was followed by fifteen open-ended survey questions.

The first five demographic questions gathered information on age, gender, height, and weight as well as current comorbidities. The list of comorbidities presented was based on those identified by the American Society for Metabolic and Bariatric Surgery as the conditions that most commonly affect those pursuing bariatric surgery (American Society of Metabolic and Bariatric Surgery, (n.d.c). The first survey question inquired about participants chosen surgery type followed by a question regarding participants weight history. The following two questions, questions 3 and 4, aimed to assess participant's motivations for pursuing bariatric surgery. These questions were influenced

by the survey used by Hult et al., (2019) to assess motivation and satisfaction with bariatric surgery. Questions five through seven, which inquired about participants' level of confidence regarding diet implementation after surgery, were modeled after those used by Schwarzer and Renner (2009) in their article regarding Health-Specific Self-Efficacy Scales as well as the SF-36 Questionnaire (RAND Corporation, n.d). Questions eight through ten were follow up questions to understand the potential barriers that affected participants' confidence in diet implementation. The following three questions sought to gather information on current physical, social, and mental health status as well as the changes that were anticipated after surgery. These were developed based on review of current research regarding bariatric surgery in adolescent and adult populations using existing quality of life questionnaires for assessment (World Health Organization, 2014; Major et al., 2015; RAND Corporation, n.d). The final two questions assessed participants perceived significance of surgery and gave participants the opportunity to provide feedback on resources they felt would be helpful.

The survey instrument was designed to be used in a semi-structured interview. This allowed for consistent, structured questions across each interview while also allowing for points of clarification and additional comments as applicable.

Data Collection Procedure

Participants were recruited from the pre-operative bariatric surgery education class held three times a month. All patients attending the class had completed the presurgical clearance process and met qualifying criteria for surgery as well as the research study. Following completion of the education class, the primary researcher announced the opportunity to participate in the research study and provided information

on the goals and methods of the study. Those willing to participate had the option of completing the online interview immediately after the education class or schedule the interview for a later time. All interviews were conducted one-on-one via Zoom. Participants who did not complete the interview directly at the end of class, set an appointment and provided an email address for contact. The researcher emailed the participant a link for the future interview. Recruitment and interviews continued until data saturation was obtained.

Each participant was first assigned a subject number prior to the interview. At the start of each interview, the primary researcher provided a brief overview of the project and the interview/data collection process, including the use of audio recording. A handheld recording device was used for each interview. Participants were then made aware of the initiation of the recording documentation, which recorded the entire interview. After reading the consent statements to the participants, they were asked to provide verbal consent for audio recording, which was included in the transcription of the interview. Following consent, demographic characteristics such as age, gender, weight, height and current comorbidities were obtained. This information was recorded on the data collection sheet (Appendix B). This information was later confirmed with the participant's medical record. The primary researcher also recorded field notes on the data collection sheet throughout the interview, documenting information on behaviors, expressions, emotions, points of clarification and general observations.

The primary researcher transcribed the audio recording and field notes within 72 hours. Transcripts were identified by the subject number to maintain confidentiality. The recording device, notes and personal information were kept in a secure, locked location

during the course of the research study. Audio recordings were deleted once transcription was completed and all written materials were shredded.

Data Analysis

A thematic approach was chosen for analysis of the research data. The primary researcher reviewed each transcript individually to gain familiarity. Key words, phrases, and quotes were identified as part of the initial coding process. These codes were then re-reviewed for relevance to the research objectives. The significant quotes and phrases were then highlighted. These themes were then grouped according to the research objective. This process was repeated for each participant transcript. Unmarked transcripts were then prepared to be analyzed by two other sources.

Transcripts were then reviewed by a thesis committee member, and a healthcare professional with experience in the field. This process of triangulation ensures consistency and validity of data. All reviewers used the same analysis process as the primary researcher. Reviewers were instructed to first read through the research objectives to get a better understanding of the study. Transcripts were then reviewed for familiarity and initial codes were developed. On subsequent reviews, they also made notes of the relevant phrases and quotes that arose. These phrases were highlighted in each document. Once the transcripts were returned to the primary researcher, they were reviewed for any new concepts that may have been identified by other reviewers. The primary researcher interpreted these themes to discover explanations and make connections with current research.

To further describe this study's population, participants were divided into three age groups, 25-30, 31-35, and 36-41. Descriptive statistics for age, gender and past

medical history were used to describe the study population. The frequency of each code was found by using the Advanced Find and Replace feature of Word version 16.59. Each transcript was compiled into one document and all statements read by the researcher were manually removed, leaving only participants responses. Each code word was searched using the advanced find and replace feature which automatically counted the total number of occurrences of the word or phrase.

CHAPTER 4

RESULTS

Seventeen interviews were conducted between August and October 2021. The research objectives guiding this research were to identify the themes for participants' motivations, describe confidence levels in their abilities to implement diet changes, compare participants' perception of their physical, social and mental changes with surgery, then compare and contrast these to current literature. Multiple themes emerged with in each objective. The themes characterizing participants' motivating factors were health and wellness, comorbidities, family and kids, and physical fitness. Themes characterizing participants' confidence in their abilities to implement diet changes were practicing postsurgical diet changes, changing presurgical eating habits and work-life balance. Themes characterizing participants' anticipation of physical changes were independence in performing activities of daily living, enjoying extracurricular activities, and improved physical appearance. The themes characterizing participants' social changes were eating outside of the home, attending special events and greater willingness to participate socially. Finally, the themes characterizing participants' perceived mental changes were improved anxiety and depression, and positive self-perception. The concepts of fear and frustration as well as energy and stamina emerged as two themes

that were commonly seen to be overlapping throughout many of the previously mentioned themes.

Demographics

A total of 17 people consented to participate, 14 females (82%) and 3 males (18%). Eight participants were scheduled to have the Roux-en-Y gastric bypass surgery, six for the laparoscopic sleeve gastrectomy and three for the Loop Duodenal Switch. The surgery participants chose to have was dictated by their BMI, current medical conditions and the surgeons input. All participants had a BMI greater than 40 kg/m^2. The presence of comorbidities was seen across all age groups. All age groups experienced hypertension, hyperlipidemia, obstructive sleep apnea, heartburn, arthritis, and infertility. Type 2 Diabetes was reported by three participants and Fatty Liver Disease was reported by three participants as well (17.64%). No participants aged 36 or above reported depression, however four participants (23.53%) under the age of 35 reported this comorbidity.

All participants were between the ages of 25-41. The average age for male participants was 38 years and 32 years for females. Participants were divided into three age groups, 25-30, 31-35 and 36-41 years. The three male participants were in the 36- to 41-year-old age group. Participant demographic data can be found in Table 1.

Table 1

Demographic Data (N=17)

Age	25-30 n (%)	31-35 n (%)	36-41 n (%)
Gender			
Male	0 (00)	0 (00)	3 (18)
Female	6 (35)	5 (29)	3 (18)
Type of Surgery			
Sleeve Gastrectomy	3 (18)	1 (06)	2 (12)
Roux-en-Y Gastric Bypass	3 (18)	2 (12)	3 (18)
Duodenal Switch Loop	0 (00)	2 (12)	1(06)
Comorbidities			
Type 2 Diabetes	0 (00)	1 (06)	2 (12)
Hypertension	1 (06)	2 (12)	3 (18)
Hyperlipidemia	2 (12)	1 (06)	5 (29)
Obstructive Sleep Apnea	1 (06)	2 (12)	2 (12)
GERD	3 (18)	1 (06)	5 (29)
Arthritis/Joint Pain	1 (06)	1 (06)	4 (24)
Fatty Liver Disease/Cirrhosis	0 (00)	2 (12)	1 (06)
Stress Urinary Incontinence	0 (00)	1 (06)	0 (00)
Polycystic Ovarian Syndrome	1 (06)	1 (06)	0 (00)
Depression/Mood Disorders	2 (12)	2 (12)	0 (00)
Infertility	1 (06)	1 (06)	1 (06)

Motivating Factors

To assess motivating factors for pursuing surgery, participants were asked about the reasons that encouraged them to have surgery and what they hoped to achieve by having surgery. A variety of factors were reported, the most apparent motivating factors were personal health and wellness, current and future comorbidities, family and children, physical fitness, and failed weight loss attempts. Table 2 details the themes that were identified, the codes and the related frequency of each code.

Table 2

Themes Regarding Motivating Factors

Theme	Code (frequency)
Health and Wellness	Healthier (35)
	Health (15)
	Whole Life (8)
	Healthier life (4)
	Longer Life (3)
Comorbidities	Diabetes (9)
	Medication (8)
	Cholesterol (8)
	High Blood Pressure (8)
	Hypertension (6)
	Family (4)
	Prevent (3)
	Avoid (2)
Family and Children	Kids (18)
	Children (4)
	For my kids (3)
	Family (3)
Physical Fitness	Energy (15)
	Walk (10)
	Tired (7)
	Mobility (3)
Failed Weight Loss Attempts	Diet (21)
	Exercise (8)
	Frustrating (3)
	Weight gain (3)
	Phentermine (2)
	Pills (2)

Health and Wellness Theme

Participants hoped to achieve improved health and wellness following bariatric surgery. Participants were primarily motivated by their current poor health status. Of the

eleven expressing a desire to live longer and healthier lives, ten were female and three were male. This was explored as a motivating factor among all three of the age groups.

Six of the eleven participants stated they simply just wanted to be healthier. Participant number 3488, age 29, Roux-en-Y gastric bypass surgery commented “I want to be healthier not sick.” Similarly, participant number 1953, age 29, Roux-en-Y gastric bypass surgery commented ‘It’s not just a cosmetic thing, it’s a health thing. I want to live a long time.”

Two participants stated they just wanted to live longer. Five participants commented specifically on wanting to have both healthier and longer lives. Participant number 3013, age 36, gastric sleeve surgery, stated that he wanted a “healthier, longer life. I can add 15 years to my life.” Additionally, one female participant aged 31, Duodenal Switch Loop, expressed explicit fear for their life, stating “To be honest, I’m just scared for my life.”

This theme was expressed as motivating factors among all three age groups. Additional comments related to the health and wellness theme, organized by age group, are represented in Table 3.

Table 3

Motivating Factors – Health and Wellness Theme

Age	Comments
25-30	• "It's more for health wise than you know how I look and feel." 2787 • "A lot of it has to do with being a lot healthier." • "I want to be healthier not sick" • "I just want to be a healthier version of myself" • "It really all boils down to being healthier … not being in so much pain" • "It's not just a cosmetic thing, it's a health thing, I want to live a long time."
31-35	• "Just living a healthier life." • "I just want to live longer" • "My health is getting a little worse. It's kind of declining at this time so… I'm trying to like do something to change my lifestyle completely… I just want to be healthier." • "To be honest, I'm just…scared for my life"
36-41	• "Healthier lifestyle and to be a lot skinnier." * • "Healthier, longer life. I can add 15 years to my life" * • "Basically, for a better, healthier life, my whole life." * • "So I don't have to have any more surgeries on my knees" * • "My health is number one." • "I want to continue living a longer life and a healthier life.

Notes: Age 25-30, four participants commented. Age 31-25, three participants commented. Age 36-41, four participants commented. (*) male participant.

Comorbidities Theme

The second theme identified was the effect of comorbid health conditions. A total of ten female participants (71.4% of females) reported being motivated by comorbid conditions. No male participants commented on being motivated by comorbid factors.

Of the females, four (28.57%) were motivated by the possibility of developing comorbidities in the future and wanted to prevent them. Participant number 4148, age 31, having gastric sleeve surgery, stated "Both of my parents are diabetic, so I want to avoid that." Similarly, participant number 3345, age 32, having Roux-en-Y gastric bypass

surgery, stated “I don’t want to have to take medications for high blood pressure, for diabetes. I don’t want it to get to that point when there’s something that I can do to prevent that.”

Four (28.57% of females) stated they wanted to resolve their current health conditions. Participant 1773, age 39, Roux-en-Y gastric bypass surgery, commented “My main concern is getting rid of my Type 2 Diabetes.” Finally, two (14.29% of females) were motivated by both current and future comorbid conditions. Participant 3488, age 29, Roux-en-Y gastric bypass surgery, stated “When they told me about my high cholesterol, they told me I was a point away from being diabetic, and I’m like oh no, I’m not going to be that one person.”

Whether it was exacerbation of current health issues, or the onset of new participants were motivated to have surgery to mitigate these issues. While this theme was seen across all three age groups, it was more common in the 31–35-year-old age group with six of the 10 participants commenting on this theme. Additional comments can be found in Table 4.

Table 4

Motivating Factors – Comorbidities Theme

Age	Comments
25-30	• "When they told me about my high cholesterol, they told me I was a point away from being diabetic, and I'm like oh no... I'm not going to be that one person." • "My mom and my dad both have diabetes. And high blood pressure. They both have cholesterol. So, since I don't have that yet, I do have that on my genes that I can potentially get high blood pressure, diabetes and all of those sicknesses and even more with my obesity" • "I have carpal tunnel in both hands, I have nerve damage in my lower back from a pinched nerve, and I feel like getting this weight off would help tremendously."
31-35	• "Both of my parents are diabetic, so I want to avoid that." • "I ended up developing pre-eclampsia while pregnant. I had to be on all these medications…I think right now it's somewhat under control, but I hope that with the surgery, it will just go away." • "I don't want to have to take, medications for high blood pressure, or for diabetes. I don't want it to get to that point when there's something that I can do to prevent that." • "I do have sleep apnea and asthma as well. So I definitely, want to get that taken care of. I am currently diabetic because of it too." • "I'm tired of dealing with high blood pressure and infertility issues." • "We have stuff like that in our family; stroke, high blood pressure, and heart attack, and all these things. I'm at the highest weight… and I just said no. Like I need to do something about this or I'm going to die!" • "I could very easily have a heart attack or something. it's like I do want to be here for my family, and I do want to someday become a mom, and I only see that being possible if I lose the weight." • "I feel like my health has declined the past few years and I'm just scared. I don't want to have a stroke. I don't want to die early. I don't want to have a heart attack."
36-41	• "I want to have my cholesterol go down, high blood pressure, Crohn's. They said it could be reversible." • "Having the risk in my family that we run -- heart conditions, type 2 diabetes high blood pressure, cholesterol, it was a reality check!" • "My main concern is getting rid of my Type 2 diabetes."

Notes: Age 25-30, three participants commented. Age 31-35, five participants commented. Age 36-41, two participants commented.

Family and Children Theme

Family and children were the third theme to appear as a motivating factor. Nine participants (52.94%), seven females and two males, stated they were motivated to pursue surgery to have many healthy years with their family and children.

Six participants (35.29%) reported that their current weight limited their energy and how active they could be with their children. Participant number 3781, age 30, gastric sleeve surgery, stated "Not feeling like I'm well enough to keep up with my children as far as running around and doing all that stuff. It's exhausting."

Four female participants (28.57% of females) stated they wanted to increase their life expectancy so they could be around for their families. Participant 3488, age 29, Roux-en-Y gastric bypass surgery, stated "I have three boys that I need to look out for. I want to be here for my kids a lot longer." Similarly, participant number 1689, age 32, Roux-en-Y gastric bypass, stated "This is going to give me five more extra years with my kids, then I'm going to go ahead and do it for them and myself."

Two female participants (14.28% of females) stated they were hoping to improve their life expectancy and their energy level for their families. Participant number 3345, age 32, Roux-en-Y gastric bypass surgery, stated "If that's something that's going to benefit me from preventing diabetes, hypertension, and having a better life for my kids, and being active for them, then I'm all in." The two male participants (66.66% of males) that commented on this theme expressed a desire to gain energy to play with their children. Participant number 3287, age 37, having Roux-en-Y gastric bypass surgery, stated "I have a 6-year-old son and I'd like to be able to play with him."

Participants wanted to pursue surgery to improve quality of life for not only themselves but also their children and family. This theme was seen across all three age groups. Additional comments relating to this theme can be found in Table 5.

Table 5

Motivating Factors – Family and Children Theme

Age	Comments
25-30	• "I have three boys that I need to look out for. I want to be here for my kids you know a lot longer." • "Being able to chase my kids around and not being out of breath." • "Not feeling like I'm well enough to keep up with my children as far as running around and doing all that stuff like…its exhausting." • "I have kids and I'm tired of being so out of breath all the time, I'm tired of not being able to… want to want to do things because" • "I'm just really trying to umm, you know boost my confidence and be here and live a longer life you know, for my children, and umm, you know, just have a better life"
31-35	• "This is going to give me 5 more extra years with my kids, then I'm going to go ahead and do it for them and for myself." • "I really want to… live a long, healthy life, for my kids, and show them, you know, that we …. Can be healthy." • "If that's something that's going to benefit me from preventing diabetes, hypertension, you know and having a better… life for my kids and being active for them, then I'm- I'm-I'm all in." • "It's like I do want to be here for my family, and I do want to someday become a mom, and I only see that being possible… you know If I lose the weight."
36-41	• "I have a 6-year-old son and I'd like to be able to play with him" * • "I have a four-year-old and a 12-year-old and I need to- I want to gain that energy, you know I want to be able to be more active and be here for them for a long term versus you know, gone at a young age." • "Do things with my kids" *

Notes: Age 25-30, comments from three participants. Age 31-35, comments from three participants. Age 36-41, comments from three participants. (*) male participant.

Physical Fitness Theme

Participants were motivated to have weight loss surgery to gain freedom of movement and to move more efficiently. Nine participants (52.94%), six females and two males, commented on their currently limited physical fitness, stamina, and mobility.

Of the nine participants, six (35.29% of all participants) commented on wanting to gain more stamina and energy to complete tasks. Participant number 1773, age 39, Roux-en-Y gastric bypass, stated "I think most of that is just my energy. I really want to gain some energy." Three female participants (21.42% of females) mentioned improvement in mobility and less pain as a motivating factor. Participant 4889, age 31, duodenal switch Loop surgery, stated "I want to be able to walk more, without having to get tired so quickly, without having to deal with knee pain so much." Only one participant in the 25-30 age group commented on this factor. Participant number 2088, age 30, Roux-en-Y gastric bypass surgery, stated "Have more mobility in my joints and not have so much pain."

Both male participants (66.66% of males) commented on gaining stamina Participant number 3013, age 36, having gastric sleeve surgery stated "So I can stand longer, work longer. Right now, it just, standing on them for an hour is just horrible."

While seen in all three age groups, only one participant in the 25–30-year-old age group commented on this factor. Additional comments related to physical fitness as a motivating factor can be found in Table 6.

Table 6

Motivating Factors – Physical Fitness Theme

Age	Comments
25-30	• "Have more umm mobility in my joints and not have so much pain."
31-35	• "More energy!" • "I want to be able to walk more without having to get tired so quickly and without having to deal with knee pain so much." • "It's difficult for walking and then just the- like everything, the asthma, everything kind of plays into the mobility." • I know, like here and there I'll feel sluggish, I feel tired, like I'm ready for bed at the end of the day and I don't- I feel like I don't have enough energy."
36-41	• "So I can stand longer, work longer. Right now, it just, standing on them for an hour is just horrible." * • "I want to be able to have more energy. I like to do outside things, I like to go fishing, I like to go camping. I like to do stuff, you know outdoorsy activities, and stuff like that I just don't feel like I have the energy." • "I think most of that is just my energy. I really want to gain some energy." • "Not run out of breath." * • "I won't get tired… I mean… be able to…bend down and do stuff." *

Notes: Age 25-30, comment is from one participant. Age 31-35, comments are from four participants. Age 36-41, comments from four participants. (*) male participant.

Failed Weight Loss Attempts Theme

Participants revealed they had made previous weight loss attempts, however, were not able to achieve sustainable weight loss. These unsuccessful events motivated participants to pursue surgery to achieve a long-term solution. Seven participants (41.18%) discussed various non-surgical attempts they had made to lose weight without success. Six participants were female, and one was male.

Two participants (11.76%) reported trying diet and exercise to achieve weight loss. Participant number 3781, age 30, scheduled for gastric sleeve surgery, stated

> I'm eating healthier and I' m staying the same weight and that's with – I'm making my ten thousand steps a day. Having this big of a struggle trying to get the weight off is so exhausting.

Similarly, participant number 2787, age 26, gastric sleeve surgery, states

> I did try, a lot of diets. I tried exercising, but exercising hurt my bones, my joints a lot. So, I felt like nothing was working for me. And then how I keep getting the steroid shot, and I keep gaining a lot weight. So it's very frustrating.

One female participant, age 32, Roux-en-Y gastric bypass reported solely attempting diet modification for weight loss. Participant number 3345, age 32, Roux-en-Y gastric bypass, stated "The dieting, the liquids, the pills, you name it I've tried it and it just didn't work for me." Of the seven, four female participants (28.57% of females) mentioned using diet pills such as phentermine to induce weight loss in addition to diet and/or exercise. Participant number 3488, age 29, having Roux-en-Y gastric bypass, stated

> I've attempted weight loss, I've tried eating right, exercising. I've tried taking the phentermine and a couple of years ago it did help me. I-I just stopped taking…I just never tried taking them and I ended up gaining… pretty much all the weight back.

Finally, one male participant, age 36, scheduled for gastric sleeve surgery, stated "Trying to get the weight off and walking and eating right just ain't helping and the diets didn't work, so I tried."

This theme of failed weight loss attempts as a motivating factor can be seen in each age group, however only one participant in the 36-41-year-old age group

commented on this factor. Additional participant comments related to this motivating factor can be found in Table 7

Table 7

Motivating Factors – Failed Weight Loss Attempts Theme

Age	Comments
25-30	• "I did try a lot of you know, diets, I tried exercising, but exercising hurts my bones, my joints a lot. So I felt like nothing was working for me. And then how I keep getting the steroid shots and I keep gaining a lot of weight. So it's very frustrating for me" • "I've attempted weight loss, I've tried eating right, exercising. I've tried taking the phentermine and a couple of years ago it did help me. I-I just stopped taking…I just never tried taking them and I ended up gaining… pretty much all the weight back." • "I'm eating healthier… and I'm staying the same weight and that's with-I'm making my ten thousand steps a day. Having this big of a struggle trying to get the weight off is so exhausting." • "I've been on phentermine, that helped a lot, but it just- I got to where it didn't do anything anymore. Umm, my Wellbutrin, what I take… it helps me not umm be so hungry and it helps umm, with my depression, so that works too... Like I try to stay away from fast food. I stay away from bread and things like that. It hasn't really been seeming to help too much because I'm still over 300."
31-35	• "The dieting, the liquids, the pills, the… you name it I've tried it, and I…. It just didn't work for me." • "I tried like the fad diets you hear about and I would lose a pound or two, maybe five, maybe 10. But then that was it. I would exercise, same thing … diet pills you know or certain teas … but it just always seemed to come to … like a halt."
36-41	• "Trying to get the weight off and walking and eating right just isn't helping and the diets didn't work, so I tried." *

Notes: Age 25-30, comments from four participants. Age 31-35, comments from two participants. Age 36-41, comments from one participant. (*) male participant.

Anticipated Post-Surgery Success

Participants were asked to describe their confidence in their abilities to implement the post-surgery diet and to identify any potential barriers that may arise. Most reported

feeling greater confidence if they had already begun to make diet and lifestyle changes prior to surgery. They felt less confident in their abilities as a result of their current diet habits. Additionally, the most commonly reported barriers to success were a variety of environmental factors such as work and family dynamic. Table 8 details the themes that were identified, the codes and the related frequency of each code.

Table 8

Themes Related to Diet Confidence

Theme	Code (frequency)
Implementing Postsurgical Diet Changes	Confident (26)
	Soda (11)
	Chips (6)
	Fast food (3)
	Alcohol (3)
Changing Pre-Surgical Eating Habits	Ice cream (10)
	Coffee (10)
	Challenge (7)
	Snacking (3)
	Avoiding (2)
Work-Life Balance	Work (39)
	Family (27)
	Home (27)

Increased Diet Confidence Post-Surgery

Participants discussed the factors that led them to feel greater confidence in implementing the diet changes post-surgery. They stated that practicing the diet and lifestyle habits required after surgery reassured them of their ability to be successful post-surgery.

Implementing Postsurgical Diet Changes Theme

A prominent theme seen throughout many of the participant interviews was the implementation of the postsurgical diet before the procedure. Ten participants (58.82%)

mentioned that they had already begun making diet changes before surgery that mimicked their post-surgery diet restrictions. Nine of these participants (64.28% of females) were female and one participant (33.33% of males) was male.

Specifically, eight participants (47.05%) stated they began to eliminate carbonated beverages, sweets, carbohydrate foods, and alcohol. Participant number 3781, age 30, gastric sleeve surgery, stated “I’m already starting to implement them now I mean, I love Dr. Pepper, I really do… but I don’t drink it anymore. So, if I can kick something I love, then I think I’ll be able to [follow the post-surgery recommendations]” Similarly, Participant number 3345, age 32, Roux-en-Y gastric bypass, stated “The avoiding like the sodas, the juices…. the sugary stuff, I’m already doing that. So it shouldn’t be too much of a difference.”

Additionally, one female participant, age 29, scheduled for Roux-en-Y gastric bypass surgery, had started practicing certain post-surgery lifestyle habits, stating “For months I’ve been practicing small sips.” Seeing their success with these changes even before having surgery increased participants’ confidence in their abilities to continue with these practices after they had surgery.

This theme was seen across all three age groups. Additional participant comments can be found in Table 9.

Table 9

Increased Diet Confidence – Implementing Postsurgical Diet Changes Theme

Age	Comments
25-30	• "I stopped sodas which was a big thing for me because everyone has their go to chips, you know candies… mine was soda! And it was so hard! But I did it! I do start feeling-like it-it sucks in the beginning but it-it it feels better the longer I go. I've already been months without soda." [b] • "I feel pretty confident about it. I'm doing some of it now, like the sodas and stuff like that." [b] • "I'm already starting to implement them now I mean, I love Dr. Pepper, I really do… but I don't drink it anymore. So if I can kick something I love, then I think I'll be able to." [a] • "I've been kind of like switching things in like our family's diet so that way it'll make it a little easier too as far as like… the variety of vegetables and stuff like that." [a] • "If I can stop smoking cigarettes for this surgery like that's- I've smoked cigarettes for years. If I can do that, I can definitely do this." [b] • "For months I've been practicing small sips" [b]
31-35	• "I already started doing some of it. So I think it's pretty good. I should be able to adapt fine." [a] • "I'm… positive it's going to be hard you know. But… I've cut down the soda. So I feel like that's good. I don't really eat a lot of like the junk food or chips or anything like that." [b] • "The avoiding like the sodas, the juices; the sugary stuff, I'm already doing that, so it shouldn't be too much of a difference" [b] • "I think it'll help because I've tried to implement them already; I have definitely cut back on the chips and the candy." [c] • "I stopped eating fast food, and red meats, sodas, and all that stuff. I stopped all of that already." [c]
36-41	• "I've already been working on it; I've been losing some weight." *[a] • "Alcohol was my favorite and I got rid of doing that and soda. I used to drink a lot of soda, I don't drink it no more." *[a] • "Oh I'm pretty confident in being able to do that because I've already been umm doing things and changing things since the beginning of trying to get the surgery." [b] • "I feel pretty confident because like I said, I mean as it is right now, to this day, I already eat pretty healthy. I just can't lose the weight…I don't eat too much starchy stuff, I don't eat a lot of chocolate, so I don't have like that kind of… that kind of addiction or triggers to want that." [b] • "It's rare now when I touch soda. I could drink 3 cans a day, so now I see it, but I don't crave it. Now I replace it a lot with water." [b]

Notes: Age 25-30, comments from three participants. Age 31-35, four participants commented. Age 36-41, three participants commented. (*) male participant. [a] Sleeve Gastrectomy, [b] Roux-en-Y Gastric Bypass, [c] Duodenal Switch Loop.

Decreased Diet Confidence

Participants anticipated success following surgery was dampened as a result of their current eating habits and diet practices. Environmental factors also had an impact, as work and home life-imposed time constraints that could be a barrier.

Changing Presurgical Eating Habits Theme

Participants known presurgical food cravings and habits affected their confidence in implementing the post-surgery diet. Fifteen participants (88.23%) stated that their current cravings, comfort foods and eating habits did not align with post-surgery diet recommendations. Six participants were female and two were male.

Of the fifteen participants who commented on pre-surgery diet habits, eleven participants (64.70%) mentioned that their current habits of snacking, lack of portion control and not pre-preparing meals and lunches for work decreased their confidence. Participant number 1689, age 32, having Roux-en-Y gastric bypass surgery, stated

> Not bringing my own lunch, so I'm going to run to the store to get something from the deli or let's go out to eat, or let's go have Starbucks. Now it's things like that I know I shouldn't be doing.

Similarly, participant number 1953, age 29, having Roux-en-Y gastric bypass, stated "I have a problem night eating. In the middle of the night eating, that's going to be my problem."

Four participants (23.53%) also stated they currently enjoyed eating ice cream, chips and candy and were concerned with how they were going to be able to give those up after surgery. Participant number 2787, age 26, gastric sleeve surgery, stated

> I just really love ice cream. Everything else, you know I can go without. It's just the ice cream. I love ice cream too much. I can't leave all that. And also beans for the moment, because I really love beans.

One male participant, age 37, having Roux-en-Y gastric bypass, commented on this factor as well, stating "I know that I like to eat so it's going to be hard to not grab a handful of candy and eat it all at once."

Participants current diet habits caused some uneasiness regarding the diet transition after surgery. This theme was seen across all three age groups. Additional comments regarding this theme can be seen in Table 10.

Table 10

Decreased Diet Confidence – Changing Presurgical Eating Habits Theme

Age	Comments
25-30	• "I just really love ice cream. Everything else, you know I can go without. It's just the ice cream. I love ice cream too much. I can't leave all that. And also beans for the moment, because I really love beans" [a] • "So I struggle a little bit with overeating, like I just get bored and start eating." [a] • "I think portion control would be hard because … I'm used to, you know I'm um doing it now, but it's going to go from what I'm doing now to like a fourth of that." [b] • "I'm a coffee drinker, like all day every day and I think like that is what's gonna really mess me up mentally!" [b] • "I have a problem night eating. In the middle of the night eating, that's going to be my problem." [b] • "It is going to be challenging because like I said…I-I am going to have temptations. Because they're not going to follow my diet." [a] • "Probably with the whole starchy foods, sugary food thing because you know that's everybody's favorite so to get-get used to eating none or at least not as much or not as often, that's going to be a little bit different." [b] • "So I feel like my stress starving is something I'm- which I'm trying to break that now." [a]

Age	Comments
31-35	• "I think avoiding like sugar, sweets, Yea I think that's the hardest part." [a] • "I like to eat chocolate, so I'm trying to avoid sugar as much as I can, but I think that's the hardest part right now." [a] • "Not bringing my own lunch, so I'm going to run to the store to get something from the deli or let's go out to eat, or let's go have Starbucks. Now its things like that I know I shouldn't be doing." [b] • "The meal prepping, it's probably going to be that……. That for me because, I mean I have to feed all my boys and then I'm going to have to, you know, get my little plate with my food on this side! So that's probably going to be…. Where I'm going to have a little bit of a challenge." [b] 3345 • "I've been thinking about it a little bit because I like snacking." [c] • "Also the water consumption, because I like drinking a lot of water like so I think it's going to be really umm tough for me to like train myself." [c]
36-41	• "I know that I like to eat so it's going to be hard to not grab a handful of candy and eat it all at once." *[b] • "Changing of how I drink. Going from gulping to sipping. But also sugar is going to be a tough one for me." *[b] • "I can go all day long with just eating cheese and crackers here and there and drinking coffee. And I just think that's going to be the hardest for me." • "Maybe snacking too much, because, you know, I like to eat my breakfast and then I like to have a couple snacks, but nothing too big so maybe, snacking too much" [a] • "Honestly, I feel like the only thing that's going to be difficult for me is um, the water! I feel like I drink a lot of water and I love water, but there are times, where like, I just feel like I need water even though I will be drinking water all day. So I'm afraid that I worried, what if I get too much water or what if I throw it up or like, I'm worried about that." [b] • "Because I'm one of those that, if I'm craving something, I like to have it or try it out." [b]

Notes: Age 25-30, comments from six participants. Age 31-35, comments from five participants. Age 36-41, comments from four participants. (*) male participant. [a] Sleeve Gastrectomy, [b] Roux-en-Y Gastric Bypass, [c] Duodenal Switch Loop.

Work-Life Balance Theme

Seven female participants (50% of females) reported outside factors such as work and family influences that could be barriers to diet implementation. No male participants commented on this factor.

Five participants (35.71% of females) stated that limited break times at work could be a potential barrier to diet implementation. Participant 4853, age 29, scheduled for gastric sleeve surgery, stated “I work at Amazon. I don’t have a lot of time. Its only like 10 minutes in the morning, half an hour during lunch time and then another ten minutes after umm, like in the afternoon.” Participant number 2787, age 26, receiving gastric sleeve stated “Just probably just drink more water at work instead of eating a snack during lunch, because usually they have snacks, it’s like right there, so I’m going to have to say no.”

Additionally, two participants (14.28% of females), mentioned a busy home life and family influences decreased their confidence when thinking about incorporating the new diet after surgery. Participant number 1689, age 32, Roux-en-Y gastric bypass, stated

> It might be a little bit harder with my own family because they just, they love to eat! But none of them are as obese as me so they don’t understand it I guess you can say. They’re like eat this, eat that, this is good, you know, so that’s going to be a challenge.

This theme of work-life balance was seen in each age group. However, only one participant in the 36–41-year-old age group commented on this factor. Additional comments regarding this theme are shown in Table 11.

Table 11

Decreased Diet Confidence – Work- Life Balance Theme

Age	Comments
25-30	• "Just probably just drink more water at work instead of eating a snack during lunch, because usually they have snacks, it's like right there, so I'm going to have to say no." [a] • "You know sometimes we stress eat when were stressed out. There's times where I have taken, you know, some nice little slice of chicken to work, but then I work at Burger King, so then I turn around and I'm like, nope I don't want (it). It gets real stressful! Then turning around, I go 'okay, I'm just going to get this and that and I need those fries and I want to eat those fries!' So then I'm sitting out there in my van feeling a little better!" [b] • "I work at Amazon. I don't have a lot of time. Its only like 10 minutes in the morning, half an hour during lunch time and then another ten minutes after in the afternoon." [a] • "I think it's going to be challenging because I don't drink as much water as they want us to drink. And even more at work I don't have the time to drink water." [a]
31-35	• "It might be a little bit harder with my own family because they just, they love to eat! …But none of them are as obese as me so they don't understand it I guess you can say. They're like eat this, eat that, this is good, you know, so that's going to be a challenge." [b] • "The water intake every 5 minutes, I'm sure that's going to be something that I have to start practicing now. That's going to be hard…working, then being at home and trying to juggle everything." [b] • "I think the water, probably, every five minutes. Because I'm going to be at work… but if I have my little shot, it'll be … I'll just have to remember, you know go do one patient, come back." [b] • "The only thing that's going to be challenging I think it's that, saying no to her food." [c]
36-41	• "I'm thinking probably, for work, I get so used to – you know, I'm a workaholic and sometimes I forget to eat my meals" [b]

Notes: Age 25-30, three participants commented. Age 31-35, three participants commented. Age 36-41, one participant commented. [a] Sleeve Gastrectomy, [b] Roux-en-Y Gastric Bypass, [c] Duodenal Switch Loop.

Post-Surgery Quality of Life

A variety of survey questions asked participants about their physical, social, and mental health. Participants stated their physical abilities were limited in terms of activities of daily living and participating in leisure activities. Participants also

anticipated improvements in their physical appearance following surgery. Many participants anticipated that their post-surgery lifestyle would impact their social eating events, social interactions, and special events. Participants were hoping for improvements in anxiety and depression symptoms and self-perception following surgery.

Perceived Physical Changes

Participants referred to their physical abilities in terms of their limited mobility, energy, and stamina. This further limited their ability to carry out daily activities and leisure activities. Additionally, participants commented on their perceived changes in physical appearance following surgery. Table 12 details the themes that were identified, the codes, and the related frequency of each code.

Table 12

Themes Regarding Perceived Physical Changes

Theme	Code (frequency)
Activities of Daily Living	Tired (17)
	Energy (16)
	Breath (12)
	Move (9)
	Walk (8)
	Wipe (3)
	Stand (2)
Extracurricular Activities	Outside (12)
	Walking (10)
	Activities (4)
	Fishing (3)
	Hiking (3)
Physical Appearance	Confident (26)
	Outfit (3)
	Embarrassed (3)
	Clothes (2)
	Not Comfortable (2)

Activities of Daily Living Theme

Participants reported difficulty with simple activities such as going up and down sets of stairs in their homes, getting out of bed or performing their personal hygiene. Fifteen participants (88.23%) commented on this theme, twelve females and three males.

Five female participants (35.71%) stated that they got tired and short of breath easily and were not able to complete basic physical activities without taking multiple breaks throughout. Participant number 4148, age 31, gastric sleeve surgery, stated

> Especially since my house is a two-story house, I go up and down the stairs, doing laundry, different things. I get really winded. So especially that, I believe after surgery is gonna be better for me. And even just going for walks and stuff, all that is going to improve after surgery.

Along the same lines, participant number 4889, age 31, scheduled for Duodenal Switch Loop surgery, stated

> I can't even roll out of bed without feeling like a turtle on its back. It's so hard! I feel like a disabled person, and I feel like after the weight loss… I'm going to be so much more different and have, like have so much agility and just move, be able to move and do things without getting tired and without so much bodily pain.

Fourteen participants (82.35%) commented on general mobility limitations and the desire for more energy throughout the day. Participant number 1773, age 39, Roux-en-Y gastric bypass, stated "I just want to gain that energy and have that- that full force you know to be doing that um you know kind of does stop me from doing at the moment." Similarly, participant number 2787, age 26, having gastric sleeve surgery, stated

> My physical condition is bad and the arthritis. I feel like once I'm able to adjust my body I will feel a little bit lighter…and I feel like I'll be able to do a little bit more than I could have—than I can do now.

Three male participants commented on this factor as well. Participant number 3608, age 41, scheduled for duodenal switch loop surgery stated "It's hard… It'll be a lot easier to move, I won't get tired… I mean… be able to…bend down and do stuff."

Finally, two female participants stated they found it difficult to perform their own hygiene. Participant number 1953, age 29, Roux-en-Y gastric bypass surgery, stated "I can hardly umm, reach to wipe myself and that's just... that's horrible." Participant number 4889 added to this idea, stating

> It's really hard like even for me to wipe. So, it-it, I really have to contort myself and it, like I pull muscles and all that kind of stuff. I just don't want that anymore. I want to be able to do things freely.

Participants expected significant improvements and far fewer limitations in these areas following surgery. This theme was seen to be prominent across all three age groups. Additional comments related to this factor can be found in Table 13.

Table 13

Physical Abilities- Activities of Daily Living Theme

Age	Comments
25-30	• "My physical condition is bad and the arthritis. I feel like once I'm able to adjust my body I will feel a little bit lighter…and I feel like I'll be able to do a little bit more than I could have and can do now." [a] • "It does suck sometimes when my kids say come on mom lets go outside and I can only do it for a short amount of time before I gotta sit down." [b] • "I can hardly reach to wipe myself and that's horrible" [b]

Age	Comments
31-35	• "I want to be able to like actually… do stuff and have like real energy without having to get all jacked up on caffeine and I like want to do stuff, and not just be like oh no, I got to… I got to breath you know." [b] • "I live in the third floor so…its good when I'm going down but when I'm coming back, I'm trying to catch my breath every time I come back!" [a] • "I'm currently on disability because of my back umm ... if I could at least get the weight off and get the pain off my back I'd even be able to wear a back brace more comfortably. So that maybe I could eventually do the full capability of my job." [a] • "Especially since my house is a two-story house, I go up and down the stairs, doing laundry, different things. I get really winded. So especially that, I believe after surgery is gonna be better for me. And even just going for walks and stuff, all that is going to improve after surgery" [a] • "Not getting so tired with my kids because they're full of energy right now. I don't want to be that mom that's just sitting down because I can't do it or I feel uncomfortable running." [b] • "I feel like I don't have enough energy even when I drink coffee so I want to hopefully reach the point where I don't need coffee to feel energy and still want to keep going." [b] • "I want to be able to move, I want to be able to… be able to chase my niece around the house. I don't want to be out of breath walking from my bedroom to the kitchen." [c] • "I want to be able to do things freely, and move around freely and be more active and be more energetic" [c] • 'I can't even roll out of bed without feeling like a turtle on its back. It's so hard! I feel like a disabled person and I feel like after the weight loss… I'm going to be so much more different and have, like have so much agility and just move, be able to move and do things without getting tired and without so much bodily pain." [c] • "It's really hard like even for me to wipe. So, it-it, I really have to contort myself and it, like I pull muscles and all that kind of stuff. I just don't want that anymore. I want to be able to do things freely. [c] • "Obesity for me has been so debilitating and it, I feel like a disability so that-that is like the one thing I want to achieve is to get out of feeling like a disabled person." [c]
36-41	• "Get more exercise in and be able to move better." *[a] • "It's hard… It'll be a lot easier to move, I won't get tired… I mean… be able to…bend down and do stuff." *[c] • "When I get down on the ground or something and come back up, I'm feeling it hurt, so sometimes I feel like the weight is hurting my knees." [a] • "Sometimes it's hard for me to breath so, when I lose the weight, that will improve, so I will be able to stand more, walk more, do more, and then I'll be able to breath better and be able to do more physical activities that I enjoy." [b]

Age	Comments
	• "I just want to gain that energy and have that- that full force you know to be doing that um you know kind of does stop me from doing at the moment." [b] • "I'm moderately active right now. I've been doing a lot of landscaping in my yard. But I believe it will change in ways that I'll be going out in the community more and doing more"[*b]

Notes: Age 25-30, five participants commented. Age 31-35, four participants commented. Age 36-41, six participants commented. (*) male participant. [a] Sleeve Gastrectomy, [b] Roux-en-Y Gastric Bypass, [c] Duodenal Switch Loop.

Extracurricular Activities Theme

Four female participants (28.57% of females) mentioned enjoying outdoor activities such as fishing, paddle boarding and hiking, but opted out of those activities because they felt limited by body weight. No male participants commented on this factor.

Participants had a desire to participate in several extracurricular activities, however, were not comfortable doing so. Participant number 4747, age 34, having duodenal switch loop surgery, stated

> During the summer, my cousins are very active. They love to go camping and love to go kayaking at the lake and get the paddle boards out on the lake and stuff like that you know and I'll tag along with them but I'm just… on the shoreline you know, and It's like I want to be part of the fun. I want to be on those paddle boats, jump into the lake and swim back. I want to be able to go hiking up a little mountain or whatever and feel that accomplishment when I reach the top.

Similarly, Participant number 1009, age 37, Roux-en-Y gastric bypass surgery, stated "I just feel like I am too big for certain things and so I don't want to try them because I don't want to fall or break something and get embarrassed." Only one participant in the oldest and youngest age group commented on this factor.

Participants attributed these physical difficulties to their excess body weight and therefore anticipated significant improvements in these areas following bariatric surgery. This theme was seen in each age group. Additional comments relating to the theme of limited physical abilities can be found in Table 14.

Table 14

Physical Abilities – Extracurricular Activities Theme

Age	Comments
25-30	• "I'm not able to do some of the activities I used to enjoy like hiking, going for walks, like I get really tired easily and I have to take more breaks." [a] • "That way I feel like I won't hold everyone back because of how slow I walk. And if um after some of this weight is off, hopefully I'll be able to catch up." [a]
31-35	• "I eventually want to start hiking. I would love, like once I start feeling better, I would love to start doing like these little marathons that I see one of my coworkers do. That's my goal in a year or so." [b] • "During the summer, my cousins are very active. They love to go camping and love to go kayaking at the lake and get the paddle boards out on the lake and stuff like that you know and Ill tag along with them but I'm just… on the shoreline you know, and It's like I want to be part of the fun. I want to be on those paddle boats, jump into the lake and swim back and I want to be able to go hiking up a little mountain or whatever and feel that accomplishment when I reach the top." [c]
36-41	• "I like to go fishing, I like to go out, and sometimes when I get into the boat, it's hard for me to get in and out of the boat. I feel like I'm going to top it over. Or you know my brother just got a dirt bike, they're like "oh yea you can ride it" I said no I cannot, I will pop that tire! "I just feel like I am too big for certain things and so I don't want to try them because I don't want to fall or break something and get embarrassed." [b] • "I want to be able because I like to do outside things, I like to go fishing, I like to go camping, I like to do stuff, you know outdoorsy activities, and stuff like that and I just don't feel like I have the energy like if I walk a good amount I run out of breath and I don't like that, you know so I want to be able to do more outside daily activities" [b] • "So, when I lose the weight, that will improve, so I will be able to stand more, walk more, do more, and then I'll be able to breath better and be able to do more physical activities that I enjoy." [b]

Notes: Age 25-30, one participant commented. Age 31-35, two different participants commented. Age 36-41, one participant commented. [a] Sleeve Gastrectomy, [b] Roux-en-Y Gastric Bypass, [c] Duodenal Switch Loop.

Physical Appearance Post-Surgery Theme

A common theme that appeared with many participants was related to physical appearance. Eight participants (47.05%) made comments about their appearance, seven were female and one was male.

All eight participants discussed feeling self-conscious, uncomfortable, and unattractive when making clothing choices. Their body weight dictated what clothing they felt was acceptable to wear. Two participants (11.76%) specifically made efforts to disguise themselves before surgery by wearing specific clothing to hide certain aspects of their body to appear thinner and fit in better. Participant number 1953, age 29, Roux-en-Y gastric bypass surgery, stated "I wear waist trainer(s) and then I stuff this fat over here and there and I'm always just uncomfortable. I just know how to make myself look smaller." Participants felt that once they had surgery they would no longer need to make these efforts to disguise themselves.

All participants reported looking forward to improvements in their appearance and wanted to look and feel skinnier and more confident in their physical appearance once they lost weight after surgery. Participant number 3345, age 32, Roux-en-Y gastric bypass surgery, stated

> It's hard to pick an outfit, I'm not going to lie, you know. Because, you don't feel confident, you know, about what your wearing. I feel like, oh man, I wish I could lose a couple pounds, maybe I'd look good.

Participant number 4747, age 34, undergoing Duodenal Switch Loop surgery, stated, "In my mind like, I would see an outfit and I would… picture me in the outfit and I was like okay, not looking bad…. And then I would put it on and I was like yea, no."

The male participant, age 41, having duodenal switch loop surgery, commented that he's looking forward to "Going to the store and having my size."

Participants expressed low self-confidence prior to surgery because they did not feel physically attractive and hoped for significant improvements once they had surgery. This theme was seen in all three age groups. Additional comments regarding physical appearance can be found in Table 15.

Table 15

Anticipated Physical Appearance Post-Surgery Theme

Age	Comments
25-30	• "I'll look healthier, umm maybe it'll give me more confidence." [a] • "Not comfortable with how I look, my body weight is just too much, it's too heavy" [a] • "I'm tired of not fitting into my clothes" [b] • "I went to a concert the other day and I felt so pretty when I was at home, but then I got to the concert and I saw everybody else and I was just like oh…yea, I felt like embarrassed, I felt stupid for even trying. I think I would be better if I would feel a lot better. I know it's not going to answer all of my self-esteem issues but, I know if I could at least fit it would be better." [b] • "I just know how to make myself look smaller." [b] • "Not feel so like, oh gosh I gotta wear a sweater with everything, everything's got to be black because its slimming." [b]
31-35	• "It's hard to pick an outfit, I'm not going to lie, you know. Because, you-you don't feel confident, you know, about what your wearing. I feel like oh man I wish I could lose a couple pounds, maybe I'd look good" • "In my mind like, I would see an outfit and I would… picture me in the outfit and I was like okay, not looking bad…. And then I would put it on and I was like yea, no. But if you don't feel it's not going to really show and radiate. I think… it's just going to be a confidence booster." [c] • "Perhaps after the weight loss, I will feel much more comfortable with myself. Umm, I'll have more energy, I'll have more confidence, ill want to dress nice and do my hair and do my makeup, because I don't do none of that. I look like a freaking 50-year-old woman probably." [c]

Age	Comments
36-41	• "And that's for me, honestly, I my abdomen, just gets smaller I would be confident and feel better, you know wearing nice jeans." [b] • "Maybe more confident to be able to wear certain things." [b] • "Going to the store and having my size, where the fat people section is at."*[c]

Notes: Age 25- 30, two participants commented. Age 31- 35 three participants commented. Age 36 – 41, three participants commented. (*) male participant. [a] Sleeve Gastrectomy, [b] Roux-en-Y Gastric Bypass, [c] Duodenal Switch Loop.

Anticipated Impact of Surgery on Social Factors

Participants anticipated changes to their social interactions following surgery. Social eating and special events were two areas where participants expected to see changes after surgery due to their strict diet and lifestyle. Additionally, participants currently chose to avoid engaging in social interactions and anticipated increased confidence and willingness to participate in social engagements. Table 16 details the themes that were identified, the codes and the related frequency of each code.

Table 16

Themes Regarding Anticipated Impact of Surgery on Social Factors

Theme	Code (frequency)
Social Eating	Out to eat (6)
	Order (4)
Special Events	Challenge (7)
	Holidays (5)
	Parties (3)
	Birthday (3)
	Gathering (2)
Willingness to Participate	Want to go (5)
	Lose weight (5)
	Say no (4)
	Socialize (3)
	Embarrassed (3)
	Weight gain (3)

Social Eating Theme

A total of six female participants (42.85% of females) commented on the anticipated difficulties involved with eating out after they have surgery. No male participants commented on this factor.

Due to diet restrictions following surgery, eating outside of the home would require significant thought and planning. Four participants (28.57% of females) stated that they currently enjoyed eating out at restaurants with family and friends. Participant number 2787, age 26, gastric sleeve surgery, stated "Going out, because I used to go out to eat, go on dates, so it'll be a little bit harder. I'm going to have to rearrange, do something better or do something healthier." Similarly, participant number 1773, age 39, scheduled for Roux-en-Y gastric bypass, stated

> We're one of those kinds of families where we like to go out, once in a while, you know to go eat and gather and just learning to reevaluate how you're going to eat, what you're going to order, instead of larger portion meals, maybe switching to a smaller size.

Two participants (14.28% of females) mentioned feeling left out when they saw others eating foods that were not permitted for them. Participant number 3781, age 30, having gastric sleeve surgery, stated

> So, it's going to be hard to see other people doing things that I can't do like the ice creams- like going out to ice cream with the kids for a while I'm not going to be able to do.

Participants would have to rethink their choices in these situations after surgery. This theme was found within each age group. Only one participant in each of the two

older age groups commented on this factor. Additional comments regarding this theme can be seen in Table 17.

Table 17

Impact on Social Factors-Social Eating Theme

Age	Comments
25-30	• "Going out, because I used to go out to eat, go on dates, so it'll be a little bit harder. I'm going to have to rearrange, do something better or do something healthier." [a] • "So, it's going to be hard to see other people doing things that I can't do like the ice creams- like going out to ice cream with the kids for a while I'm not going to be able to do" [a] • "Sometimes me and my sisters like to go out and um eat or have a drink and having to say no or say can I not umm, can we not go eat or drink, can we just hang out without there being food or drink involved." [b]
31-35	• "Going to a restaurant, you know and I'm going to have to either, eat before or watch them eat." [b] • "It's going to be kind of sad you know that I won't be able to enjoy with them." [c]
36-41	• "We're one of those kinds of families where we like to go out, once in a while, you know to go eat and gather and just learning to reevaluate how you're going to eat, what you're going to order, instead of larger portion meals, maybe switching to a smaller size." [b]

Notes: Age 25-30, three participants commented. Age 31-35, two separate participants commented. Age 36-41, one participant commented. [a] Sleeve Gastrectomy, [b] Roux-en-Y Gastric Bypass, [c] Duodenal Switch Loop.

Special Events Theme

Six participants (35.29%) noted specifically that social gatherings such as BBQ's, birthday parties and holiday gatherings were going to be difficult after surgery. One participant was male (33.33% of males), and five participants (35.71% of females) were female.

These special events typically included food and drinks that were not in alignment with the post-surgery diet. Participants anticipated feeling tempted and/or left out during

these situations after surgery. Participant number 3488, age 29, and receiving Roux-en-Y gastric bypass surgery, stated "Maybe just like BBQ's all the good stuff! That would be a little bit difficult." Similarly, participant number 1689, age 32, scheduled for Roux-en-Y gastric bypass surgery, stated "The holidays are right around the corner, just being around all the cultural foods that were so used to eating and knowing that I can't have it might be a little bit of a challenge." The male participant, age 37 and undergoing Roux-en-Y gastric bypass surgery, commented "not too many, other than birthday parties."

This theme was seen in all three age groups. However, this theme was more prominent in the 31–35-year-old age group as three of the five participants commented on this factor. Additional comments related this theme can be found in Table 18.

Table 18

Impact on Social Interactions- Special Events Theme

Age	Comments
25-30	• "Maybe just like BBQ's all the good stuff! That would be a little bit difficult." [b]
31-35	• "The holidays you know; I think that's going to be challenging." [c] • "Especially with the holidays around the corner. That's going to be an issue. They're going to say, here have some more, here have some more." [b] • That's probably the only thing, just the holidays because coming from a Hispanic family its tough everybody eats a lot, like party food." [c] • "The holidays are right around the corner, just being around all the cultural foods that were so used to eating and knowing that I can't have it might be a little bit of a challenge." [b]
36-41	• "Not too many, other than birthday parties." *[b]

Notes: Age 25-30, one participant commented. Age 31-35, four participants commented. Age 36-41, one participant commented. (*) male participant. [a] Sleeve Gastrectomy, [b] Roux-en-Y Gastric Bypass, [c] Duodenal Switch Loop.

Willingness to Participate Theme

Avoidance of social interactions and social settings before surgery was a common theme throughout the interviews. Seven participants (41.17%) reported avoidance of social situations. Six participants (42.85% of females) were female and one participant was male (33.33% of males).

Six participants (35.29%) reported avoiding social situations due to anxiety and lack of confidence. Participant number 4747, age 34, scheduled for duodenal switch loop procedure, stated

> As far as like going somewhere outside of that I'll tend to like no, it's okay or you know, dating is like out of the question. Doesn't even exist. But I think once… I start to lose weight; it's going to just build that confidence slowly and it'll make me become more of the social butterfly that I was before.

Similarly, participant number 4889, age 31, also undergoing the duodenal switch loop procedure, stated

> Honestly speaking, I have no social life. To be real with you, umm because of my weight gain, and just feeling so disabled… I don't even go out anymore, so I think… perhaps after the weight loss, I'll be able to feel better about myself to like actually get out there and socialize a little bit more.

Two participants (11.76%) expressed embarrassment due to their weight and therefore avoided social activities. Participant number 3781, age 30, having gastric sleeve surgery, stated

> I'm pretty introverted. I don't think much will change. I think I might be a little- maybe a little more outgoing. maybe a little less umm… like that embarrassed to leave the house because people fat shame so much feeling.

The male participant, age 41, having the duodenal switch loop procedure, commented "Well maybe at like pools and stuff. I don't get in pools. I'm confident now I guess, but not enough to take my shirt off in public."

Participants anticipated that their current anxiety and social isolation related to their body weight would be much improved following surgery. They expected to feel more self-confidence and willing to participate socially following weight loss. This theme was seen within all three age groups. Additional comments related to this theme of willingness to participate socially can be found in Table 19.

Table 19

Social Interactions – Willingness to Participate Theme

Age	Comments
25-30	• "I'm pretty introverted. I don't think much will change. I think I might be a little- maybe a little more outgoing. maybe a little less umm… like that embarrassed to leave the house because people fat shame so much feeling." [a] • "I feel more comfortable in my own home, in my own space…and when I do go out, I do have um social anxiety. So hopefully after surgery I will be more open to go out and experience things and won't have as much anxiety" [b]
31-35	• "As far as like going somewhere outside of that I'll tend to like no, it's okay or you know, dating is like out of the question. Doesn't even exist. But I think once… I start to lose weight; it's going to just build that confidence slowly and it'll make me become more of the social butterfly that I was before" [c] • "Honestly speaking, I have no social life. To be real with you, umm because of my weight gain, and just feeling so disabled… I don't even go out anymore, so I think… perhaps after the weight loss, I'll be able to feel better about myself to like actually get out there and socialize a little bit more, you know." [c]

Age	Comments
	• "I think once the weight loss happens, I think I will be much more confident in myself and just feel happier at the fact that I can breathe when I walk, you know wanna be- I'll probably want to go out everywhere." [c]
	• "I feel like I would want to go out more and do more." [b]
36-41	• "I just feel like I am too big for certain things and so I don't want to try them because I don't want to fall or break something and get embarrassed. That's going to change for sure!" [b]
	• "Well maybe at like pools and stuff. I don't get in pools. I'm confident now I guess, but not enough to take my shirt off in public." *[c]

Notes: Age 25-30, two participants commented. Age 31-35, three participants commented. Age 36-41, two participants commented. (*) male participant. [a] Sleeve Gastrectomy, [b] Roux-en-Y Gastric Bypass, [c] Duodenal Switch Loop.

Post-Surgery Mental Health

Participants struggled with diagnosed and undiagnosed anxiety and depression. Much of this anxiety and depression was related to participant body weight. These feelings further perpetuated participants' perception of themselves and their abilities. Table 20 details the themes that were identified, the codes and the related frequency of each code.

Table 20

Post-Surgery Mental Health

Theme	Code (frequency)
Anxiety and Depression	Anxiety (16)
	Happy (12)
	Depression (11)
	Sad (3)
	Frustrating (3)
Self-Perception	Confidence (12)
	Happy (12)
	Self-esteem (4)

Post-Surgery Anxiety and Depression Theme

A total of seven participants (41.17%), six females and one male, described their daily struggle with anxiety and/or depression because of their weight while only four participants (23.52%) reported to be officially diagnosed with depression.

One male participant, age 37, planning to undergo Roux-en-Y gastric bypass surgery, reported social anxiety due to the fear of judgement from other people. This participant stated, "My anxiety gets the best of me at times. I'm hoping that the confidence I do gain from having the surgery will help partly make that go away somewhat."

Three female participants (21.42%) mentioned feelings of depression and sadness related to their body weight and social functioning. Participant number 3345, age 32, undergoing Roux-en-Y gastric bypass surgery, stated

> At that point, like 254. I don't go less; I don't go up. I'm just at that… very frustrating! And stressful and depressing at times too. I want to be happier, And I know that if I'm…. If I could you know, lose a couple… a lot of pounds… I'll be happier.

Similarly, participant number 4747, age 34, having the duodenal switch loop procedure, mentioned "It's very emotional you know, it's just little things like that, that people that don't have issues with their weight can't understand. There's times where I'm feeling very depressed, sad."

Finally, three female participants (21.42% of females) commented on weight related anxiety and depression. Participant number 4889, age 31, planning to undergo the duodenal switch loop procedure, stated "It does make me a bit depressed; it does make

me anxious" when discussing the weight related effects on appearance and social abilities.

Overall, participants hoped that their self-confidence, mood and happiness would significantly improve after having bariatric surgery and the weight related anxiety and depression would subside as well. This theme was seen across all three age groups, with only one participant commenting on this theme in the 36-41-year-old age group. Additional comments related to this theme of anxiety and depression can be found in Table 21.

Table 21

Mental Health- Post-Surgery Anxiety and Depression Theme

Age	Comments
25-30	• "That will help me a lot with my anxiety and depression." [a] • "I'll just feel more confident, less depressed, be able to enjoy more in life." [a] • "I think that maybe feeling a little bit less in pain, and a little bit more comfortable in my own skin will maybe help with the depression a little bit. I'm not sure if that would help so much – and maybe some of the anxiety also because… some of the anxiety is leaving the house sometimes." [a] • "Like have more confidence and get out in the world and own a house and things like that, so I don't really see myself doing that, this overweight because I'm so depressed." [b]
31-35	• "At that point, like 254. I don't go less; I don't go up. I'm just at that… very frustrating! And stressful and depressing at times too. I want to be happier, And I know that if I'm…. If I could you know, lose a couple… a lot of pounds… I'll be happier." [b] • "It does make me a bit depressed; it does make me anxious" [c] • "It's very emotional you know, it's just little things like that, that people that don't have issues with their weight can't understand. There's times where I'm feeling very depressed, sad." [c] • "It does make me anxious when I hear people invite me somewhere I get anxiety about it because I don't want to go." [c]

Age	Comments
36-41	• "My anxiety gets the best of me at times. I'm hoping that the confidence I do gain from having the surgery will help partly make that go away somewhat." *[b] • "I tend to isolate from anxiety of my weight. And I'd like to change that so I can be more outgoing." *[b]

Notes: Age 25-30, three participants commented. Age 31-35, three participants commented. Age 36-41, one participant commented. (*) male participant. [a] Sleeve Gastrectomy, [b] Roux-en-Y Gastric Bypass, [c] Duodenal Switch Loop.

Self-Perception Theme

Participants felt the toll that obesity has taken on their mental well-being. Nine female participants (64.28% of females) expressed that they were not happy with how they looked and felt which affected their mood and happiness.

Participants commented on negative perceptions of themselves and their overall confidence in themselves and their abilities because of their weight. Five participants (35.71% of females) commented on feelings of lacking both self-esteem and self-confidence. Participant number 1773, age 39, having Roux-en-Y gastric bypass surgery, stated

> Just being overweight is not the- the happiest place, you know because you are limited in certain things" and I've been one of those, like okay…. It's not about the physical, there's more beyond that but it does come to a point after a while where your like okay, you know you start not feeling attractive, even to yourself.

Two participants (14.28% of females) solely commented on feeling a lack of self-esteem. Participant number 3345, age 32, scheduled for Roux-en-Y gastric bypass surgery, stated

> You don't feel confident, you know, about what your wearing… But then you have four amazing boys that tell you look beautiful every time you wear a dress.

So, that kind of boosts your- your self-esteem a little but more. Maybe I-I just need to see it too, and I-I just need to see the way they see me.

Additionally, two participants (14.28% of females) solely commented on a lack of self-confidence. Participant number 2787, age 26, undergoing gastric sleeve surgery, stated "I won't feel bad about myself and seeing how much progress I will make, will make me happier seeing that, you know what, I can do this. I'm not going to fail."

All participants anticipated that weight loss would play a major role in helping them achieve the happiness and confidence they currently lacked and positively impact their view of themselves. This theme was seen across all three age groups. Additional comments regarding this theme can be seen in Table 22.

Table 22

Mental Well Being – Self Perception Theme

Age	Comments
25-30	• "I won't feel bad about myself and seeing how much progress I will make will make me happier seeing that, you know what, I can do this. I'm not going to fail." [a] • "I'm going to have confidence to be around those more positive people that are more successful and um definitely go from there rather than stay in this same rut that I've been in this apartment and on welfare, like I got to stop. I got to just get it together" [b] • "I think I would be better if I- I would feel a lot better. I know it's not going to answer all of my self-esteem issues but, I know if I could at least you know… fit in to it better." [b] • "Sometimes I do feel like… um……that my weight has stopped me from going … um… from being as happy as I used to." [a] • "When I look in the mirror, I don't see myself as a pretty girl" [a]
31-35	• "I know my confidence will probably go up more. I'm pretty bubbly, talkative person already but I know just the confidence I hope will kick in." [b] • "I hadn't gotten on the scale… in forever and then I did and then I saw that number and I was like oh my god! When did this happen. And then it kind of like a…. like a switch came on or something where… all of a sudden, I was very aware of how big I had gotten." [c]

Age	Comments
	• "it's like I would look in the mirror and… I didn't see myself as big as I… am." [c] • "I think once… I start to lose weight, it's going to just build that confidence slowly and it'll make me become more of the social butterfly that I was before." [c] • "I believe it's going to improve. I mean every time you improve your health, your body, your self-esteem- my self-esteem will improve." [a] • "You don't feel confident, you know, about what your wearing. But then you have four amazing boys that tell you look beautiful every time you wear a dress. So, that kind of boosts your self-esteem a little but more. Maybe I just need to see it too, and I just need to see the way they see me." [b]
36-41	• "So even though my body size might change its still not going to change how I feel about who I am, it's not going to make me feel any less confident, or I mean maybe more confident." [b] • "When I started gaining the weight. In my brain, I was still thin. I still looked the same as I did when I had seen myself, you know, when I was thin. So as I was gaining the weight, to me I would see myself as thin, or as a smaller framed, but then when I would look in the mirror, I would be like, oh yea, that's right, I'm not!" [b] • "Just being overweight is not the happiest place, you know because you are limited in certain things." [b] • "I've been one of those, like okay…. It's not about the physical, there's more beyond that but it does come to a point after a while where your like okay, you know you start not feeling attractive, even to yourself." [b]

Notes: Age 25-30, three participants commented. Age 31-35, four participants commented. Age 36-41, two participants commented. [a] Sleeve Gastrectomy, [b] Roux-en-Y Gastric Bypass, [c] Duodenal Switch Loop.

Other

Additional themes arose throughout the interviews. Participants were not asked questions specifically about cultural background or the impact it had on post-surgery success. This theme arose throughout many interviews and highlighted an important factor that could affect participants' success after surgery. Furthermore, the concepts of fear and frustration was commonly seen throughout multiple themes previously presented. Table 23 details the themes that were identified, the codes and the related frequency of each code.

Table 23

Other Themes

Theme	Code (frequency)
Cultural Background	Hispanic (5)
	Tortilla (3)
	Mexican (6)
	Sweet Bread (2)
Fear and Frustration	Fear (3)
	Frustrating (3)
	Exhausting (2)
	Scared (3)
Energy and Stamina	Energy (16)
	Move (9)
	Breath (15)

Cultural Background Theme

Five female participants (35.71% of females) stated that their Mexican culture affected their diet and habits. There were no comments regarding this factor from the male participants or participant over the age of 36 years.

Participants commented on the typical Mexican diet and cultural foods as well as the upcoming holiday season. Two participants (14.28% of females) exclusively mentioned common cultural foods, such as tortillas, tamales and sweet breads that were commonly found in their homes. Participant number 4853, age 29, having gastric sleeve surgery, stated

> I'm Mexican, we eat like the sweet bread, we eat tortillas. We eat a lot of tortillas. It is going to be…. different for me because, you know, we're so used to that kind of eating. We eat a lot of oily things, a lot of junk food. It is challenging.

Most participants' surgeries were taking place during the holiday season, so many of these cultural foods were going to be readily available at holiday gatherings during that

time. Two participants (14.28% of females) commented on both the cultural foods and the holiday season. Participant number 1689, age 32, Roux-en-Y gastric bypass surgery, stated

> The holidays are right around the corner, and I know all the sweet breads and hot chocolate, just living with my Mexican… just being around all the cultural foods that we're so used to eating, and knowing that I can't have it might be a little bit of a challenge.

All participants recognized the role of their cultural background and how it could affect their diet and lifestyle after surgery. This theme was seen only in the younger two age groups. Additional comments regarding the theme of cultural impact can be found in Table 24.

Table 24

Cultural Background Theme

Age	Comments
25-30	• "I'm Mexican, we eat like the sweet bread, we eat tortillas. We eat a lot of tortillas. It is going to be different for me because we're so used to eating a lot of oily things, a lot of junk food, and it's challenging." [a]
31-35	• "In the Mexican culture, we just do all the little fried here and the tortillas here and I kind of want to break that cycle with my kids." [b] • "The holidays are right around the corner and I know all the sweet breads and hot chocolate that we're so used to eating, and knowing that I can't have it might be a little bit of a challenge." [b] • Family of course! We're Mexican. That's going to be an issue. They're going to say, here have some more, here have some more." [b] • "Growing up in a Hispanic home. We use a lot of you know oil, salt and all the good stuff that's bad for you." [c] • "I'm Hispanic so, it's going to be really tough. I'll probably still be in my liquid or pureed stage and so it's going to be kind of sad that I won't be able to enjoy with them and I'll have my little soup or whatever." [c] • "My surgery date is November 8th so, it's right before tamale season!" [c]

Notes: Age 25-30, one participant commented. Age 31-35, four participants commented. [a] Sleeve Gastrectomy, [b] Roux-en-Y Gastric Bypass, [c] Duodenal Switch Loop.

Fear and Frustration Theme

An overarching theme that was seen throughout all the sections was the idea of fear. Participants not only expressed fear regarding their health status, but also a fear of missing out on events and activities as well as their favorite foods. They also feared getting injured when participating in activities and feared the changes involved with successful diet implementation. Participant number 4889, age 31, undergoing duodenal switch loop procedure stated

> I know it's going to be like a major um-um learning curve. So I think that is just, it's probably just the fear of it but um I think I will be able to do it. Its just-it's just probably learning how to introduce new things.

Additionally, participant's feelings of fear were often associated with feelings of frustration. Participant's frustrations were deeper than their inability to lose weight. Participants felt frustrated with their physical appearance and being unable to find appropriate clothing. Their frustration also stemmed from being unable to participate physically and socially. Overall, participants experienced fear and frustration as a source of motivation for surgery and a factor affecting their confidence to implement the post-surgery diet. Participants also mentioned fear and frustration when discussing physical changes, social abilities, and mental health. This theme was seen across all three age groups. Participants comments regarding this theme can be seen in Table 25.

Table 25

Fear and Frustration Theme

Age	Comments
25-30	• "I did try a lot of you know, diets, I tried exercising, but exercising hurts my bones and joints a lot. So I felt like nothing was working for me. And then how I keep getting the steroid shots and I keep gaining a lot of weight. So it's very frustrating for me" [a] • "Probably with the whole starchy foods, sugary food thing because you know that's everybody's favorite so to get used to eating none or at least not as much or not as often, that's going to be a little bit different." [b] • "I think it's going to be challenging because I don't drink as much water as they want us to drink. I don't have the time to drink water." [a]
31-35	• "During the summer, my cousins are very active. They love to go camping and kayaking at the lake, and take paddle boards out on the lake and stuff like that. I'll tag along with them but I'm just on the shoreline, and it's like I want to be part of the fun. I want on those paddle boats, jump into the lake and swim back and you know I want to be able to go hiking up a little mountain or whatever and feel that accomplishment when I reach the top." [c] • "We have stuff like that in our family. Stroke and high blood pressure and heart attack and all these things. I'm at the highest weight and I just said no. Like I need to do something about this or I'm going to die!" [c] • "Going to a restaurant, you know and I'm going to have to either, eat before or watch them eat.[b] " • "I know it's going to be like a major um-um learning curve. So I think that is just, it's probably just the fear of it but um I think I will be able to do it. Its just-it's just probably learning how to introduce new things." [c]
36-41	• "I like to go fishing, I like to go out, and sometimes like you know, when I get into the boat, it's hard for me to get in and out of the boat. I feel like I'm going to top it over. Or you know my brother just got a dirt bike, they're like "oh yea you can ride it" I said no I cannot, I will pop that tire! "I just feel like I am too big for certain things and so I don't want to try them because I don't want to fall or break something and get embarrassed." [b] • "Honestly, I feel like the only thing that's going to be difficult for me is um, the water! I-I feel like I drink a lot of water and I love water, but there are times, where like, I just feel like I need water even though I will be drinking water all day. So I'm afraid that- I worried, what if I get too much water or what if I throw it up or like, I'm worried about that." [b] • "Going to the store and having my size; in the fat people section." *[c]

Notes: Age 25-30, three participants commented, Age 31-35, four participants commented, Age 36-41, three participants commented. * Male participant. [a] Sleeve Gastrectomy, [b] Roux-en-Y Gastric Bypass, [c] Duodenal Switch Loop.

Energy and Stamina

A second overlapping theme was energy and stamina, which was seen throughout many themes previously presented. In addition to physical fitness, participants expressed similar physical limitations when discussing their activities of daily living and family and children as a motivating factor. Throughout each of these themes, lack of energy and stamina was a big source of motivation and frustration. Participants were not able to participate in activities they enjoyed for themselves or with their families. Participant number 1689, age 32, undergoing Roux-en-Y gastric bypass surgery, stated "Not getting so tired with my kids because they're full of energy right now. I don't want to be that mom that's just sitting down because I can't do it or I feel uncomfortable running." This theme was seen across all three age groups. Participant's comments regarding this theme can be seen in Table 26.

Table 26

Energy and Stamina Theme

Age	Comments
25-30	• "It does suck sometimes when my kids are like come on mom lets go outside and I can only do it for a short amount of time before I'm like I gotta sit down." [b] • "Not feeling like I'm well enough to keep up with my children as far as running around and doing all that stuff it's exhausting." [a]
31-35	• "Not getting so tired with my kids because they're full of energy right now. I don't want to be that mom that's just sitting down because I can't do it or I feel uncomfortable running." [b]
36-41	• "I want to be able to have more energy. I like to do outside things, I like to go fishing, I like to go camping. I like to do stuff, you know outdoorsy activities, and stuff like that I just don't feel like I have the energy." [b] • "I just want to gain that energy and have full force you know to be doing that you know kind of does stop me from doing at the moment." [b]

Notes: Age 25-30, two participants commented, Age 31-35, one participant commented, Age 36-41, two participants commented. [a] Sleeve Gastrectomy, [b] Roux-en-Y Gastric Bypass, [c] Duodenal Switch Loop.

CHAPTER 5

DISCUSSION

The purpose of this research study was to gain a better understanding of participants motivating factors for undergoing surgery and analyze anticipated changes in self-efficacy and quality of life as it relates to age. The research objectives guiding this study were: to compare and contrast the motivating factors that lead to undergoing bariatric surgery across age groups, describe patients' confidence levels in diet implementation and compare anticipated post-surgery physical, social and mental well-being.

A variety of motivating factors were described by participants, that suggested current health status, weight-related comorbidities, family and kids, and physical fitness were the main motivating factors. Diet confidence was increased by implementing and practicing aspects of the post-surgery diet prior to the procedure. Participants confidence in implementing the post-surgery diet was decreased because of participants' current diet habits. Additionally, work and home life posed an additional challenge that decreased participants' confidence. Participants also anticipated improvements in physical and social abilities as well as their mental health. Finally, themes of fear and frustration as well as energy and stamina were seen to be overlapping throughout some of the themes.

Motivating Factors

The decision to pursue bariatric surgery was often motivated by participants' desire for a healthier and longer life. Participants felt the effect of their current weight on their quality of life and health and were eager to make a change. Participants expressed exhaustion and frustration around their ongoing health struggles implying that most participants were not currently at an optimal health level. Participants of all ages expressed similar feelings of frustration. Although it appears that younger participants appeared to strive for healthier lives, those over the age of 31 made more specific comments about living longer. Research conducted by Sharman et al., (2016) and Jolles et al., (2019) found that health improvements, fear of premature death and/or life-threatening acute events were strong factors fueling the choice for bariatric surgery. Both studies supported the current study, however the prioritization of each theme as a motivating factor differed. Bariatric surgery can provide patients with the chance to regain control over their health and prolong their life.

Comorbid conditions are commonly seen in many overweight and obese patient. Many survey participants were dealing with at least one weight-related comorbidity and were having trouble managing that condition, even with medications. Participants were hopeful for the possibility that these conditions could be completely resolved following surgery. Additionally, some participants were pursuing surgery to prevent disease onset. This indicates that participants were aware of their weight related risk for disease onset and related health complications. All three age groups expressed similar concerns for disease resolution and prevention. Similar results were found by Sharman et al., (2016), Jolles et al., (2019) and Ofori et al., (2020) who also found that bariatric patients were

excited for complete disease resolution and reduction in required medication. These studies made no conclusions regarding the relationship between age and this motivating factor. They support the themes that were identified in this current study.

Family and children were a common motivating factor. Many participants had the responsibility of caring for a family. The current findings suggest that participants felt their abilities to play and interact with their children were limited due to their weight and low energy. Participants wanted to be able to play openly and freely without the worry of weight related limitations. This ties in an earlier theme regarding longevity and health but added further meaning by adding family and children as the main source for this desired outcome. Participants of all ages expressed that their family and children were a strong motivating factor for surgery. The current study shows that regardless of age participants felt the weight-related burden and wanted to take preventative measures. While this theme was prominent in the current study, it was less commonly seen in existing literature. A study conducted by Pearl et al., (2019) briefly studied the factors that motivated participants to have bariatric surgery and named family as a motivating factor behind healthcare workers and self-driven motivation. Although current data suggests that while this idea was of lower priority as a motivating factor, participants still took this factor into consideration.

Physical fitness, specifically mobility and endurance, was another motivating factor noted by participants. Participants expressed feeling very limited by their weight, in terms of what they could do physically. Without energy and endurance, patients had difficulty with daily tasks and couldn’t enjoy any of their favorite activities. Participants of all age groups experienced limitations in their physical abilities and all anticipated

improvements to their fitness after surgery. Research conducted by Jolles et al., (2019) also found physical health improvements and related quality of life enhancements were strong motivating factor for participants pursuing bariatric surgery. Additionally, a slightly larger study conducted by Altaf et al., (2019) found physical fitness to be the third motivating factor that participants considered behind existing comorbidities and future health problems. This study had a similar demographic make-up to the current study. Both studies support the current research in that enhanced physical fitness was one of the factors that motivated participants to pursue surgery.

The final factor participants were motivated by was their previous failed weight loss attempts. Participants mentioned that they had tried various diets, exercise, and appetite control medications to achieve weight loss. With these methods, participants were not able to achieve long term weight loss, resulting in frustration, low self-esteem, anxiety, and depression. This frustration appears to be main source of motivation seen in participants in this study. Sharman et al., (2016), Jolles et al., (2019) and Choi et al., (2018) also found similar results. Participants in all three studies expressed feelings frustration and disappointment in the results with all previous weight loss attempts. These studies indicated that participants felt that surgery was their next best option in order to achieve sustainable weight loss.

The current study population prioritized health and wellness as a motivating factor, followed by comorbid conditions, family and children, physical fitness, and failed weight loss attempts. This was emulated in existing research which showed similar motivating factors but with slightly different levels of importance.

Success with Diet Implementation Post-Surgery

Following bariatric surgery, participants are required to follow a very strict diet to prevent complications and to facilitate weight loss. Given that this diet is much more limited compared to most patients' pre-surgery diets, some uneasiness regarding this change is anticipated. Participants felt most confident about implementing their post-surgery diet when they had begun to implement some restrictions before surgery. When participants experienced success with eliminating soda or carbohydrates, they felt more confident. This theme was seen across all three age groups. Limited research is currently available specifically regarding the implementation of post-surgery diet changes prior to the procedure. One study conducted by Ariel-Donges et al., (2020) did look at participants' confidence with the postsurgical diet. They found that participants felt they had a good understanding of the recommendations and therefore felt confident about implementing the post-surgery diet. Although this study focused more on participants general understanding of diet recommendations, rather than the implementation of the recommendations it still provides valuable information. Participants understanding of the diet recommendations is the first step to successful implementation. Therefore, this study supports the current research because participants understanding of the diet recommendations plays into their ability to implement them successfully, especially even before having surgery.

Conversely, participants had diet habits prior to surgery that they knew they would have to change once they had surgery. Many did not feel fully confident about this transition as it would require them to give up their favorite food items and change long-standing diet habits. Specifically, participants mentioned having a "sweet tooth" and

enjoyed sweets, bread, and other carbohydrates. Their current craving for these foods made it difficult to imagine going without. All age groups experienced similar feelings. Currently available research does not provide support this theme. This current study can provide new insight into a factor that has been less commonly researched. Identification of this theme is also a crucial piece of information for Registered Dietitians. Becoming aware of this barrier will allow Registered Dietitians to better support patients by providing tailored nutritional guidance to address this concern.

Another theme related to decreased diet confidence with existing environmental factors that affected participants' abilities to implement and adhere to the post-surgery diet. Participants felt that their work schedules and environments were not supportive of their new lifestyle after surgery. Their work schedule either did not allow for adequate time to eat meals, drink their fluids or because they were constantly tempted by food and snacks left in the office. Additionally, many women mentioned that their busy family schedule and role in preparing meals for their family could pose a challenge when they are following a separate diet. This highlighted an important consideration regarding the roles and responsibilities of female patients in the family structure and how these plays into post-surgery success. Similar experiences were seen across all three age groups. Participants younger than 35 years old commented on this factor more frequently compared to the oldest age group. This could indicate a greater social influence felt by younger participants. These aspects were supported by recent research conducted by Ariel-Donges et al., (2020). These participants identified their busy work schedule and food temptations from family and friends as important barriers to fully adhering to the dietary recommendations.

Changes in Physical Abilities

Almost all participants described their current physical abilities as suboptimal and a limiting factor in their daily life in some way. Participants physical weight stopped them from engaging in physical activities such as paddle boarding or dirt bike riding because of the possible embarrassment in the event of injury. Participants also had difficulty completing simple acts such as walking or getting out of bed. These physical limitations were taxing on participants emotional and mental health. All three age groups expressed similar emotional stress and limitations on daily activities. Participants associated weight loss with significantly fewer physical limitations and greater enjoyment in their day-to-day life. These results were supported by research conducted by King et al., (2016) and Zabatiero et al. (2016). Both studies concluded that prior to surgery, participants experienced extreme bodily pain and limited physical activity related to obesity. King et al., (2016) also went on to assess post-surgery physical changes and found significant improvements in physical function with weight loss. This existing research provides support for positive pre- and post-surgery physical changes.

Changes in Physical Appearance

Participants comments on physical appearance surround themes of dissatisfaction and physical discomfort. Most comments on physical appearance were from the female participants who were interviewed. Many felt the social pressures of needing to look a certain way, and therefore many took steps to contour their body to achieve the desired appearance. Participants also struggled with finding clothes that adequately fit their body shape and made them feel pretty or attractive. It was also stated by many participants that social pressures and weight stigmatization were a significant part of their negative

thoughts on physical appearance. Similar findings were seen in the research conducted by Godoy-Izquierdo et al., (2020) who explored the relationship between excess body weight and body image. They also found that obese participants were much less satisfied with their body and appearance. Specifically, women had a lower perception of their body image and felt they were perceived poorly by others. Megias et al., (2018) also found similar results with further support for the impact of societal norms and social media presentation fueling body dissatisfaction in the obese and overweight population. Other research also found dissatisfaction with physical appearance to be considered a motivating factor for surgery as well (Pearl et al., 2019). Interestingly, physical appearance was not mentioned as a motivating factor for pursuing bariatric surgery. Overall, weight loss was seen to be associated with improvements in body image and satisfaction with physical appearance.

Social Eating and Special Events

The diet after surgery differs significantly from the average American diet. The constraints and limitations had participants feeling left out when they thought about socializing after surgery. All ages anticipated feelings of sadness and exclusion. Their post-surgery diet would impact their decisions when going out to eat or attending parties. These feelings often stemmed from seeing their family and friends eat the foods that are restricted on their post-surgery diet. Most existing studies do not explore these emotional effects of socializing after bariatric surgery. However, research conducted by Coulman et al., (2020) briefly touched on the fact that participants still felt different for their dietary restrictions after they had surgery. Coulman's research as well as this current study, gathered that participants continued to feel different from others during social situations,

even though they were making the decisions to achieve a sense of normalization. For similar reasons, attending special events after surgery were going to be a challenge. Participants stated they anticipated they would be tempted by the foods available at events and would have to avoid consuming some of these items. Research conducted by Speck (2016) found that adjusting to life events such as holidays, special events, going back to work and even traveling added additional stress to participants. Having social support from family and friends in these situations proved to be beneficial. Additionally, Registered Dietitians can provide support as well as resources on how to best navigate social events where food is a focus.

Willingness to Participate in Social Activities

A common theme regarding social interaction, was participants' choice to avoid participating in social situations. Regardless of age, participants felt most comfortable in their own homes where they were free of judgment from others and social pressures. For the most part, participants felt a sense of safety and security if they were surrounded by family and in their home setting. Participants' anxiety increased when presented with social situations appears to be multi-faceted, combining various themes determined in this research with body dissatisfaction, societal judgement, and limited physical abilities among a few reasons it is avoided. All three age groups experienced similar apprehension towards socializing. All these social factors were supported in research conducted by Homer et al., (2016) who was also looking at participants' experiences prior to surgery. In this article, participants experienced a similar social burden because of their weight, appearance, and potential judgement from others. These participants bore a heavy burden from weight stigmatization, which further exacerbation their desire for isolation prior to

surgery. Similar to the current study, Homers research also found that participants had strong feelings and expectations of what bariatric surgery would help them achieve after surgery.

Anxiety/ Depression

Many participants struggled with weight-related anxiety and depressive symptoms, whether it was diagnosed or not. According to demographic information that was collected, the younger two age groups had a greater incidence of diagnosed mental health issues compared to the oldest age group. This could indicate that younger participants were more vulnerable to social pressures and comparison of body weight. Additionally, participants body weight was deeply tied to their happiness and confidence, as many indicated that weight loss would help improve their anxiety and depression. These results from the current study are supported by research conducted by Ribeiro et al., (2018) and Alabi et al., (2018). Both studies found an increased prevalence of depression prior to bariatric surgery. Ribeiro et al., (2018) also studied anxiety levels before surgery which were also found to be higher. Both studies compare pre- and post-surgery outcomes to find that both anxiety and depression decreased in the initial months following surgery. This supports the comments made by participants of the current study who anticipated improvements in their mental health after surgery.

Self-Perception

A variety of different viewpoints emerged related to self-perception. Some participants were accepting of the current state of their appearance, while most others were highly dissatisfied. Participants desiring change had low self-confidence and a negative image of themselves before surgery. Age did not seem to play a role in

participants' self-perception. Many participants' comments indicated that body weight and body satisfaction play a role in their overall mood and happiness. Participants envision an improvement in all aspects of their life after surgery. Fox and Maple (2021) conducted research to assess the relationship between self-esteem and bariatric surgery by surveying participants before and after surgery. They found that self-esteem was lower before surgery and improved after surgery, however this varied depending on participants' reasons to undergo surgery. This is an important factor to consider on a much deeper level as self-esteem and self-confidence before and after surgery appears to be multifactorial. Qualitative research conducted by Griauzde et al., (2018) assessed the psychosocial experiences of patients undergoing bariatric surgery. They were able to determine that participants did feel changes in self-perception after surgery. These changes were both positive and negative. These participants reported feeling more confident after surgery, but still felt a disconnect between what they saw in the mirror and their mental image of themselves. Participants of the current also mentioned the disconnect they felt between how they saw themselves in their mind, versus their image in the mirror. Participants self-perception appears to be multilayered with both articles supporting the themes found in the current research.

Cultural Impact

A surprising theme that arose from the current research was the impact of cultural background on diet and lifestyle. All participants that indicated a cultural impact were of Hispanic descent. The cultural foods commonly served in a Mexican household are not easily incorporated in the post-surgical diet. However, participants had grown up eating these foods and therefore anticipated feeling tempted by them after surgery. With

interviews conducted just before the start of the holiday season, participants felt even more enticed knowing that majority of these foods were going to be readily available at upcoming family events. The majority of comments came from the younger two age groups, so no comparison can be made with the older participants. Research conducted by Aguilera (2016) determined that one of the factors that contributed to lower success with weight loss after surgery was cultural eating habits. From the traditional diet to social gatherings with large quantities of foods, participants recognized potential challenges. Similar to the participants of this current study, the difficulty was in the idea of giving up the food they have become accustomed to enjoying and the family expectations and traditions that go along with it. Given the impact of cultural background on post-surgical success, it is important for Registered Dietitians to address this area when educating patients before surgery. Educational materials and presentations should include culturally sensitive recommendations and substitutions to address these concerns for all patients.

Fear and Frustration

An overarching theme that was imbedded within each section was participant's feelings of fear and frustration. These feelings were seen in many different contexts and perspectives. Participants of all ages experienced feelings of fear and frustration regarding their current state and their desire for change. A study conducted by Graham et al., 2017, qualitatively assessed participant experiences two years after surgery. Many of the participants interviewed expressed a variety of statements indicating fear and frustration in many areas of their life after surgery. These statements were regarding a

variety of physical, social and mental scenarios, similar to those expressed in the current study.

Energy and Stamina

The theme of energy and stamina was very prominent throughout the interviews. Participants of all ages were limited by their weight related lack of energy and stamina in multiple areas of their life. This affected participant's interactions with their children and physical activities. Research conducted by Dikareva et al., 2016 qualitatively assessed bariatric surgery candidates for perceived barriers, facilitators, and motivators. This study also found low energy and stamina to be a barrier to mobility and comfortability. This further affected their ability to be physically active. Similar to the current study, mobility, stamina and energy were prominent factors in participant's decision for surgery. Participants felt surgery would help them gain energy and improve overall quality of life.

Implication of Findings

Registered dietitians working with bariatric surgery patients would benefit from the information gathered in this study. First being a better understanding of participants reasoning for pursuing surgery. By understanding these factors and the role they play in participant's journey to surgery will allow for better pre-surgery assessments and continued support and guidance from healthcare professionals after surgery as well.

With diet and lifestyle being a large component of success after surgery, the current study helps support the recommendation for pre-surgical diet changes to improve patients' chances for success after surgery. Additionally, understanding the barriers that patients face in implementing the diet and lifestyle recommendations is crucial in

determining appropriate solutions. These factors will help Registered Dietitians and related healthcare practitioners better understand the population they are working with and provide support and recommendations in a manner that best meets the patient's needs.

Future Research

The current study was not able to determine a relationship between age and the motivating factors, success post-surgery and post-surgery quality of life. Therefore, additional research is required in this area to better understand the relationship between these factors and age. Future research should investigate motivating factors, confidence in diet implementation and quality of life factors on a larger scale in order to determine a greater effect of age. Additionally, gaining deeper knowledge into the roles of presurgical diet changes as well as the impact of presurgical diet habits on participants' post-surgery success. Knowledge on these factors could be beneficial for advancements in the area of bariatric surgery.

Strengths and Limitations

A strength of the current study is its qualitative nature. The use of open-ended questions allows greater opportunity for participants to provide deeper insight and responses compared to quantitative data. Another strength of this research is that the primary researcher was also the presenter for the pre-operative education class. This allowed the researcher to have a better understanding of the surgical process patients go through and the nutrition information participants were learning. On the other hand, having the primary researcher as well as one of the peer reviewers practicing in bariatric

surgery also limits the study as there could be preconceived ideas regarding the themes and factors identified in this study. Future research should be conducted by registered dietitians who are not practicing in this area to eliminate this bias. Choosing convenience sampling rather than random sampling is one limitation of this study. This sampling method does not allow for equal representation of the population's thoughts and feelings, therefore decreasing generalizability. The characteristics and thoughts of those who did not participate would not be equally represented. A second limitation of this study is that 82% of the sample was female. This decreases generalizability to the entire population since male responses were not as prominent. Additionally, choosing participants from only one, small rural hospital also presents limitations.

Conclusion

The current study provides further insight into the variety of factors that contribute to patients' perceptions and expectations of weight loss surgery. Overall, the themes found in the current study were seen to be prominent across all three age groups. Themes such as comorbidities, special events and cultural background were more commonly seen under the age of 35 years. Participants younger than the average age of participants in existing research and the average surgical patient population did appear to have different views than the older age group. Existing research found themes similar to the current study but in older participants as well. However, due to the limited sample size, no generalizable conclusion can be made regarding the relationship between participants age and their motivating factors, post-surgery success and anticipated quality of life.

APPENDIX A

APPROVAL FORMS

July 9, 2021

Sheena Bling, RD
Doctors Hospital of Manteca
1205 E. North St.
Manteca, Ca 95336

RE: 2021-075: Age Based Comparison of the Motivations, Self-Efficacy and Quality of Life in Bariatric Surgery Candidates - REVISED

Jurisdiction: Doctors Hospital of Manteca, 1205 E. North St. Manteca, Ca 95336

Dear Ms. Bling,

This is to inform you that on July 9, 2021 MetroWest Medical Center Institutional Review Board (IRB), via Expedited Review by the IRB Chair, has approved the above-referenced research protocol and the participation of the above-referenced investigative site in the research. Your study number is 2021-075. Please be sure to reference this number and the name of the principal investigator in any correspondence with MetroWest Medical Center IRB.

The following items were in your submission :

- Site Submission form
- Survey Consent V 6/10/2021
- Protocol
- Survey questions
- Thesis Protocol
- CV, RD License and CITI Training Certificate for Sheena Bling, RD

Specifically your request was approved as "expedited review" under the following category:

- Research that only includes interaction involving (1) educational tests (cognitive, diagnostic, aptitude, achievement); (2) survey procedures, interview procedures, or observation of public behavior (including visual and auditory recording) not eligible for exemption under §__.104(d)(2) either because there are risks to subjects other than informational risks, or because the informational risks are not addressed as specified under §__104(d)(2)(i) through (iii); (3) other data collection procedures (e.g., written or computer-assisted interactions or assessments) where the subject provides self-reports for the purposes of the research and/or may choose what data to provide; (4) non-invasive physical or behavioral tasks or manipulation of the subject's environment; and (5) observations of individual group behavior where the subject is a voluntary participant in the behavior and is aware that data are being collected

RE: 2021-075: Age Based Comparison of the Motivations, Self-Efficacy and Quality of Life in Bariatric Surgery Candidates - REVISED

Jurisdiction: Doctors Hospital of Manteca, 1205 E. North St. Manteca, Ca 95336

- Secondary research uses of identifiable private information or identifiable biospecimens that are not exempt under §__.104(d)(4) because (a) the identifiable private information or identifiable biospecimens are not publicly available; (b) information, which may include information about biospecimens, is recorded by the investigator in such a manner that the identity of human subjects can be readily ascertained directly or through identifiers linked to the subjects, or the investigator intends to contact the subjects or will re-identify subjects; (c) research use of identifiable health information not regulated under 45 CFR parts 160 and 164, subparts A and E.

Continued approval is conditional upon your compliance with the following requirements:

- A copy of the survey consent approval date 07/09/2021 is enclosed. Only MetroWest-IRB approved informed consent documents should be used. It must be signed by each subject's parent prior to initiation of any protocol procedures. In addition, each parent must be given a copy of the signed consent form.

- All publications and communications related to this research are subject to Tenet Policy AD 2.16 related to the substantiation of all data/claims with reliable scientific evidence.

- The following must be promptly reported to the IRB: changes to the study site, and all unanticipated problems that may involve risks or affect the safety or welfare of subjects or others, or that may affect the integrity of the research.

- All protocol amendments and changes to approved research must be submitted to the IRB and not be implemented until approved by the IRB except where necessary to eliminate apparent immediate hazards to the study subjects.

- Advertisements, letters, internet postings and any other media for subject recruitment must be submitted to the IRB and approved prior to use.

- The study cannot continue after 07/8/2022 until re-approved by MetroWest Medical Center IRB. A Study Renewal Report must be completed and returned to the IRB prior to the expiration of the approval period

If you have any questions regarding this determination, please feel free to contact me at mary.oster@mwmc.com or 508-383-8786.

Sincerely,

7/5/2021

Mary Oster
IRB Administrator

LOUISIANA TECH UNIVERSITY

Office of Sponsored Projects

EXEMPTION MEMORANDUM

TO: Ms. Sheena Bling and Dr. Vicky Green

FROM: Dr. Richard Kordal, Director of Intellectual Properties
rkordal@latech.edu

SUBJECT: HUMAN USE COMMITTEE REVIEW

DATE: July 27, 2021

TITLE: "Age Based Comparison of the Motivations, Self-Efficacy and Quality of Life in Bariatric Surgery Candidates"

NUMBER: HUC 22-011

According to the Code of Federal Regulations Title 45 Part 46, your research protocol is determined to be exempt from full review under the following exemption category(s): 46.104 (a)(d)(1)(2)(i)(ii).

a) Unless otherwise required by law or by department or agency heads, research activities in which the only involvement of human subjects will be in one or more of the categories in paragraph (d) of this section are exempt from the requirements of this policy, except that such activities must comply with the requirements of this section and as specified in each category.

(d) Except as described in paragraph (a) of this section, the following categories of human subjects research are exempt from this policy:

(1) Research, conducted in established or commonly accepted educational settings, that specifically involves normal educational practices that are not likely to adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction. This includes most research on regular and special education instructional strategies, and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

(2) Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:

(i) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects;

(ii) Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation.

Following the guidelines of the 2021 Code of Federal Regulations, section 46.104 (a) (d) (1) (2) (i) and (ii) copy-and-pasted below, I recommend HUC 22-011 as exempt from full review. Participants are assigned a subject number prior to the interview, transcripts are identified by subject number, audio recordings and field notes are stored in a locked environment, and audio recordings and field notes will be destroyed once transcription has been completed. Information is viewed only by researchers, and the study does not involve any treatment or intervention by the investigators. Participation is voluntary, and participants may discontinue at any time. Participants are informed that their involvement in this study will not affect their eligibility for bariatric surgery.

Thank You,
Dr. Richard Shrubb

Thank you for submitting your Human Use Proposal to Louisiana Tech's Institutional Review Board.

APPENDIX B

SURVEY INSTRUMENTS

Initial Recruitment Script:

S: I am conducting a research study for my master's thesis project to better understand the motivations and expectations of patients before having bariatric surgery. All of you here today are steps away from having surgery so you all would be great candidates! All that would be required is a one-on-one meeting with me for about 20 to 30 minutes either in person today after class or on Zoom on a day and time that works best for you. I have about 10 questions to ask you about your current experiences and how you think things will change after surgery. I'm looking for 3-4 people here today who are willing to participate! As a thank you for participating, you would also be entered into a raffle for a chance to win a $20 Amazon Gift Card!

S: Great, thank you! What day and time would work best for you?

S: Okay, I have you set up for _____ at _: ____. I will send you an email that will contain a link for this zoom meeting. What is your email address?

S: I will send over the meeting link. At the time of the interview, you can click on this link and it will take you to the meeting. I will also send you a reminder email 24 hours before the scheduled time. If you need to reschedule the appointment, please call me and we can take care of that. Do you have any questions?

S: Thank you for agreeing to patriciate! I will see you on _____.

Zoom Interview Script:

S:Hi _____, how are you?

S: Thank you again for participating in this study! The interview should take about 20-30 minutes. I will be asking about 10 questions to learn more about your experiences up until this point and how you anticipate things will change after surgery. This meeting will also be audio recorded with this recording device so that I do not miss any details of our conversation. The purpose of the recording is so that the questions and answers can be transcribed after this is over and then the audio will be deleted. Is that okay with you?

S: The audio recording has not started yet, but I will let you know when it does. Once it starts, I will review the consent form and then ask you to provide verbal consent for recording by saying "yes" or "no" so that it is properly documented. Do you have any questions before we begin?

S: "Okay, the recording has been started. The interview you are participating in is part of a research study required for the completion of my master's degree in Nutrition and Dietetics. The goal of this project is to gain a better understanding of the motivation and expectations of patients planning to have bariatric surgery as it relates to age. Participants between the ages of 18 and 41 will be individually interviewed using the same research questions and data collection procedure. Your participation in this study is strictly voluntary. You may withdraw consent for participating in this study at any time without penalty. There are no risks associated with participation in this study. Financial compensation will not be provided, nor will the university or Doctors Hospital of Manteca absorb the costs of medical treatment. You may not directly benefit from participating in this study. Your responses to any of the questions discussed during the phone interview will not affect your qualification for bariatric surgery. The information collected will be kept strictly confidential and accessible only by me, the primary researcher. Your name or any other identifying information will not be used when reporting the findings of this study. Research materials and files will be kept in a secured location during the course of this research study. With that said, do you consent for audio recording of this interview and use of your data for research purposes?

S: "Thank you! If you are ready, we will get started."

S: "Prior to this meeting, I gathered some basic demographic information for your chart, like date of birth, height, weight. I am just going to verify this information with you. Could you please verify your date of birth for me?"

S; Okay, let's get started.

S: (1) "Which type of bariatric surgery you are planning on having?"

S: (2) "Tell me about your weight history"

S: (3) "What are the main reasons that you are having bariatric surgery?"

S: (4) “What do you hope to achieve by having this surgery?”

S: (5) “How confident do you currently feel in your ability to make the diet changes after surgery?”

S: (6) “What diet changes do you feel will be the most difficult to make and why?”

S: (7) “How do you feel about your ability to consistently follow these diet changes during the first 6 months following surgery?”

S: (8) “What social factors might make it difficult for you to stick to these diet changes during the first 6 months after surgery?” (i.e. family, friends, relationships)

S: (9) “What personal factors might make it difficult for you to stick to these diet changes during the first 6 months after surgery?” (i.e. habits, lifestyle, skills)

S: (10) “What environmental factors might make it difficult to stick to these diet changes during the first 6 months after surgery?” (i.e. home life, work life, emotional factors)

S: (11) “How would you describe your current physical condition and how do you think this will change by having bariatric surgery?” *clarification: physical abilities and physical appearance

S: (12) “How would you describe your current social life and social interactions and how do you think this will change after having surgery?”

S: (13) “How do you describe your current mental health status and how do you think this will change after having surgery?” *clarification: how you think about yourself, self-confidence, mood changes

S: (14) “What will it mean to you once you have reached your goal weight after surgery?”

S: (15) What additional education or resources do you feel would help you be successful with the diet and lifestyle recommendations after surgery?

“That concludes the interview. Thank you so much for taking the time to participate. If you have any questions or concerns, please feel free to contact me.”

Data Collection Sheet

Subject Number: _____ Age: ____ Gender: ___ Height: _____ Weight: _____

Current Health Conditions: Please select all that apply

___ Type 2 Diabetes

___ Hypertension (High Blood Pressure)

___ Hyperlipidemia (High Cholesterol)

___Obstructive Sleep Apnea

___ GERD (Heartburn)

___ Arthritis/Joint Pain

___ Stroke

___ Fatty Liver Disease/ Cirrhosis

___ Stress Urinary Incontinence

___ Polycystic Ovarian Syndrome

___ Gout

___ Gallbladder Disorders

___ Depression/ Mood Disorders

___ Infertility

___ None of the Above

Other: _____

1. Which type of bariatric surgery you are planning on having?
   Sleeve Gastrectomy
   Roux-en-Y Gastric Bypass
   Loop Duodenal Switch Gastric Bypass
   Other: _____

2. Tell me about your weight history

3. What are the main reasons that you are having bariatric surgery?

4. What do you hope to achieve by having this surgery?

5. How confident do you feel in your ability to implement the diet changes after surgery?

6. What diet changes do you feel will be the most difficult for you to make? Why?

7. How confident do you feel in your ability to consistently follow all the diet changes during the first 6 months after surgery?

8. What social factors might make it difficult for you to stick to these diet changes during the first 6 months after surgery? (i.e. family, friends, relationships)

9. What personal factors might make it difficult for you to stick to these diet changes during the first 6 months after surgery? (i.e. habits, lifestyle, skills)

10. What environmental factors might make it difficult to stick to these diet changes during the first 6 months after surgery? (i.e. home life, work life, emotional factors)

11. How would you describe your current physical condition and how do you think this will change by having bariatric surgery? *clarification: physical abilities and physical appearance

12. How would you describe your current social life and social interactions and how do you think this will change after having surgery?

13. How do you describe your current mental health status and how do you think this will change after having surgery? *clarification: how you think about yourself, self-confidence, mood changes

14. What will it mean to you once you have reached your goal weight after surgery?

15. What additional education or resources do you feel would help you be successful after surgery?

REFERENCES

Aguilera, M. (2016). Bariatric surgery weight loss maintenance among Hispanics: A multiple case study. *Nursing Theses and Dissertations*, Paper 59.

American Heart Association. (2017). *What is cardiovascular disease?* https://www.heart.org/en/health-topics/consumer-healthcare/what-is-cardiovascular-disease

American Society of Metabolic and Bariatric Surgery. (2014). *Story of obesity*. https://asmbs.org/resources/story-of-obesity-surgery

American Society of Metabolic and Bariatric Surgery. (n.d.a). *Bariatric surgery procedure*. https://asmbs.org/patients/bariatric-surgery-procedures

American Society of Metabolic and Bariatric Surgery. (n.d.b). *Childhood and adolescent obesity*. https://asmbs.org/patients/adolescent-obesity

American Society of Metabolic and Bariatric Surgery. (n.d.c). *The impact of obesity on your body and health*. https://asmbs.org/patients/impact-of-obesity

American Society of Metabolic and Bariatric Surgery, (n.d.d). *Who is a candidate for bariatric surgery?* https://asmbs.org/patients/who-is-a-candidate-for-bariatric-surgery

Alabi, F., Guilbert, L., Villalobos, G., Mendoza, K., Hinojosa, R., Melgarejo, J. C., Espinosa, O., Sepulveda, E. M., & Zerrweck, C. (2018). Depression before and after bariatric surgery in low-income patients: the utility of the beck depression inventory. *Obesity Surgery*, 28(11).

Altaf, A., Barnawi, R.A., Mullaniazee, N., Hanbazazah, K.A., Gazoli, M., Zaidi, N.H., Aljiffry, M., Trabulsi, N., & Ghurab, A. M. (2019). What motivates patients to undergo bariatric surgery. *International Journal of Surgery and Medicine*, 5(3), 125-130.

Antoni, R. (2017). Metabolic effects of intermittent fasting. *Department of Nutritional Sciences*. 1-197, 10.

Apovian, C. M. (2016). Obesity: Definition, comorbidities, causes and burden. *The American Journal of Managed Care*, 22(7), S176- S185.

Aras, S., Ustunsoy, S., & Armutcu, F. (2015). Indices of central and peripheral obesity: Anthropometric measurements and laboratory parameters of metabolic syndrome and thyroid function. *Balkan Medical Journa*l, 32, 414-420.

Ariel-Donges, A H., Oyama, C. K., & Hood, M. M. (2020). Patient reported short term barriers to and facilitators of adherence to behavioral recommendations following bariatric surgery. *Bariatric Times*, 17(7), 15-17.

Arterburn, D. E., Olsen, M. K., Smith, V. A., Livingston, E. H., Scoyoc, L. V., Yancy, W. S., Jr, Eid, G., … Maciejewski, M. L. (2015). Association between bariatric surgery and long-term survival. *Journal of the American Medical Association*, 313(1), 62-70.

Aksungar, F. B., Sarikaya, M., Coskun, A., Serteser, M., & Unsal, I. (2017). Comparison of intermittent fasting versus caloric restriction in obese subjects: A two-year follow-up. *Journal of Nutritional Health and Aging*, 21, 681-85.

Beamish, A., & Reinehr, T. (2017). Should bariatric surgery be performed in adolescents? *European Journal of Endocrinology*, 176, D1-D15.

Benaiges, D., Mas-Lorenzo, A., Goday, A., Ramon, J. M., Chillaron, J. J., Pedro-Botet, J., & Flores-Le Roux, J. (2015). Laparoscopic sleeve gastrectomy: More than a restrictive bariatric surgery procedure? *World Journal of Gastroenterology*, 21(41), 11804-11814

Bettini, S., Belligoli, A., Fabris, R., & Busetto, L. (2020). Diet approach before and after bariatric surgery. *Reviews in Endocrine and Metabolic Disorders*, 21, 297-306.

Boles, A., Kandimalla, R., Reddy, P. H. (2017). Dynamics of diabetes and obesity: epidemiological perspective. *Biochimica et Biophysica Acta*, 1863, 1026-1036.

Bunga, R. A. (2018). Psychological perspectives in obesity. *Appetite*, 1-3.

Burke, L. E., Ewing, L. J., Ye, L., Styn, M., Zheng, Y., Music, E., Loar, I., … Sereika, S. M. (2015). The SELF Trial: A self-efficacy based behavioral intervention trial for weight loss maintenance. *Obesity*, 23(11), 2175-2182.

Centers for Disease Control and Prevention. (2020a). *Defining adult overweight and obesity*. https://www.cdc.gov/obesity/adult/defining.html

Centers for Disease Control and Prevention. (2020b). *Losing weight*. https://www.cdc.gov/healthyweight/losing_weight/index.html

Choi, P. J., Pereira, R. T., Killeen, A., &Flaherty, G. T. (2018). Cross-sectional analysis of attitudes towards bariatric surgery tourism of patients attending a weight management program: A qualitative study. *International Journal of Travel Medicine and Global Health*, 6(3), 100-109.

Chooi, Y. C., Ding, C., & Magkos, F. (2019). The epidemiology of obesity. *Metabolism Clinical and Experimental*, 92, 6-10.

Costanzo, P., Cleland, J. G. F., Pellicori, P., Clark, A. L., Hepburn, D., Kilpatrick, E. S., Perrone-Filardi, P., Zhang, J., & Atkin, S. L. (2015). The obesity paradox in type 2 diabetes mellitus: Relationship of body mass index to prognosis. *Annals of Internal Medicine*, 162, 610-618.

Coulman, K. D., MacKichan, F., Blazeby, J. M., Donovan, J. L., & Owen- Smith, A. (2020). Patients' experiences of life after bariatric surgery and follow up care: A qualitative study. *BMJ Open*, 10, 1-9.

Dikareva, A., Harvey, W. J., Cicchillitti, M.A., Bartlett, S. J., & Andersen R. E. (2016). Exploring perceptions of barriers, facilitators, and motivators for physical activity among gemal bariatric patients: Implications for physical activity programming. *American Journal of Health Promotion.*

Dogan, K., Homan, J., Aarts, E. O., de Boer, H., van Laarhoven, C. J. H. M., & Berends, F. J. (2018). Long-term nutritional status in patients following Roux-en-Y gastric bypass surgery. *Clinical Nutrition*, 37(2), 612-617.

Durkin, N., Desai, A. P. (2017). What is the evidence for pediatric/adolescent bariatric surgery? *Current Obesity Reports*, 6, 278-285.

Ells, L. J., Atkinson, G., McGowan, V. J., Hamilton, S., Waller, G., & Harrison, S. (2015). Intermittent fasting interventions for the treatment of overweight and obesity in adults aged 18 years and over: A systematic review protocol. *JBI Database of Systematic Reviews & Implementation Reports*, 13(10), 60-68.

Edison, E., Whyte, M., Van Vlymen, J., Jones, S., Gatenby, P., de Lusignan, S., Shawe, J. (2016). Bariatric surgery in obese women of reproductive age improves conditions that underlie fertility and pregnancy outcomes: Retrospective cohort study in the UK National Bariatric Surgery Registry (NBSR). *Obesity Surgery*, 26, 2837-2842.

Edwards-Hampton, S. A., Wedin, S. (2015). Preoperative psychological assessment of patients seeking weight loss surgery: Identifying challenges and solutions. *Psychology Research and Behavior Management*, 8, 263-272.

Faghri, P., & Buden, J. (2015). Health behavior knowledge and self-efficacy as predictors of body weight. *Nutritional Disorders Journal*, 5(3), 1-11.

Fox, P., Maples, J., (2021). Decisions are more than skin deep: Exploring correlations between self-esteem and the decision to have bariatric surgery. *Kentucky Journal of Undergraduate Scholarships*, 5(1).

Godino, J. G., Merchant, G., Norman, G. J., Donohue, M. C., Marshall, S. J., Fowler, J. H., Calfas, K. J., Huang, J.S., Rock, C.L., Griswold, W.G., Gupta, A., Raab, F., Fogg, B.J., Robinson, T.N., & Patrick, K. (2016). Using social and mobile tools for weight loss in overweight and obese young adults (project SMART): A 2-year parallel group randomized controlled trial. *The Lancet Diabetes & Endocrinology*, 4(9), 747-755.

Godoy-Izquierdo, D., Gonzalez-Hernandez, J., Lara, R., Rodriguez-Tadeo, A., Ramirez, M. J., Navarron, E., Ogallar-Blanco, A., Lopez-Mora, C., & Arbinaga, F. (2020). Considering BMI, body image and desired weight change for suitable obesity management options. *The Spanish Journal of Psychology*, 23, 1-14.

Golomb, I., David, M. B., Glass, A., Kolitz, T., & Keidar, A. (2015). Long-term metabolic effects of laparoscopic sleeve gastrectomy. *JAMA Surgery, 150*(11), 1051-105.7

Gonzalez-Heredia, R., Patel, N., Sanchez-Johnsen, L., Masrur, M., Murphey, M., Chen, J., Elli, E. (2015). Does age influence bariatric surgery outcomes? *Bariatric Surgical Practice and Patient Care*, *10*(2), 74-78.

Graham, Y., Hayes, C., Small, P.K., Magawar, K., & Ling, J. (2017). Patient experiences of adjusting to life in the first 2 years after bariatric surgery: A qualitative study. *Clinical Obesity*, 7, 323-335.

Griauzde, D. H., Ibrahim, A. M., Fisher, N., Stricklen, A., Ross, R., & Ghaferi, A. A. (2018). Understanding the psychosocial impact of weight loss following bariatric surgery: A qualitative study. *BMC Obesity, 5*(38), 1-9.

Gribsholt, S. B., Thomsen, R W., Svensson, E., Richelsen, B. (2016). Overall and cause-specific mortality after Roux-en-Y gastric bypass surgery: A nationwide cohort study. *Surgery for Obesity and Related Disease*, 1-7.

Gribsholt, S. B., Svensson, E., Richelsen, B., Raundahl, U., Sorensen, H. T., & Thomsen, R. W. (2018). Rate of acute hospital admissions before and after Roux-en-Y gastric bypass surgery. *Annals of Surgery, 267*(2), 319-325.

Hall, K. D., & Kahan, S. (2018). Maintenance of lost weight and long-term management of obesity. *Medical Clinics of North America*, *102*(1), 183-197.

Hales, C. M., Carroll, M. D., Fryar, C. D., & Ogden, C. L. (2017). Prevalence of obesity among adults and youth: United States, 2015-2016. *NCHS Data Brief*, (288), 1-8.

Homer, C. V., Tod, A. M., Thompson, A. R., Allmark, P., Goyder, E. (2016). Expectations and patients' experiences of obesity prior to bariatric surgery: A qualitative study. *BMJ Open*, 6, 1-10.

Horne, B. D., Muhlesstein, J. B., & Anderson, J. L. (2015). Health effects of intermittent fasting: Hormesis or harm? A systematic review. *American Journal of Clinical Nutrition*, 102, 464-470.

Hult, M., Bonn, S. E., Brandt, L., Wiren, M., & Lagerros, Y. T. (2019). Women's satisfaction with and reasons to seek bariatric surgery: A prospective study in Sweden with 1-year follow-up. *Obesity Surgery*, 29, 2059-2070.

Iannelli, A., Treacy, P., Sebastianelli, L., Schiavo, L., Martini, F. (2019) Perioperative complications of sleeve gastrectomy: Review of the literature. *Journal of Minimal Access Surgery*, *15*(1), 1-7.

Inge, T. H., Courcoulas, A. P., Jenkins, T. M., Michalsky, M. P., Helmrath, M. A., Brandt, M. L., Harmon, C. M., Zeller, M.H., Chen, M. K., Xanthakos, S. A., Horlick, M., Buncher, & Buncher, C. R. (2016). Weight loss and health status 3 years after bariatric surgery in adolescents. *New England Journal of Medicine*, 374, 113-123.

Jaensson, M., Dahlberg, K., Nilsson, U., Stenberg, E. (2019). The impact of self-efficacy and health literacy on outcome after bariatric surgery in Sweden: A protocol for a prospective, longitudinal mixed-methods study. *BMJ Open*, 9, 1-7.

Jakobsen, G, S., Smastuen, M. C., Sandbu, R., Nordstrand, N., Hofso, D., Lindberg, M., Hertel, J. K., & Hjelmesaeth, J. (2018). Association of bariatric surgery vs medical obesity treatment with long-term medical complications and obesity-related comorbidities. *The Journal of the American Medical Association*, *319*(3), 291-301.

Jolles, S.A., Alagoz, E., Liu, N., Volis, C.I., Shea, G., & Funk, L. M. (2019). Motivations of males with severe obesity, who pursue medical weight management of bariatric surgery. *Journal of Laparoendoscopic and Advanced Surgical Techniques*, *29*(6), 730-740.

Jumbe, S., Hamlet, C., & Meyrick, J. (2017). Psychological aspects of bariatric surgery as a treatment of obesity. *Current Obesity Report*, 6, 71-78.

Jumbe, S., Meyrick, J. (2018). Contrasting views of the post bariatric surgery experience between patients and their practitioners: A qualitative study. *Obesity Surgery*, 28, 2447-2456.

Janik, M. R., Rogula, T., Bielecka, I., Kwiatkowski, A., Pasnik, K. (2016). Quality of life and bariatric surgery: Cross sectional study and analysis of factors influencing outcomes. *Obesity Surgery*, 26, 2849-2855.

Kalarchian, M. A., Marcus, M. D., Courcoulas, A.P., Cheng, Y., & Levine, M.D., (2016). Preoperative lifestyle intervention in bariatric surgery: A randomized clinical trial. *Surgery for Obesity and Related Disease*, *12*(1), 180-187.

Khan, S. S., Ning, H., Wilkins, J. T., Allen, N., Camethon, M., Berry, J. D., Sweis, R. N., & Lloyd-Jones, D. M. (2018). Association of body mass index with lifetime risk of cardiovascular disease and compression of morbidity. *Journal of the American Medical Association Cardiology*, *3*(4), 280-287.

King, W. C., Chen, J-Y., Belle, S. H., Courcoulas, A. P., Dakin, G. F., Elder, K. A., Flum, D. R., Hinojosa, M. W., Mitchell, J. E., Pories, W. J., Wolfe, B. M., & Yanovski, S. Z. (2016). Change in pain and physical function following bariatric surgery for severe obesity. *Journal of the American Medical Associatio*n, *315*(13), 1362-1371.

Koliaki, C., Liatis, S., & Kokkinos, A. (2019). Obesity and cardiovascular disease: revisiting an old relationship. *Metabolism Clinical and Experimental*, 92, 98-107.

Konttinen, H., Peltonen, M., Sjostrom, L., Carlsson, L., & Karlsson, J. (2015). Psychological aspects of eating behaviors as predictors of 10 yr weight changes after surgical and conventional treatment of severe obesity: Results from the Swedish Obese Subjects intervention study. *American Journal of Clinical Nutrition*, 101, 16-24.

Kowalewski, P. K., Olszewski, R., Kwiatkowski, A., Galazka-Swiderek, N., Cichon, K., & Pasnik, K. (2017). Life with a gastric band. Long-term outcomes of laparoscopic adjustable gastric banding- a retrospective study. *Obesity Surgery*, 27, 1250-1253.

Kuin, C., den Ouden, F., Brandts, H., Deden, L., Hazebroek, E., van Borren, M., de Boer, H. (2019). Treatment of severe protein malnutrition after bariatric surgery. *Obesity Surgery*, 29, 3095-3102.

Kvalem, I. L., Bergh, I., von Soest, T., Rosenvinge, J. H., Johnsen, T. A., Martinsen, E. W., Mala, T., Kristinsson, J, A. (2016). A comparison of behavioral and psychological characteristics of patient's option for surgical and conservative treatment for morbid obesity. *BMC Obesity*, *3*(6), 1-11.

Lager, C.J., Esfandiari, N. H., Subauste, A.R., Kraftson, A.T., Brown, M.B., Cassidy, R.B., Nay, C.K., Lockwood, A. L., Varban, O. A., & Oral, E. A. (2017). Roux-En-Y gastric bypass vs. sleeve gastrectomy: Balancing the risks of surgery with the benefits of weight loss. *Obesity Surgery*, 27, 154-161.

Lammers, W. J., van Tilburg, A. J., Apers, J. A., Wiebolt, J. (2018). Liver failure caused by prolonged state of malnutrition following bariatric surgery. *World Journal of Heptology*, *10*(3), 396-399.

Lazzati, A., De Antonio, M., Paolino, L., Martini, F., Azoulay, D., Iannelli, A., & Katsahian, S. (2016). Natural history of adjustable gastric banding: Lifespan and revisional rate. *Annals of Surgery*, *20*(10), 1-7.

Lean, M. E.J., & Malkova, D. (2016). Altered gut and adipose tissue hormones in overweight and obese individuals: Cause or consequence. *International Journal of Obesity*, 40, 622-632.

Levelt, E., Pavlides, M., Banerjee, R., Mahmod, M., Kelly, C., Sellwood, J., … Neubauer, S. (2016). Ectopic and visceral fat deposition in lean and obese patients with type 2 diabetes. *Journal of the American College of Cardiology*, *68*(1), 53-63.

Liakopoulos, V., Franzen, S., Svensson, A.-M., Sattar, N., Miftaraj, M., Bjorck, S., Ottosson, J., Naslund, I., Gudbjörnsdottir &B., Eliasson, B. (2020). Renal and cardiovascular outcomes after weight loss from gastric bypass surgery in Type 2 Diabetes: Cardiorenal risk reductions exceed atherosclerotic benefits. *Diabetes Care*, 43, 1276-1284.

Lorenzo, A. D., Gratteri, S., Gualtier, P., Cammarano, A., Bertucci, P., & Renzo, L. D. (2019). Why primary obesity is a disease? *Journal of Translational Medicin*e, *17*(196), 1-13.

Lupoli, R., Lembo, E., Saldalamacchia, G., Avola, C. K., Angrisani, L., Capaldo, B. (2017). Bariatric surgery and long-term nutritional issues, *World Journal of Diabetes*, *8*(11), 464-474.

Mattson, M. P., Longo, V. D., Harvie, M. (2017). Impact of intermittent fasting on health and disease processes. *Aging Research Reviews*, 39, 46-58.

Maciejewski, M. L., Arterburn, D. E., Scoyoc, L. V., Smith, V. A., Yancy, W. S., Weidenbacher, H. J., Livingston, E. H., Olsen, M. K. (2016). Bariatric surgery and long-term durability of weight loss. *JAMA Surgery*, *15*(11), 1046-1055.

Major, P., Matlock, M., Pedziwiatr, M., Migaczewski, M., Budzynski, P., Stanek, M., Kisielewski, M., Natkaniec, M., & Budzynski, A. (2015). Quality of life after bariatric surgery. *Obesity Surgery*, 25, 1703-1710.

Megias, A., Gonzalez-Cutre, D., Beltran-Carrillo, V. J., Gomiz-Diaz, J. M., & Cervello, E. (2018). The impact of living with morbid obesity on psychological need frustration: A study with bariatric patients. *Stress Health, 34*(4), 509-522.

Montani, J. P., Schutz, Y., & Dulloo, A. G. (2015). Diet and weight cycling as risk factors for cardiometabolic diseases: Who is really at risk? *Obesity Reviews*, 16, 7-18.

Masood, A., Alsheddi, L., Alfayadh, L., Bukhari, B., Elawad, R., & Alfadda, A.A. (2019). Dietary and lifestyle factors serve as predictors of successful weight loss maintenance post bariatric surgery. *Journal of Obesity*, 1-6.

Nett, P., Borbely, Y., & Kroll, D. (2016). Micronutrient supplementation after biliopancreatic diversion with duodenal switch in the long term. *Obesity Surgery*, 26, 2469-2474.

Nezami, B. T., Lang W., Jakicic, J. M., Davis, K. K., Polzien, K., Rickman, A. D., Hatley, K. E., Tate, D. F. (2017). The effect of self-efficacy on behavior and weight in a behavioral weight loss intervention. *Health Psychology*, 1-19.

Novikov, A. A., Afaneh, C., Saumoy, M., Parra, V., Shukla, A., Dakin, G. F., Pomp, A., Dawod, E., Shah, S., Aronne, L.J., & Sharaiha, R. Z. (2018). Endoscopic sleeve gastroplasty, laparoscopic sleeve gastrectomy, and laparoscopic band for weight loss: How do they compare? *Journal of Gastrointestinal Surgery*, 22, 267-273.

Ofori, A., Keeton, J., Booker, Q., Schneider, B., McAdams, C., Messiah, S.E. (2020). Socioecological factors associated with ethnic disparities in metabolic and bariatric surgery utilization: A qualitative study. *Surgery for Obesity and Related Diseases, 16*(6), 786-795.

Opolski, M., Chur-Hansen, A., Wittert, G. (2015). The eating-related behaviors, disorders and expectations of candidates for bariatric surgery. *Clinical Obesity*, 5, 165-197.

Ortega, F. B., Lavie, C. J., & Blair, S. N. (2016). Obesity and cardiovascular disease. *Circulation Research*, 1752-1770.

Palleja, A., Kashani, A., Allin, K. H., Nielsen, T., Zhang, C., Li, Y., Brach, T., Liang, S., Feng, Q., Jørgensen, N.B., Bojsen-Møller, K. N., Dirksen, C., Burgdorf, K. S., Holst, J. J., Madsbad. S., Wang, J., Pedersen, O., Hansen, T., * Arumugam, M. (2016). Roux-en-Y gastric bypass surgery of morbidly obese patients induces swift and persistent changes of the individual gut microbiota. *Genome Medicine, 8*(67), 1-13.

Pantalone, K. M., Hobbs, T.M., Chagin, K. M., Kong, S, X., Wells, B.J., Kattan, M.W., Bouchard, J., Sakurada, B., Milinovich, A., Weng, W., Bauman, J., Misra-Herbert, A. D., Zimmerman, R.S., & Burguera, B. (2017). Prevalence and recognition of obesity and its associated comorbidities: Cross sectional analysis of electronic health record data from a large US integrated health system. *BMJ Open, 7*(11), 1-9.

Parrott, J. M., Craggs-Dino, L., Faria, S. L., O'Kane, M. (2020). The optimal nutritional programme for bariatric and metabolic surgery. *Current Obesity Reports*, 1-13.

Paulus, G. F., de Vaan, L. E.G., Verdam, F. J., Bouvy, N. D., Ambergen, T. A.W., van Heurn, L. W. E. (2015). Bariatric surgery in morbidly obese adolescents: A systematic review and meta-analysis. *Obesity Surgery*, 25, 860-878.

Pearl, R. L., Wadden, T.A., Walton, K., Allison, K. C., Tronieri, J. S., Willians, N.N. (2019). Health and appearance: Factors motivating the decision to seek bariatric surgery. *Surgery for Obesity and Related Diseases, 15*(4), 636-642.

Poobalan, A., Aucott, L. (2016). Obesity among young adults in developing countries: A systematic overview. *Current Obesity Reports*, 5, 2-13.

Qi, L., Guo, Y., Liu, C.-Q., Huang, Z.-P., Sheng, Y., Zou, D.-J. (2017). Effects of bariatric surgery on glycemic and lipid metabolism, surgical complication, and quality of life in adolescents with obesity: A systematic review and meta-analysis. *Surgery for Obesity and Related Diseases*, 1-19.

RAND Corporation, (n.d). 36-item short form survey instrument (SF-36). https://www.rand.org/health-care/surveys_tools/mos/36-item-short-form/survey-instrument.html

Ribeiro, G. A., Giapietro, H. B., Belarmino, L. B., & Salgado-Junior, W. (2018). Depression, anxiety and binge eating before and after bariatric surgery: Problems that remain. *Arquivos Brasileiros de Cirurgia Digestiva*, *31*(1).

Ryan, D. H., Yockey, S. R. (2017). Weight loss and improvement in comorbidity: Differences at 5%, 10%, 15% and over. *Current Obesity Report*, *6*(2), 187-194.

Ryder, J. R., Gross, A. C., Fox, C. K., Kaizer, A. M., Rudser, K. D., Jenkins, T. M., Ratcliff, M. B., Kelly, A. S., Kirk, S., Siegel, R. M., & Inge, T. H. (2018). Factors associated with long-term weight loss maintenance following bariatric surgery in adolescents with severe obesity. *International Journal of Obesity*, *42*(1), 102-107.

Santos, I., Sniehotta, F. F., Marques, M. M., Carraca, E. V., & Teixeira, P. J. (2017). Prevalence of personal weight control attempts in adults: a systematic review and meta- analysis. *Obesity Reviews*,18, 32-50.

Sarwer, D. B., & Steffen, K.J. (2015). Quality of life, body image and sexual functioning in bariatric surgery patients. *European Eating Disorders Review*, 23, 504-508.

Schroeder, R., Harrison, T. D., & McGraw, S. L. (2016). Treatment of adult obesity with bariatric surgery. *American Family Physician*, *93*(1), 31-37.

Schwarzer, R., & Renner, B. (2009). *Health specific self-efficacy scales*. Research Gate. 1-21, http://userpage.fu-berlin.de/~health/healself.pdf.

Seo, M. H., Kim, Y.-H., Han, K., Jung, J.-H., Park, Y.-G., Lee, S.-S., Kwon, H.-S., Lee, W.-Y., & Yoo, S. J. (2015). Prevalence of obesity and incidence of obesity-related comorbidities in Koreans based in national health insurance service health checkup data 2006-2015. *Journal of Obesity & Metabolic Syndrome*, 27, 46-52.

Sharman, M. J., Venn, A.J., Hensher, M., Wilkinson, S., Palmer, A. J., Williams, D., Ezzy, D. (2016). Motivations for seeking bariatric surgery: The importance of health professionals and social networks. *Bariatric Surgical Practice and Patient Care*, *11*(3), 104-109.

Skogar, M. L., & Sundbom, M. (2017). Duodenal switch is superior to gastric bypass in patients with super obesity when evaluated with the bariatric analysis and reporting outcome system (BAROS), *Obesity Surgery*, 27, 2308-2316.

Slagter, S. N., van Vliet-Ostaptchouk, J. V., van Beek, A. P., Keers, J. C., Lutgers, H. L., van der Klauw, M. M., & Wolffenbuttel, B. H.R. (2015). Health-related quality of life in relation to obesity grade, type 2 diabetes, metabolic syndrome and inflammation. *PLoS ONE*, *10*(10). doi:10.1371/journal.pone.0140599

Speck, C. M., (2016). *Life after bariatric surgery: A mixed method analysis on social support and quality of life*. Digital Commons @ George Fox University.

Sudlow, A., le Roux, C. W., & Pournaras, D. (2020). The metabolic benefits of different bariatric operations: what procedure to choose? *Endocrine Connections*, *9*(2), R28-R35.

Supriya, R., Tam, B. T., Yu, A. P., Lee, P. H., Lai, C. W., Cheng, K. K., Yau, S. Y., Chan, L. W., Yung, B. Y., Sheridan, S., & Siu, P. M. (2018). Adipokines demonstrate the interacting influence of central obesity with other cardiometabolic risk factors of metabolic syndrome in Hong Kong Chinese adults. *PLoS ONE, 13*(8). doi.org/10.1371/journal.pone.0201585

Susmallian, S., Raziel, A., Barnea, R., Paran, H. (2019). Bariatric surgery in older adults. Should there be an age limit? *Medicine, 98*(3), 1-8.

Tabesh, M, R., Maleklou, F., Ejtehadi, F., & Alizadeh, Z. (2019). Nutrition, physical activity, and prescription of supplements in pre- and post-bariatric surgery patients: A practical guideline. *Obesity Surgery*, 29, 3385-3400.

Webb, V. L., Wadden, T. A. (2017). Intensive lifestyle intervention for obesity: Principles, practices, and results. *Gastroenterology*, 152, 1752-1764.

Werling, M., Fandriks, L., Olbers, T., Mala, T., Kristinsson, J., Stenlof, K., Wallenius, V., Docherty, N. G., le Roux, C. W. (2018). Biliopancreatic diversion is associated with greater increases in energy expenditure than Roux-en-Y gastric bypass. *PLoS ONE*, *13*(4), 1-12.

Widmer, J., Gero, D., Sommerhalder, B., Alceste, D., Raguz, I., Serra, M., Vonlanthen, R., Bueter, M., & Thalheimer, A. (2022). Online survey factors influencing patients' motivation to undergo bariatric surgery, *Clinical Obesity*, *12*(2), 1-8.

Williamson, D. A., Bray, G. A., & Ryan, D. H. (2015). Is 5% weight loss a satisfactory criterion to define clinically significant weight loss? *Obesity, 23*(12), 2319-2320.

World Health Organization. (2014). *WHOQOL: Measuring Quality of Life*. https://www.who.int/healthinfo/survey/whoqol-qualityoflife/en/index3.html

World Health Organization. (2020). *Overweight and Obesity*. https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight

Yanovski, S. Z., Marcus, M. D., Wadden, T. A., Walsh, B. T. (2015). The questionnaire on eating and weight patters-5 (QEWP-5): An updated screening instrument for binge eating disorder. *International Journal of Eating Disorders*, *48*(3), 259-261.

Zabatiero, J., Hill, K., Gucciardi, D. F., Hamdorf, J. M., Taylor, S. F., Hagger, M, S., & Smith, A. (2016). Beliefs, barriers, and facilitators to physical activity in bariatric surgery candidates. *Obesity Surgery*, 26, 1097-1109.