POST-SURGICAL BARIATRIC PATIENTS’ PERCEPTIONS, EXPECTATIONS, AND EXPERIENCES AFTER WEIGHT LOSS SURGERY

by
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A DNP Project Submitted to the Faculty of the
COLLEGE OF NURSING
In Partial Fulfillment of the Requirements
For the Degree of
DOCTOR OF NURSING PRACTICE
In the Graduate College
THE UNIVERSITY OF ARIZONA

2018
THE UNIVERSITY OF ARIZONA
GRADUATE COLLEGE

As members of the DNP Project Committee, we certify that we have read the DNP project
prepared by Alexis Hanson, titled *Post-Surgical Bariatric Patients’ Perceptions, Expectations,
and Experiences After Weight Loss Surgery* and recommend that it be accepted as fulfilling the
DNP project requirement for the Degree of Doctor of Nursing Practice.

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Final approval and acceptance of this DNP project is contingent upon the candidate’s submission
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that it be accepted as fulfilling the DNP project requirements.

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STATEMENT BY AUTHOR

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ACKNOWLEDGMENTS

A very special thanks to my advisor and committee chair Dr. Patricia Daly and committee members Dr. Kate Sheppard and Dr. Pamela Reed at the University of Arizona. Thank you all for believing in me and this DNP Project. I appreciate all the encouragement, knowledge, support, guidance, insight, and time you have shared with me; I am forever grateful.

A sincere thanks to Dr. Joan Shaver and all DNP faculty at the University of Arizona for making this DNP Program an incredible journey of learning and educational experiences. I am grateful and appreciate all of you for being such supportive, caring, and knowledgeable mentors.

Thank you to Dr. Loretta Heuer, my colleague in Fargo, ND, for volunteering your time to be my analysis consultant for this project.

Also, thank you to my project participants and your willingness to share your stories.
DEDICATION

I dedicate this DNP Project to my wonderful husband Brad Hanson and my mom Phyllis who have been my greatest advocates, cheerleaders, and supporters; I appreciate and love you both very much.

I also dedicate this project to all individuals who have been affected by the disease of obesity.
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ABSTRACT

The World Health Organization estimates the obese adult population at 400 million worldwide (Mhuircheartaigh, Abedin, Bennett, & Tyagi, 2013), with an estimated 18 million people categorized with severe or morbid obesity (American Society for Metabolic and Bariatric Surgery [ASMBS], 2014). Bariatric surgery can be an effective weight loss treatment for obesity (Karmali et al., 2013). There is a portion of post-surgical bariatric patients who have suboptimal weight loss outcomes, losing less weight than expected or regaining weight lost (Karmali et al., 2013; Sarwer, Dilks, & West-Smith, 2011). A better understanding of post-surgical bariatric patients’ suboptimal outcomes was needed. The purpose of this project was to describe post-surgical bariatric patients’ perceptions, expectations, and experiences after weight loss surgery. A qualitative descriptive design was utilized with a sample size of five post-surgical bariatric patients. The project utilized a demographic questionnaire and semi-structured, open-ended questions asked in a focus group interview session. Five themes emerged from the analysis including: 1) surgery as a weight loss solution, 2) confronting physical and emotional realities, and unexpected challenges, 3) evolution of self-image, 4) weight loss surgery as a tool with personal responsibility, and 5) support, knowledge, and guidance: the missing link. An overarching theme encompassing these themes became evident as a “mixed blessing.” The findings of this project described facilitators and barriers/challenges to successful weight loss and weight maintenance post-bariatric surgery. These findings can be utilized by DNP primary care nurse practitioners to improve knowledge and understanding on how best to help obese and post-surgical bariatric patients in achieving their health and weight loss goals.
INTRODUCTION

Obesity has become an epidemic. The World Health Organization estimates the obese adult population at 400 million worldwide (Mhuircheartaigh, Abedin, Bennett, & Tyagi, 2013). Body mass index (BMI) is the measurement used to classify patients’ obesity through a calculation of the patients’ height and weight (U.S. National Library of Medicine, 2017a). Obesity is then further “subdivided into categories: Class 1: BMI of 30 to < 35, Class 2: BMI of 35 to < 40, and Class 3: BMI of 40 or higher [sometimes categorized as severe obesity or extreme obesity]” (Centers for Disease Control and Prevention, 2016). The adult obesity rate (BMI ≥ 30) in the United States is nearing 40%, with 8% considered to have severe obesity [BMI ≥ 40] (Robert Wood Johnson Foundation [RWJF], 2017).

Morbid obesity is when an individual is greater than 100 lbs. “above their ideal body weight,” has a BMI ≥ 35, and in conjunction has obesity-related comorbidities (University of Rochester Medical Center [URMC], 2017a). It is estimated that over 18 million people are categorized with severe or morbid obesity (American Society for Metabolic and Bariatric Surgery [ASMBS], 2014). Bariatric surgery can be an effective weight loss treatment for obesity (Karmali et al., 2013); support may play a key role in this, although only 1% of adults choose bariatric surgery (ASMBS, 2014). The purpose of this project is to understand post-surgical bariatric patients’ perceptions, expectations, and experiences after weight loss surgery. The findings of this project may help guide primary care providers to deliver more therapeutic and competent, follow-up care with these patients.
Background Knowledge

Obesity-related comorbidities include: type II diabetes, osteoarthritis, cardiovascular disorders, cerebrovascular attacks, and cancers, including: “endometrial, breast, ovarian, prostate, liver, gallbladder, kidney, and colon,” (World Health Organization [WHO], 2015), gastrointestinal disorders, respiratory disorders, infertility, depression, and urinary stress incontinence (URMC, 2017a). Bariatric surgery can improve these comorbidities and decrease mortality (Karmali et al., 2013). Studies have shown that improvements of obesity-related comorbidities can be achieved with a modest weight loss of only 5 to 10% of body weight (Phelan, Nallari, Darroch, & Wing, 2009).

Typical insurance company qualifications to consider approval for bariatric surgery includes: the patient has severe or morbid obesity, along with past verifiable medical history of the patient being unable to achieve and maintain permanent weight loss, despite multiple weight loss attempts (American Society for Metabolic and Bariatric Surgery [ASMBS], 2017d). An estimated 196,000 bariatric surgical procedures took place in the United States (U.S.) in 2015 including: 53.8% sleeve gastrectomy, 23.1% Roux-en-Y gastric bypass, 5.7% adjustable gastric band, 0.6% biliopancreatic diversion with duodenal switch, and 3.2% considered other; in addition, there were 13.6% bariatric revision surgeries (American Society for Metabolic and Bariatric Surgery [ASMBS], 2016). The vertical banded gastroplasty (stomach stapling), an older form of bariatric surgery, is typically no longer done in the U.S. today due to increased complications (Bariatric Surgery Source, LLC, 2017).

The goal of bariatric surgery (weight loss surgery) is to lose a significant amount of weight through surgical alteration of the stomach or stomach and intestines, causing less intake and/or
malabsorption of calories, with goals of losing a significant amount of weight (American Society for Metabolic and Bariatric Surgery [ASMBS], 2017a). Bariatric surgery can decrease comorbidities, and help improve a patient’s health and quality of life (American Society for Metabolic and Bariatric Surgery [ASMBS], 2017b). The most common forms of bariatric surgery can be performed laparoscopic, with each differing in average amounts of weight loss expected (ASMBS, 2017a). The Roux-en-Y gastric bypass bariatric surgery is a procedure in which most of the stomach is resected except for a small pouch that holds approximately one ounce of chewed food, and the intestines are altered causing calorie malabsorption (ASMBS, 2017a). Over time, this pouch can expand to hold up to 8 ounces of food (U.S. National Library of Medicine, 2017b). The Roux-en-Y can produce a 60 to 80% excess body weight loss (ASMBS, 2017a); the pounds a person weighs above their ideal body weight is considered excess body weight (The Cleveland Clinic Foundation, 2015). The sleeve gastrectomy bariatric surgery alters the stomach into the shape of a banana, by removing approximately three quarters of it (stomach) but intestines are not altered; this can produce a > 50% excess body weight loss (ASMBS, 2017a). The adjustable gastric band bariatric surgery leaves the stomach and intestines intact, but places a band (inflated with a small amount of fluid) around the top part of the stomach making a pouch; the band has an opening so that the food can migrate to the lower part of the stomach; this can produce a 40 to 50% excess body weight loss (ASMBS, 2017a).

For severe or morbidly obese patients to be successful with bariatric surgery, they must be prepared to commit to lifelong lifestyle and behavioral changes (National Institute of Diabetes and Digestive and Kidney Diseases [NIDDK], 2016). These changes include: eating nutritious meals in appropriate portion sizes, participating in daily exercise, taking proper vitamin and
mineral supplementation, and consistent follow-up with a health care provider [bariatric surgeon and/or primary care provider] (NIDDK, 2016). Follow-ups with providers should be at regularly scheduled intervals and include: monitoring for health issues including malabsorption, checking vital signs and serum labs, and medication management. In addition to tracking weight loss progress [suboptimal and/or optimal] (NIDDK, 2016), providers need to be actively engaged in offering support, and making referrals to other specialty health care providers as needed. Support and encouragement from family, friends, and peers are also critical for post-surgical bariatric patients in their weight loss efforts (Sharman et al., 2015), to help achieve and maintain their weight loss goals.

**Problem**

There is a portion of post-surgical bariatric patients who have suboptimal weight loss outcomes, losing less weight than expected or regaining weight lost (Karmali et al., 2013; Sarwer, Dilks, & West-Smith, 2011). These suboptimal outcomes have the potential to turn into weight cycling aka yo-yo dieting for these patients whereby they lose weight, gain weight, lose weight again, and gain it again on a continuous basis (Strohacker, Carpenter, & McFarlin, 2009). This weight cycling can cause new comorbidities to appear, or have comorbidities that may have resolved prior, to reappear (Strohacker, Carpenter, & McFarlin, 2009).

The *honeymoon period* is 12 to 18 months immediately following the patient’s weight loss surgery. During this period, patients experience rapid loss of excess body weight; this is the point where patients should be working on maintaining their excess body weight loss, although, this may also be when some patients begin to regain weight (Shah, 2017). One study found up to 50% of post-surgical bariatric patients experience weight regain after 24 months (Magro et al.,...
2008), whereas another study found weight regain increases more, the further patients are out in follow-up from their original surgery (Golomb, David, & Glass, 2015).

Causes of suboptimal weight loss outcomes can be behavioral, psychological, physical, metabolic, psychosocial, or a combination thereof (Karmali et al., 2013; Sarwer et al., 2011). Longitudinal studies have shown that long-term, most post-surgical bariatric patients have kept at least 50% of their excess body weight off, that they initially lost after surgery (American Society for Metabolic and Bariatric Surgery [ASMBS], 2017c); it is unclear what most means or the exact percentage of excess body weight loss that is truly being maintained. This finding may be influenced by patients lost to follow-up, experiencing weight regain. It is unknown how many patients do not follow-up with a provider on a regular basis after bariatric surgery; research has shown that post-surgical bariatric patients lacking follow-up have suboptimal weight loss outcomes (Harper, Madan, Ternovits, & Tichansky, 2007).

Purpose

A better understanding of post-surgical bariatric patients’ suboptimal outcomes is needed. The purpose of this DNP project is to describe patients’ perceptions, expectations, and experiences after bariatric weight loss surgery, and the factors they may identify as facilitators and barriers to successful weight loss and weight maintenance. Describing the impact bariatric surgery has had on these patients, may help guide primary care providers to deliver more therapeutic and competent, lifelong follow-up care for these patients. By analyzing post-surgical bariatric patients’ responses to open-ended structured interview questions conducted in a focus group, and identifying recurrent themes, providers may begin to explore the impact bariatric surgery has had on these patients. This process may identify differences between post-surgical
bariatric patients who have had success with weight loss and weight maintenance, and those who have been unsuccessful in their efforts. The findings of this evaluation may assist primary care providers in recognizing post-surgical bariatric patients at risk for suboptimal outcomes, enabling providers to better intervene in follow-up with these patients, leading to improved health and weight loss outcomes for bariatric patients.

Many post-surgical bariatric patients choose to see their primary care providers for follow-up care after bariatric surgery, as well as for general management of their other health issues and comorbidities (Healio, 2011; University of Rochester Medical Center [URMC], 2017b). It is vital that primary care providers have a knowledge base and understanding about what post-surgical bariatric patients perceive, expect, and experience as they evolve through the weight loss and weight maintenance process.

**Project Questions**

1. What are post-surgical bariatric patients’ perceptions after weight loss surgery?
2. What are post-surgical bariatric patients’ expectations after weight loss surgery?
3. What are post-surgical bariatric patients’ experiences after weight loss surgery?
4. What are factors that post-surgical bariatric patients identify as facilitating successful weight loss and weight maintenance?
5. What are factors that post-surgical bariatric patients identify as barriers or challenges to successful weight loss and weight maintenance?
FRAMEWORK AND SYNTHESIS OF EVIDENCE

Theoretical Framework

The Transtheoretical Model “Stages of Change” relates to post-surgical bariatric patients’ readiness for the lifestyle and behavioral changes needed to achieve and maintain their weight loss goals (Pro-Change Behavior Systems, Inc. [PCBSI], 2016). There are six “Stages of Change” in the Transtheoretical Model including: Precontemplation, Contemplation, Preparation, Action, Maintenance, and Termination (PCSBI, 2016). Readiness for change stages occur linearly on the Transtheoretical Model, and although on a continuum, may stop at a specific stage of change, remain there permanently or for a period of time, and then move forward or potentially retrograde backwards to earlier “Stages of Change” (PCSBI, 2016). Bariatric patients experience these “Stages of Change” after weight loss surgery, potentially moving forward and retrograde through the “Stages of Change” multiple times during their lifetime. The forward continuum movement on the Transtheoretical Model can be influenced by positive facilitators that promote weight loss, weight maintenance, and healthy behaviors and habits in post-surgical bariatric patients; contributing to the opposite retrograde movement on the continuum, can be challenges and barriers patients experience that are averse to meeting those weight and health goals.
Transtheoretical Model “Stages of Change” showing the post-surgical bariatric patients’ readiness for lifestyle and behavioral changes to achieve and maintain weight loss goals (PCSBI, 2016) (Figure 1).

**FIGURE 1. Transtheoretical Model “Stages of Change”**

- When the post-surgical bariatric patient is in the *Precontemplation* stage, they are resistant to change, being non-compliant in aspects of the weight loss process, and do not want to listen to reason (PCBSI, 2016).
- In the *Contemplation* stage, the post-surgical bariatric patient is considering change, and open to discussing and learning more about change and improvement, to help them reach their weight loss and health goals (PCBSI, 2016).
- When the post-surgical bariatric patient is in the *Preparation* stage, they have decided they want to change or improve upon some of their behaviors and habits, and have made specific, positive steps towards losing weight and improving their health (PCBSI, 2016).
Examples of this may include the patient has joined a bariatric support group, they are meeting with the dietician to learn more about bariatric nutrition, or seeing a psychologist or counselor to understand their behaviors better.

- The *Action* stage is when the post-surgical bariatric patient is being proactive and setting goals; they are changing their unhealthy behaviors, taking responsibility for their actions, and being an active participant in their weight loss process (PCBSI, 2016). Examples of this may include: the patient is eating a healthy bariatric diet, exercising, attending follow-up medical appointments, and being an active part of a positive support system. This support system may include family, friends, and other post-surgical bariatric patients, that can give positive encouragement and support to the patient, to help them in achieving weight loss success. In addition, in this *Action* stage, the primary care provider should be assessing what additional health care provider referrals would be best suited for the patient to optimize their weight loss success, and be working collaboratively with the post-surgical bariatric patient, encouraging them to achieve their weight loss and health goals (PCBSI, 2016; Weaver, 2016).

- The goal of the post-surgical bariatric patient is to reach the *Maintenance* stage, through maintaining the positive, healthy habits and behaviors they have gained through the Transtheoretical Model staging process (PCBSI, 2016). In *Maintenance* stage, the patient may continue to achieve further weight loss if needed to reach their health goals, or maintain their weight if they have met their goals. In this stage, the patient has found weight loss, weight maintenance, and health strategies, along with support systems that are positive and work best for them (PCBSI, 2016).
Although the last stage in the Transtheoretical Model is the *Termination* stage, this stage is unrealistic for most post-surgical bariatric patients (PCBSI, 2016). It is the stage where a person never reverts back to unhealthy behaviors or habits (PCBSI, 2016). A realistic goal is to remain in the *Maintenance* stage permanently and successfully (PCBSI, 2016). Understanding the Transtheoretical Model “Stages of Change” post-surgical bariatric patients pass through, may help primary care providers give better guidance to this population (PCBSI, 2016). The provider may also be able to use these stages as a guide to help these patients achieve their best weight loss and health outcomes (PCBSI, 2016).

**Synthesis of Evidence**

Extensive literature review searches were conducted utilizing Cumulative Index of Nursing and Allied Health Literature (CINAHL), Google Scholar, and PubMed. Search key words/phrases and related terms included: bariatric(s), bariatric surgery (pre- and post-, and perceptions), weight loss surgery, Roux-en-Y, gastric bypass, gastric sleeve, bariatric patient(s) (weight gain, weight regain, weight loss success and failure, lifestyle changes, post-surgical outcomes, eating behaviors, suboptimal weight loss, weight maintenance, interventions, long-term weight loss maintenance, quality of life, and experiences), and obesity-related diseases and comorbidities. Article inclusion criteria: published within the past 10 years, English language, and adult patient population (age ≥ 18). These searches yielded 267 articles, and were further excluded if included pediatric patients or if not specifically pertaining to bariatric surgical patients.

For the purpose of this DNP project, 20 articles were retained including: three “systematic reviews,” one “systematic review/meta-analysis,” and one “meta-analysis/meta-
regression.” Due to multiple articles incorporated into each of the “systematic reviews/meta-analysis/meta-regression” review articles utilized in this literature review, individual articles were checked, and if included into one of these reviews, were excluded to avoid doubling of information (Appendix H). Study participant sample sizes under subtitles in this section are represented by (N=# of participants); multi article reviews and analyses are represented by (N=M).

**Positive Predictors of Post-Bariatric Surgery: Successful Results**

Predictors associated with positive effects post-bariatric surgery including improved weight loss outcomes and weight maintenance success include:

- Patients participating in behavior and lifestyle interventions long-term including:
  - attending support groups, eating a healthy diet, exercising [N=M] (Rudolph and Hilbert, 2013), attending counseling/psychological visits [N=80; N=M] (Kruseman et al., 2010; Rudolph and Hilbert, 2013), and following-up with their health care providers [N=61] (Conceicao et al., 2014).
- Feeling secure within oneself; having confidence [N=80] (Kruseman et al., 2010).
- Participating in physical activity [N=199] (Bond et al., 2009).
- Research conflicts on whether older age [N=1426] (Shanktavasinkul et al., 2016), or younger age [N=80] (Kruseman et al., 2010) leads to improved weight loss outcomes.
- Being of male gender [N=1426] (Shanktavasinkul et al., 2016).
Negative Predictors of Post-Bariatric Surgery: Suboptimal Results

Predictors associated with negative effects post-bariatric surgery including weight gain, weight regain, or suboptimal weight loss outcomes include:

- Dietary non-compliance: increased calorie and food portion consumption, high sugar/fat/salty foods, grazing behavior \([N=80; N=M]\) (da Silva, Gomes, & de Carvalho, 2016; Karmali et al., 2013), and picking and nibbling behaviors \([N=61]\) (Conceicao et al., 2014).

- “Higher baseline BMIs, greater preoperative weight loss” \([N=2365]\) (Still et al., 2014), and pre-surgery weight gain \([N=227]\) (Al-Khyatt, Ryall, Leeder, Ahmed, & Awad, 2017).

- Hormonal or metabolic imbalances: increased plasma ghrelin levels, hypoglycemia \([N=M]\) (Karmali et al., 2013), type II diabetes \([N=227; N=2365]\) (Al-Kyatt et al., 2017; Still et al., 2014), and iron deficiency \([N=2365]\) (Still et al., 2014).

- Mental health: eating disorders, impulsive behaviors, depression, alcohol/drug use, food urges \([N=M]\) (Karmali et al., 2013), cognitive deficits (memory, attention-span, and self-control), stress, neuroticism, narcissism, adverse childhood experiences \([N=M]\) (Wimmelmann & Mortensen, 2013), binge eating disorder, and severe, chronic, or more than one mental health disorder \([N=M; N=80; N=M]\) (Karmali et al., 2013; Kruseman, Leimgruber, Zumbach, & Golay, 2010; Wimmelmann & Mortensen, 2013).

- Physical activity: being less active or inactive \([N=M]\) (Karmali et al., 2013).

- Surgical complications: dilation of a gastric stoma or pouch \([N=M]\) (Karmali et al., 2013).
• Fewer follow-up visits to health care providers [N=61; N=M] (Conceicao et al., 2014; Karmali et al., 2013).

• Research conflicts on whether older age > 50 [N=227, N=2365] (Al-Khyatt et al., 2017; Still et al., 2014), or younger age [N=1426] (Shantavasinkul, Omotosho, Corsino, Portenier, & Torquati, 2016) leads to suboptimal weight loss outcomes.

• Having fewer comorbidities pre-bariatric surgery [N=1426] (Shantavasinkul et al., 2016).

• Being of female gender [N=1426] (Shantavasinkul et al., 2016).

• Being a non-smoker [N=2365] (Still et al., 2014).

• Not being an insulin-dependent type II diabetic pre-bariatric surgery [N=1426] (Shantavasinkul et al., 2016).

**Post-Bariatric Surgery Improvements in Mental Health and Quality of Life**

Bariatric surgery can help patients improve:

• Low self-esteem and body image, depression, social life, coping skills [N=M] (Wimmelmann & Mortensen, 2013), and body image satisfaction [N=80; N=148] (Kruseman et al., 2010; Neff et al., 2014).

• Quality of life in multiple areas including: physical and mental health (including comorbidities), and vitality [N=199; N=34; N=57] (Bond et al., 2009; Major et al., 2015; Reynolds et al., 2017), detrimental eating behaviors, anxiety [N=43] (Thonney, Pataky, Badel, Bobbioni-Harsch, & Golay 2010), and economic status [N=148] (Neff et al., 2014).
Post-Bariatric Surgery and Comorbidity Improvements

Obesity-related comorbidities that have been proven to completely resolve (go into remission) or be improved post-bariatric surgery include: type II diabetes, hypertension, hypercholesterolemia, and hyperlipidemia [N=443; N=34; N=M; N=M; N=1426] (Golomb & Glass, 2015; Major et al., 2015, Puzziferri et al., 2014; Ricci et al., 2015; Shanktavasinkul et al., 2016), but may level off or change over time dependent upon BMI variation [N=M] (Ricci et al., 2015). Neff et al. (2014) [N=148], found that bariatric surgery and successive weight loss improved patients’ airways, cardiovascular health, type II diabetes, and functionality.

Weight Loss, Weight Regain and Weight Maintenance

Research has shown weight loss effects begin to diminish 12 months after bariatric surgery [N=M] (Wimmelmann & Mortensen, 2013); this is when a substantial number of bariatric patients experience some percentage of weight regain, with increasing suboptimal weight loss outcomes [N= 80; N=M; N=43; N=704] (da Silva et al., 2016; Rudolph & Hilbert, 2013; Thonney et al., 2010; Cooper et al., 2015). One study found an average weight loss maintained eight-years post-bariatric surgery was only 67.5 lbs. [N=80] (Kruseman et al., 2010). Another study by Reynolds, Byrne, and Hamdorf (2017) [N=57], found patients maintained a mean excess body weight loss of only 31 to 46%, four to five years postoperatively.

Qualitative Studies of Bariatric Patients

Only two qualitative bariatric surgical patients’ studies were found appropriate for this literature review. Both identified recurring themes through one-on-one interviews with post-surgical bariatric patients. LePage (2010) [N=12], sought to understand the post-surgical experiences of Roux-en-Y patients and identified an overarching theme of the paradox. The
*paradox* was that participants believed everything would be just wonderful after Roux-en-Y surgery, when in reality, they felt unprepared for the *new person* they were developing into on the outside, feeling “emotional incongruity” on the inside. Other themes emerged from LePage’s (2010) study including: “renewed hope” for an improved future, recognizing “finding balance” in life, “filling the void” that food used to mitigate, and taking time to understand “transformation” of self-image is a process.

Jones, Cleator, and Yorke (2016) [N=10] wanted to explore the expectations and experiences of post-surgical bariatric patients who had experienced weight regain, and identified the overarching theme of “*passivity*: spectating at the post-surgery experience;” participants not taking an active role in their weight loss journey to achieve success. Other themes emerged from the Jones et al. (2016) study including: “euphoria and liberation” post-surgery, giving into cravings for unhealthy food and still losing weight (although temporarily), a feeling of vulnerability and the need to be protected again (that their weight loss has left them exposed), surgery misconceptions that the surgery would cause permanent weight loss without active participation, and feelings of “abandonment and disempowerment.” Participants also described feeling alone, unmotivated, and wondered how to get help to not gain back the weight, not realizing their health care provider and others can help; depression varied dependent upon amount of weight regained, and social withdrawal was due to “shame and feeling judged” (Jones et al., 2016). Jones et al. (2016) also interviewed participants on recommendations they felt could help manage or prevent weight regain; participants recommended: continual psychological support, learning how to self-manage their weight loss, wanting health care providers to hold
them accountable in their weight regain (firm but supportive and encouraging) and teach them how to set up a plan and goals, and peer support.

**METHODS**

**Institutional Review Board (IRB)**

University of Arizona IRB approval was obtained prior to DNP project initiation; and the projects was classified by University of Arizona IRB as exempt. IRB approval means that anyone choosing to participate as a human subject in a research study or project, needs to have their rights and welfare protected (U.S. Food and Drug Administration, 2016). Study/project researcher(s) must have a protocol in place, taking steps to facilitate this protection (U.S. Food and Drug Administration, 2016).

**Ethical Considerations**

The major ethical principles applicable for research involving human participants includes: respect for persons, beneficence, and justice (Office for Human Research Protections [OHRP], 2016).

**Respect for Persons**

Respect for persons includes acknowledging and confirming a potential project participant is autonomous and is “capable of self-determination” to make and deliberate a decision, and to respect their opinions, judgments, and decisions (OHRP, 2016). Participants understood they have the freedom to make any decision, and they chose to participate in the focus group project fully voluntarily, and of their own free-will (OHRP, 2016). All human participants involved in this project were respected and protected, no participants were
recognized as not capable of self-determination or autonomy; this clinical project investigator, Alexis Hanson, strived to respect and protect all participants in this project (OHRP, 2016).

**Beneficence**

Beneficence is taking action to maximize benefits and to minimize any potential harm to project participants (OHRP, 2016). The intent is always not to do harm, through utilization of best practices and best judgment, although there is no guarantee that participants will not be exposed to a potential risk (OHRP, 2016). In this project, the risk was minimal (the risk being emotional duress or distress). Bringing up the importance of informed consent and integrity; the project participants were made aware of what the project involved and associated minimal risks (OHRP, 2016). No participants verbalized emotional duress or distress before, during, or after the project, although there was information available prior to, during, and after the focus group, on facilities that provided mental health and counseling services in the Fargo, North Dakota area (Appendix G). These facilities included: Prairie St. John’s, The Village Family Service Center, Essentia Health Behavioral Health, and Sanford Health Behavioral Health.

**Justice**

Justice is that all should be fair and equitable [benefits and burdens] (OHRP, 2016). All participants received the same treatment and had the same opportunity to participate in this project (OHRP, 2016). Participants voluntarily chose to participate in this project and met the criteria of the project (OHRP, 2016).

**Project Design**

This DNP project utilized a qualitative descriptive design employing a focus group of five post-surgical bariatric patients, to describe patients’ perceptions, expectations, and
experiences after weight loss surgery, including possible facilitators and barriers to successful weight loss and weight maintenance. Qualitative descriptive research is a comprehensive research approach that summarizes a group experience, allowing the event to unfold naturally and without interference, gathering detailed information, to achieve data saturation (Lambert & Lambert, 2012). This bariatric project utilized semi-structured, open-ended interview questions asked in a focus group session, fitting to this research design (Lambert & Lambert, 2012). The goal of this project was to describe bariatric patients’ lives after weight loss surgery.

Setting

The setting of this project took place in a private conference room at North Dakota State University (NDSU) in Fargo, North Dakota (Appendix F). This location was chosen because it is a well-known location (this is the main university in Fargo), and had audio recording equipment available.

Participants and Recruitment

Criteria for participant inclusion in this project included: participants must be adults (age ≥ 18) at the time of initial bariatric surgery, speak, write, and understand English, and be at least 18- months post-operative bariatric surgery; all project participants met the criteria. Post-surgical bariatric patients were recruited for this project through bariatric support groups (support group participants had contact with each other in-person and via telephone), provider referrals, and snowball sampling, utilizing the Participant Recruitment Script or Bariatric Project Public Announcement Flyer (see Appendix D). Through these avenues of recruitment, potential participants were identified and invited to participate in the project. Participants were each given
a $20 gift card for participation upon arrival to setting, prior to the beginning the focus group discussion, to alleviate any pressure of participation.

There were five participants in the focus group ranging in age from 37 to 67 years, with a mean age of 57.8 years. All participants were approximately 9 to 12 years’ post-bariatric surgery, with mean years’ post-op since initial surgery of 11 years. Four participants had the Roux-en-Y gastric bypass and one had the adjustable gastric band. The Roux-en-Y participants (three female and one male) were all related (members of the same family). In total, four of the project participants were female and one was male. All participants were Caucasian.

**Focus Group Questions, Probes, and Demographic Questionnaire**

After thorough search of the literature, common themes became evident including: the need for support following bariatric surgery, and facilitators and barriers to weight loss, weight maintenance, and weight regain. Additional themes included: misguided expectations of results of bariatric surgery, personal responsibility after bariatric weight loss surgery, and quality of life and health after surgery. Following this review, five focus group questions were developed along with a number of probes to elaborate on participants’ experiences (Appendix B). Probes are an integral part of these semi-structured interview questions, allowing for more in depth, detailed responses from participants, and allows for clarification and elaboration of responses (Rubin & Rubin, 1995). A seven-question demographic questionnaire form was developed to give basic personal and medical background pertinent to the focus group interview (Appendix A).
Data Collection Procedures

Potential Personal Biases and/or Assumptions: Prior to data collection, this clinical project investigator reflected on the following personal facts as they are related to the project (Colarofi & Evans, 2016):

- This clinical project investigator is a post-surgical bariatric patient that has had success with the Roux-en-Y bariatric surgery, and maintains a normal and healthy BMI.
- Being a nurse for many years, this clinical project investigator has taken care of post-surgical bariatric patients directly after their weight loss surgery as well as years after their surgery; she has seen successful weight loss and maintenance, as well as weight regain in these patients.
- As nursing faculty (in the classroom and clinical settings), and as a DNP (FNP specialty) graduate student, this clinical project investigator is well aware of the causes and health consequences of obesity and that it has become an epidemic.

This clinical project investigator decided not to disclose these personal facts to her participants, to help avoid any potential influence on the participants’ focus group discussion and/or participant answers to the open-ended questions discussed in the focus group. It was planned that if participants did inquire about these personal facts, this clinical project investigator would have responded in a respectful, compassionate manner stating, “I appreciate your question, but today is totally about you and I want to hear your story about life after bariatric surgery,” then this clinical project investigator would have continued the focus group discussion questions and probes. During the focus group session, none of the participants inquired about these personal facts about the clinical project investigator.
The focus group session included signing consents (Appendix E), gathering demographic data, explaining the procedures of the focus group session, and conducting the focus group. Data were collected utilizing three separate audio recorders to make sure all data were heard clearly for accuracy in transcription. The analysis consultant was utilized to assist in the audio recording of the focus group interview session, so this clinical project investigator was able to remain focused on the group. The analysis consultant was approved by University of Arizona IRB, is a tenured nursing faculty in North Dakota, and a qualitative researcher with multiple peer-reviewed publications. This clinical project investigator guided the focus group session with the participants, utilizing follow-up questions (“probes”) to allow for the expansion of participants’ answers and narratives (FocusGroupTips.com, 2017; SAGE Publications, 2017).

Participants in the focus group were asked to provide comments on their perceptions, beliefs, feelings, and opinions held (Marczak & Sewell, n.d.). Advantages to the focus group included: group support, participants’ “own words” lending itself to a deeper understanding of the topic, and this clinical project investigator was able to interact directly with all participants in the project at the same time (Marczak & Sewell, n.d.). Though the plan for the total time participants would be involved in the project was approximately 120 minutes, the participants continued to elaborate on the open-ended questions beyond the original time expected, and therefore participated in the project for approximately 140 minutes. Focus group time included: time to welcome participants (and give the gift cards), sign consents, go over ground rules of project, ask questions, fill out the demographic questionnaire, and participate in the focus group session.
Data Analysis

The three audio recordings of the focus group session were kept secure and downloaded onto this clinical project investigator’s password-protected computer; the only other individual having access to this was the analysis consultant. This clinical project investigator transcribed the audio recording from the focus group session verbatim from one of the audio recordings, utilizing the transcription software Express Scribe Translation Software V6.00 (Sutton & Austin, 2015), then relistened to the initial recording and listened to the two additional audio recordings, comparing all three to the transcribed document to ensure accuracy (Sutton & Austin, 2015). Accuracy of the transcribed document was confirmed by this clinical project investigator by reviewing all transcriptions, and through random reviews by the analysis consultant.

The purpose of the data analysis was to organize the transcribed audio recordings and present a narrative that provided a description of post-surgical bariatric patients’ perceptions, expectations, and experiences after weight loss surgery (Rubin & Rubin, 2012), which is what this recording and transcription achieved by identifying facilitators and barriers to successful weight loss and weight maintenance. This clinical project investigator read and reread the transcript multiple times to reflect upon the data, making comparisons while manually coding the transcript and categorizing the codes (Schmidt & Brown, 2012). This clinical project investigator created a coding sheet to facilitate the coding process, that identified topics (commonalities and differences) through participants sharing their personal stories, leading to the identification of common themes (Sutton & Austin, 2015) that described patients’ perceptions, expectations, and experiences post-bariatric surgery. The analysis consultant spot-checked the coding process, and found it to be accurate. While coding the data, this clinical project investigator utilized self-
reflection to recognize and acknowledge personal viewpoints and feelings, to help avoid biases (Schmidt & Brown, 2012). Due to this clinical project investigator’s personal experience as a bariatric patient, as reading through the transcript, she also bracketed narratives participants described, that she herself may have experienced as a bariatric patient or held the same viewpoint; she did this to help avoid bias (Schmidt & Brown, 2012). She also manually journaled ideas that arose while reviewing and coding the transcript, including her own personal experiences (Rubin & Rubin, 1995). Self-reflection, bracketing, and journaling were typically done simultaneously (manually) by this clinical project investigator while reviewing the transcript. Bracketing automatically led to self-reflection and journaling, allowing this clinical project investigator to be cognizant to avoid bias.

**FINDINGS**

While reviewing the transcribed data, three structured categories emerged from the data that included: “Choosing Surgery,” “Readiness for Change,” and “Finding Your Path.” Five themes were developed from these three categories through supportive narratives from the focus group participants. These categories, themes, and supportive narratives are as follows:

- **Category 1) “Choosing Surgery,” Theme: a) Surgery as a Weight Loss Solution** with narratives including: past experiences (personal stories, dieting, self-perception, and stigma) and influences (social, media, family, and provider).

- **Category 2) “Readiness for Change,” Theme: a) Confronting Physical and Emotional Realities, and Unexpected Challenges** with narratives including: knowledge deficits (lifestyle changes and trial and error) and eating impact (side effects, trigger, and social situations), and **Theme: b) Evolution of Self-Image** with narratives including: brain-body
disconnect (weight loss and weight gain insights) and benefits (positive outcomes of weight loss).

- Category 3) “Finding Your Path,” Theme: a) Weight Loss Surgery as a Tool with Personal Responsibility with narratives including: misconceptions and risks, and behavior and habit lifestyle changes (accountability, responsibility, and self-awareness), and Theme: b) Support, Knowledge, and Guidance: The Missing Link? with narratives including: support (hospital-based, peer-based, family, and social) and provider competency and care (primary care and bariatric).

Also after review of the categories and subsequent themes, an overarching theme became evident as being a Mixed Blessing defined as “a situation or circumstance that is generally favorable or advantageous although may also have unfavorable or disadvantageous features” (Dictionary.com, 2017). Categories and themes are discussed in detail below with focus group participants’ narratives:

**Category 1: Choosing Surgery**

**Theme: Surgery as a Weight Loss Solution**

Prior to choosing bariatric surgery, participants described experiences being on multiple diets and diet medications, sometimes doing a combination of these simultaneously to lose weight. They described these diets as ineffective, recounting when going off the diets, the lost weight was regained; one participant stated (with others voicing in agreement) “you lose 10 or 15 pounds, or lost all your weight, and you stop it (the diet), and the weight goes right back up.” Participants also discussed that for permanent weight loss, lifestyle changes and support are necessary. They described being very self-conscious and embarrassed of being obese. One
detailing that she stood at an event because she didn’t want to sit down in a chair with concerns of breaking it; she stated when asked “why are you standing, you don’t want to admit that I might break the chair and embarrass myself, cause I don’t want you to laugh at me,” with another adding that he “broke a couple chairs in a row.” Participants also discussed the embarrassment of trying to fit into small, enclosed areas such as airplane seats and bathrooms, and the doors not being wide enough.

The Roux-en-Y participants in this focus group, all of who had successfully lost and maintained their desired weight, believed the surgery would enable them to achieve weight loss success, with the hopes of improving their health and comorbidities caused by obesity including: HTN, type II diabetes, GERD, and body pain. One expressed that she doubted herself prior to the having the surgery, thinking it’s “going to work for them (her family), and it isn’t going to work for me.” Roux-en-Y participants voluntarily sought out to find a surgeon and facility to have their weight loss surgery done, whereas the gastric band participant felt she was pushed by her physician to have the surgery even though she had no comorbidities. The Roux-en-Y participants in the project were members of the same family, describing that after the first one of them had the bariatric surgery and it was successful, it gave them all incentive to have it done. The first one stating “I was like the test subject. I think I was mentally and physically prepared; I had a good attitude going into it because I fought so hard to have it done;” this participant also discussed encountering roadblocks when planning to have the surgery stating “the insurance company wouldn’t pay due to the union where I worked made the medical decisions on what would be covered, so I quit my job, sold my house, and had it done on my own.”
Participants perceived outsiders as stigmatizing obese individuals, with beliefs that obesity is self-inflicted. Participants stated that “skinny people look at fat people, and they think you’re a bad person; they don’t realize I don’t want to be like this,” “that people think if you need bariatric surgery, your undisciplined or eat too much,” or “that you’re a big eater; if you’d quit eating, you’d lose weight.” Participants believed they were not overeaters, believing there was a genetic component involved with weight, since many of their family members were overweight or obese. Two were diagnosed with thyroid disorders, believing this may have been a component in causing weight gain as well. One shared that when she had the bariatric surgery done, she initially “didn’t say a lot to people;” concerned it may confirm the belief to others that obesity is self-inflicted. Participants also recognized certain media celebrities being hypocritical, that while criticizing bariatric surgery to the public as a means to weight loss and resolving obesity, instead promoted the success of their own diet programs for personal financial gain. They also believed celebrities that have had bariatric surgery and experienced weight regain, bring unfair and negative attention to having weight loss surgery. Participants stated “don’t broadcast it if it didn’t work,” and “don’t lump the rest of us into that category.”

Category 2: Readiness for Change

Theme: Confronting Physical and Emotional Realities, and Unexpected Challenges

Initially, participants believed they were fully prepared and ready for the lifestyle and eating changes they would need to implement post-surgery, although came to the realization following bariatric surgery, they were not prepared for the extent of changes needing to be implemented. Participants discussed many things they did not anticipate after surgery. They did not anticipate the amount of time it would take to plan and eat meals, and most notable, they did
not anticipate the impact of needing to eat slowly. Following surgery, they needed to cut up their food to eat smaller bites and chew their food extensively into a ground up consistency to be able to swallow it. They recognized some family and friends became frustrated with their new eating habits following surgery. One stating, “when I go out to eat I’m the last one to finish eating and everyone’s frustrated. I avoid certain situations because I don’t want to be odd man out; I was odd man out because I was overweight and now I’m the odd man out because it takes me an hour to eat.” With others stating that “other family members have a fit about the way we eat, with nephew saying I don’t know why you need that hot dog, all you need to do is lick it and your done eating,” and that “you feel like you’re holding other people up.”

Participants also did not anticipate they would get full eating such small amounts of food comparable to the size of a small piece of an appetizer or an hors’oeuvres, and that if they ate too fast or ate too much, they would get chest pain, nausea, or the “foamies.” Foamies have been described as excess saliva or mucus building up or coming up in the throat (ObesityHelp Inc., 2017). Participants depicted learning through trial and error their food tolerances and intolerances, discussing that eating sugar-laden foods or eating a larger quantity of food can cause them to have nausea, diarrhea, and/or flatulence. They also realized that certain foods such as breads, were unable to be chewed into a consistency able to be swallowed comfortably, without sticking in their throat. One described “I remember very distinctly I had this horrible habit because I was so time poor going from work; I’d go through a (fast food) drive thru and get a burger and that bun darn near killed me; it feels stuck and it was enough to make me feel I was going to die right in the car. That was a wake-up call for me; this worked before and that’s how you got here (referring to being obese); this was never going to happen again.”
Participants also had to relearn how to shop for groceries and eat out socially. One described going to the grocery store, filling his cart with groceries, and leaving it at the door of the grocery store, since it was how he used to shop pre-surgery. Shortly after their initial bariatric surgery, participants described that in social eating situations, they had fears and concerns about offending others if they didn’t eat or ate a smaller food portion size. One described a situation where she was in Italy 30 days after the surgery. She stated “I was supposed to sample food items and take care of a menu for a group; chef and head of hotel were there,” she thought to herself “I can’t eat this (pasta), I’m going to get sick, but the chef thought I didn’t like the food.” She said “it created unique challenges where I felt really at a disadvantage that I couldn’t eat.”

Roux-en-Y participants described after reaching their goal weight, they no longer felt self-conscious or obligated to eat the way others do, and instead ate how, what, and when they wanted, pertinent to their surgery. They also reflected on their anxiety and concern over any weight gain after their initial weight loss. One stating, “I’m always thinking of the numbers (on the scale) of my weight, and I can always tell with a pair of jeans how they fit, can I button it or not button it; can I get it zipped?” The gastric band participant who had suboptimal weight loss results expressed feelings of isolation and loneliness post-surgery due to unexpected lack of family support and understanding about the surgery, and that her family had greater weight loss expectations for her than she had for herself.

Participants expressed still having tendencies to overindulge in specific “trigger” foods with high concentrations of salt, sugar, and fat, if available to them. They gave examples of chips, donuts, sunflower seeds, dark chocolate Kit Kats, and sweets. Participants reported now having insight into these behaviors and habits, and have found solutions to help them avoid the
tendency to overeat in situations by portioning out meals, sharing meals, and taking home leftovers from larger serving sizes when eating out socially.

**Theme: Evolution of Self-Image**

Roux-en-Y participants experienced a brain-body disconnect during the weight loss process. During this process, while their body size was decreasing at a rapid rate, their brain wasn’t fully comprehending the body changes or weight loss happening in real-time. Clothing that fit participants one week, didn’t fit the following week due to the rapid weight loss and shrinking body size. At times, Roux-en-Y participants became upset and frustrated due to having nothing to wear since everything was too big. One stating “I cried for an hour because I couldn’t find anything to wear, everything was too crappy and too big, and that’s the realization, it hit me I had lost weight.” Roux-en-Y participants initially described feelings of being uncomfortable shopping in clothing stores that carried smaller sizes, feeling they didn’t belong there. These participants eventually accepted themselves as a smaller size and gained confidence to shop at these stores. They also explained gaining insight through the realization and acceptance of their weight loss as a positive, good, and happy experience, although expressed at times they still felt weird. The Roux-en-Y participants also described loose skin resulting from the excess body weight they lost, but stated they could “live with that,” and that elastic spandex undergarments could be worn to tighten up those areas underneath their clothes. One stated he had “skin reduction done, a tummy tuck; a panniculectomy that took out 40 to 50 lbs. of skin.”

After their initial weight loss, the Roux-en-Y participants had approximately a 20 to 40 lb. weight regain over time. These participants have otherwise maintained their excess body weight loss for many years (as discussed prior, average post-op years since participants’ initial
weight loss surgery is 11 years). They explained they believe body weight has a set point, and that after their strong initial weight losses, believed it was normal for the body to gain back a few pounds to a natural weight set point. These participants indicated they are content and pleased with their current weight, and felt fortunate they chose to have the weight loss surgery. Due to having successful long term weight loss results from the bariatric surgery, Roux-en-Y participants now felt confident and comfortable sharing their story with family, friends, and even strangers about their weight loss surgery experience, to help others experiencing obesity, learn about this life-changing opportunity.

Additional positive outcomes Roux-en-Y participants experienced after reaching their weight loss goals included: improved intimate relationships and sex life, that it was easier to get up and down from floor/chair to a standing position, clothes fit better and they had more clothing variety to choose from, the majority of their health issues resolved, and they felt more attractive being slimmer. One participant shared that both she and her husband had the Roux-en-Y stating “your sex life does get better, he was 400 lbs. and I was like 250; you know you just can’t, or it’s hard, so after weight loss surgery it’s improved; it’s better for him and me. It helps, so if anyone is thinking of having a couple doing it (having the bariatric surgery), go ahead and have it done.”

Health issues (comorbidities) that resolved for the Roux-en-Y participants included: HTN, type II diabetes, plantar fasciitis, GERD, and anxiety. One described feeling invisible and ignored by others due to obesity, but after surgery, received attention from others. She described that when shopping in a grocery store she frequented, employees now said hello to her and asked if they could help her, when before they didn’t. This participant believed this was due to her weight loss and being slimmer and more attractive now. Roux-en-Y participants also shared that some family
and friends thought they looked sick after the weight loss, but they personally felt good and were happy, so the comments didn’t bother them.

**Category 3: Finding Your Path**

**Theme: Weight Loss Surgery as a Tool with Personal Responsibility**

Participants believed the misconception about weight loss surgery is that all people will lose weight and achieve optimal weight loss results. Participants stated it was important that anyone considering weight loss surgery understand that it is only a tool, and that each person has a choice on how to use that tool, to be successful or not in losing their excess weight and maintaining that weight after surgery; stating that it “isn’t a quick fix” or a “magic thing.” Participants stressed that to achieve weight loss success it takes hard work and lifestyle changes, including the way you eat and what you eat. Participants agreed that they were each personally accountable for their own successes or failures for weight loss after the bariatric surgery, asserting that they were each responsible for learning how to use the tool they were given, effectively and in the right way. Participants characterized the key to success post-bariatric surgery, is to develop lifetime habits including permanent lifestyle changes of eating habits and behaviors, in order to reach weight and health goals.

Participants shared the importance of being conscious and aware of what and how much they were eating, with one stating to “be aware of mindless eating.” They described that each individual was different, and each person should discover what works best for them. One Roux-en-Y participant reported having a food addiction prior to surgery, and that after surgery has now turned into a shopping addiction; he stated “I have a downfall, it’s called shopping. I love to shop; it used to be food, now it’s just shopping. I see a bargain and I buy it.” The gastric band
participant reflected upon not truly appreciating the tool until recently, that although she hasn’t gained any weight since her initial bariatric surgery, only recently has she lost weight (30 lbs.). This participant described that she now appreciates the tool she has, and has incorporated exercise and eating appropriately into her daily regimen. Three of the Roux-en-Y participants expressed that they participated in planned exercise for a period of time after their surgery, but stopped going a long time ago, feeling they stayed active enough with their daily activities including shopping while taking “time to walk around the isles” and having jobs where they are on their feet all day. Due to this, these participants felt planned exercise wasn’t necessary. One Roux-en-Y participant never engaged in exercise due to chronic pain.

Roux-en-Y participants also discussed family members who criticized their weight loss. In one situation, a participant described a family wedding, stating that “relatives said she looks sick, saying she has cancer, and what’s wrong with her.” She said “it wasn’t until the photos came back, and the two of them that criticized me the most looked like Macy’s balloons and the thing is, now both of them have had the surgery because of that.” Eventually those two-family members regained back all their weight; she said “it kind of reinforced to me, it’s what’s in your head, how you approach it; nobody’s accountable to you but you.” Roux-en-Y participants shared they are glad they had the surgery, have no regrets, would choose to have the weight loss surgery again, and that it has changed their lives for the better. The gastric band participant believes she would not choose to have the band surgery again, but would consider conversion to the Roux-en-Y in the future, if had support afterwards. She felt that support would help make her more accountable with losing weight.
Theme: Support, Knowledge and Guidance: The Missing Link?

The Roux-en-Y participants in this focus group, all of who had successfully lost and maintained their desired weight, established their own support group due to being dissatisfied with hospital-based bariatric surgery support groups; attending more than one support group prior to being motivated to set up their own. They stated hospital-based support groups spent group session time mainly recruiting new patients to have the surgery and pushing commercial pre-packaged liquid and food supplements, rather than providing actual support or post-surgical bariatric patient education. They described hospital-based support groups as not authentic, being led by people from the hospital who never had the surgery themselves, and sometimes led by someone from the hospital who wasn’t even part of the bariatric department; one participant stated “one time it was someone from infection control.” Another shared a story about those leading the hospital-based support groups not having first-hand knowledge of having bariatric surgery; she said, “they really lack credibility, and it didn’t take long for the people there (at the support group) to pick up on that;” that a question would get asked and the leader would state “I haven’t had it done, but this is what I would tell you; it was all textbook stuff, and it wasn’t based on experience or anything else.”

Roux-en-Y participants described recognizing they weren’t being understood, educated, supported or helped in these hospital-based support groups, which is why they chose to establish their own strictly peer-based support group. Anyone who had any type of bariatric surgery, was thinking about having bariatric surgery, or was a family or friend of a bariatric patient wanting to learn more, was welcome to attend their peer-based group. One said, “we had an individual that came to our support group that wanted to have the surgery done but she had a very unsupportive
husband; we said bring him to the group and we can answer any questions he has. She brought him, and around the table we let him have it, we said it was her body, her life, her choice and if she wants it done, you support her; do not demonize her. She had it done (the bariatric surgery), and guess what, he had it done too; it was amazing, it was a transformation. How could that happen in any other situation if this support group did not exist?” Participants shared that discussions in these peer-based group sessions included both positive and negative experiences patients had post-bariatric surgery, including successes and challenges. The Roux-en-Y participants explained their group appreciated one another for the peer support and advice they received from one another. One shared, “the support group shared stories, discussed problems, and gave suggestions to each other.” The Roux-en-Y participants all agreed the peer-based support group made a significant impact in their individual weight loss and weight maintenance success, along with family support, and that the group held them accountable for their choices, successes, and failures. The gastric band participant expressed she wished she could have been a part of this group like this, and felt it would have helped her to make an informed decision about the gastric band surgery; plus, to know she would have support after the surgery. She described having no support prior to or after her gastric band surgery. This participant also felt that being part of a support group would have made her more accountable, and that she would have had more success with her weight loss tool.

Participants described learning basic post-surgical bariatric education from their bariatric program providers, although Roux-en-Y participants explained learning much more in the peer-based support group they developed and built, including education on oral intake and vitamin supplementation. The gastric band participant expressed learning most of the same things the
Roux-en-Y participants did during a six-week nutrition class her bariatric program held, except stated that she “does not have to take the vitamins but doesn’t know why.” The Roux-en-Y participants also reported there are online support forums for bariatric surgery, but it is important to sift through the information found online for accuracy; that some websites are more commercial product selling forums than support forums. Participants recommended that anyone considering having bariatric surgery make an informed decision by attending a peer-based bariatric support group prior to making their choice, to learn from people who have already had the bariatric surgery, about the pros and cons of the surgery and life after weight loss surgery.

Participants described being dissatisfied with health care providers, perceiving a lack of authenticity, compassion, understanding, insight, and knowledge in bariatric care. One participant shared that the doctor who told her she should have bariatric surgery was as overweight as she was, so she asked, “well did you have it (meaning the bariatric surgery), and they said no, it’s not for me.” Another participant stated, “the dietician was 450 lbs. trying to tell me how to eat; I thought how was this person going to teach me on what I’m supposed to eat when she doesn’t even believe in her own rules.” This participant also described that a nurse at his primary physician’s office that had the Roux-en-Y surgery but gained back all of her lost weight, still trying to give him advice; stating, “I’m taking advice from somebody it didn’t work for; she didn’t even listen to her own instructions.” With another participant volunteering that she only saw this nurse attend one support group.

Participants discussed when primary care providers addressed their weight during office visits, the providers just told them to lose weight, without offering options, ideas, or solutions on how to accomplish this. They also discussed providers only focusing on their health
issues/comorbidities, disease prevention, and prescribing medications during office visits, believing providers avoided the weight discussion due to time restraints or being uncomfortable with the subject. Participants described frustration with providers avoiding addressing obesity, stating that “now doctors are just in and out, they don’t think about you as a person anymore,” or that you are “just a number” to the provider. Only one participant stated their provider had been “real good after the gastric bypass.”

Participants believed that after having bariatric surgery, primary care providers’ knowledge was lacking in how to manage and care for post-surgical bariatric patients. One stated, “my family doctor has no clue how to handle bariatric issues.” Participants were passionate about having to be your own patient advocate with primary care providers after having bariatric surgery, or health issues may go unaddressed. One participant recounted having to specifically tell her primary care provider to check her iron since she felt low in it; after lab results came back, she said, “I had to have 5 iron infusions.” Participants also believed providers were presumptuous, thinking the consumer is naïve, and act as if the patient doesn’t have “a voice” in their own health care. They asserted they were not going to tolerate being disrespected, and have changed primary care providers when encountering these situations. Participants acknowledged primary care providers do vary in customer service and care, with some being much better than others. They discussed that providers need to understand health care is a consumer driven market, and patients are the consumers and have choices in their care. One stating “I think it’s a different consumer than in years past.” The gastric band patient shared wanting to find a provider who understands her struggle with suboptimal weight loss results.
The Roux-en-Y participants in this focus group, all of who had successfully lost and maintained their desired weight, were pleased with the care they received from the bariatric surgeon and bariatric program they ultimately chose for their weight loss surgeries, describing excellent customer service and feeling valued and cared for. They described doing their homework and research to find this surgeon and top-rated bariatric program that holds a “Gold Standard of Excellence.” The participants described having confidence in the program due to its’ experienced medical staff; some staff had the bariatric surgery themselves so the participants felt they could better relate to them. They discussed receiving great follow-up care from all the staff at that bariatric facility, including the surgeon, providers, nurses, and others, and felt the staff was truly concerned about their well-being. One described a complication that arose from his bariatric surgery around Thanksgiving during a blizzard; the surgeon called him at home and said “get in here and they’ll find me, whatever time you get here, we’ll do the surgery; that’s the kind of treatment I had” this participant said.

The Roux-en-Y participants believed it was important for anyone considering bariatric surgery to do their homework and research to find the right bariatric provider. They discussed some bariatric programs had their patients purchase and use specific commercial pre-packaged drinks/shakes and food pre- and post-surgery; this disgusted these participants, so they chose not to have their bariatric surgery at these places. These participants also felt those programs did not have a supportive environment, and that the patient was not the priority in the program, but that additional financial gains were. Roux-en-Y participants expressed that in the bariatric program they chose and participated in, that food and drink purchased from their regular grocery store was fine for their bariatric meal plan; one sharing that after the bypass she ate “baby food.” The
gastric band participant stated they were “pushing the band surgery 10 years ago; band patients came to talk to a group of 20 to 30 patients (including herself) and shared successes but no one mentioned anything negative.” She states, it “may still not have changed my decision, but at least would have the full spectrum of knowing to make an informed decision about the surgery.” She also stated she felt there was no support from her bariatric surgeon or her bariatric program after the weight loss surgery.

**Overarching Theme: Mixed Blessing**

*Mixed Blessing* emerged as the overarching theme after reviewing all five themes and participants’ narratives. Focus group participants described dealing with both positive and negative aspects post-bariatric surgery, being forthright in sharing their perceptions, experiences, and expectations, leading to the conclusion that bariatric surgery was a mixed blessing of varying degrees for all participants.

**DISCUSSION**

**Trustworthiness**

To establish rigor of findings, this clinical project investigator established trustworthiness and authenticity, by taking actions to ensure objectivity (confirmability), dependability (reliability), credibility (internal validity), and transferability (external validity) (Colarofi & Evans, 2016). Objectivity was addressed by describing in detail how the data was collected and analyzed, having project data retained for any future evaluation. Dependability (reliability) involved having a consistent procedure in place for the project including quality control (Colarofi & Evans, 2016; Miles & Saldana, 2014). Reliability in this project was addressed through the utilization of open-ended structured interview questions with probes, multiple audio
recordings of focus group discussion session with accurate transcription, and clear roles of focus group moderator (this clinical project investigator) and analysis consultant (Colarofi & Evans, 2016; Miles & Saldana, 2014). Credibility of this project was confirmed through detailed “context-rich” accounts of the post-surgical bariatric patient participants’ discussions in the focus group interview (Colarofi & Evans, 2016), and exploring linkages of findings with the Transtheoretical Model “Stages of Change” theoretical framework (PCBSI, 2016). Transferability was achieved in the project, by project participants’ characteristics, as described in the demographic questionnaire, achieved by presenting accurate findings with themes, and identifying manners in which the project findings could be evaluated or expanded upon further (Colarofi & Evans, 2016). Limitations of this project included: The sample size of this project was a total of five participants; in addition, four out of five participants were members of the same family. This has the potential to influence the trustworthiness of the findings.

**Literature Review: Compare and Contrast as Related to Project Themes**

In the *Synthesis of Evidence* section, literature that addressed positive predictors associated with positive effects/facilitators post-bariatric surgery, including improved weight loss outcomes and weight maintenance success, supported the findings of this project. Positive predictors associated with the theme *Support, Knowledge, and Guidance: The Missing Link?* included: attending support groups, eating a healthy diet (Rudolph and Hilbert, 2013), and following-up with health care providers (Conceicao et al., 2014). Positive predictors associated with the theme *Evolution of Self-Image* included: feeling secure within oneself and having confidence (Kruseman et al., 2010), quality of life improvement (Bond et al., 2009; Major et al., 2015; Reynolds et al., 2017), improved self-esteem (Wimmelmann & Mortensen, 2013), body
image satisfaction (Kruseman et al., 2010; Neff et al., 2014), and resolved obesity-related comorbidities (Golomb & Glass, 2015; Major et al., 2015, Puzziferri et al., 2014; Ricci et al., 2015; Shanktavasinkul et al., 2016). These positive predictors were all valid for the Roux-en-Y participants in project, who were all members of the same family, and who all who achieved optimal weight loss and weight maintenance results.

Literature that addressed negative predictors associated with barriers/challenges post-bariatric surgery including weight gain, weight regain, or suboptimal weight loss outcomes, had more varying results that conflicted with the findings of this bariatric project. In conflict were studies associated with the theme Confronting Physical and Emotional Realities, and Unexpected Challenges, discussing that sugar/fat/salty food can lead to suboptimal weight loss outcomes (da Silva, Gomes, & de Carvalho, 2016; Karmali et al., 2013), whereas the four Roux-en-Y participants include these types of foods within their current diet and yet have maintained their weight loss for an average of 11 years with minimal weight regain from their lowest body weight post-bariatric surgery. *This may lend itself to the conversation that there may be a balance with diet, and that all foods including healthy and unhealthy may be included in a diet plan to lose and maintain weight.*

With regards to a higher BMI leading to suboptimal weight loss outcomes (Still et al., 2014), while this was true of the gastric band participant that had a higher weight (higher baseline BMI) and did not lose any initial weight, but did not gain weight post-bariatric surgery, the Roux-en-Y participants also had higher weights (higher BMIs), but did lose their excess body weight and have maintained that weight for an average of 11 years. Also in conflict was a study associated with the theme Weight Loss Surgery as a Tool with Personal Responsibility with one
participant describing an impulse to shop that replaced his prior impulse to eat, although he has continued to maintain his weight loss effectively; this was in contrast to the literature that discussed this as a cause of suboptimal weight loss (Karmali et al., 2013). Also found in the literature review was that the female gender has a higher likelihood of having greater suboptimal outcomes than the male gender (Shanktavasinkul et al., 2016), although in this project, only the female gastric band patient had this result, while the Roux-en-Y female participants had optimal weight loss and weight maintenance results. In addition, the Wimmelmann and Mortenson (2013) study found that bariatric surgery weight loss effects begin to diminish “1 year postoperatively,” with other studies finding that the maintenance of excess body weight loss 4 to 8 years post-bariatric surgery is less than 50% (Kruseman et al., 2010; Reynolds, Byrne, and Hamdorf); this was not true of the Roux-en-Y participants who have maintained the majority of their excess body weight loss on average for 11 years.

There were two qualitative studies in the literature review. The LePage (2010) qualitative study focusing on post-surgical experiences of bariatric patients, had findings both supporting and conflicting to this project. Findings supporting this project’s theme of Evolution of Self-Image included: participants felt unprepared for the person they were developing into on the outside compared to the inside, taking them time to comprehend their transformation of self-image (LePage, 2010). Findings that conflicted was the overarching theme in LePage (2010) the paradox, where study participants believed all would be just wonderful after the Roux-en-Y surgery, whereas in this project, as discussed under the theme of Weight Loss Surgery as a Tool with Personal Responsibility, none of the focus group participants shared this viewpoint. Focus group participants in this project discussed knowing it would take work and accountability to
accomplish their weight loss goals, and there would be both good and challenging experiences associated with this.

The qualitative study by Jones, Cleator, and Yorke, (2016), focused on post-surgical bariatric patients who experienced weight regain after bariatric surgery and had passivity as the overarching theme, whereas study participants described not taking an active role in their weight loss journey to achieve weight loss success. This was in contrast to the beliefs of most of the focus group participants in this project, as described under the theme Weight Loss Surgery as a Tool with Personal Responsibility; the four Roux-en-Y participants took an active role to achieve weight loss and weight maintenance success, although the gastric band participant described that she had not taken an active role. In addition, as related to this theme, the gastric band patient in this project also supported some of the other findings in the Jones, Cleator, and Yorke (2016) study including: feeling alone and abandoned, and not knowing where to reach out for help. Another finding of the Jones et al. (2016) study that was in agreement with this project and associated with the theme Support, Knowledge, and Guidance: The Missing Link? was that all participants in this project also believed that managing or preventing weight regain could be helped by health care providers being supportive, and that peer-support is crucial to achieve weight loss goals.

Transtheoretical Model (TTM) “Stages of Change” and the Nursing “Theory of Self-Transcendence” (Emerged from Project Findings)

The Transtheoretical Model (TTM) “Stages of Change” was applicable in supporting the project findings (PCBSI, 2016). All participants began at one point in the TTM, progressing on a continuum forward and retrograde (backwards) through specific TTM “Stages of Change,”
dependent upon the participants’ readiness for change (PCBSI, 2016). This progression was evidenced by the themes that evolved from the focus group participants’ narratives, and the willingness of participants to share with the group their perspectives and experiences about their weight loss journey after bariatric surgery.

The TTM “Stages of Change” wasn’t exclusive to specific themes, but instead, encompassed multiple aspects of all themes that evolved in this project. To reflect upon which TTM “Stage of Change” a participant was at, at any given time, was due to a multitude of reasons including (PCBSI, 2016): family and peer support, knowledge deficit, and health care provider support and competency. These reasons are supported by the narratives focus group participants shared which are discussed throughout the Findings section of this project and themes that emerged. It was evident from the focus group discussion that participants were at different stages on the TTM. To recap, the TTM “Stages of Change” includes:

*Precontemplation, Contemplation, Preparation, Action, and Maintenance* (PCBSI, 2016). The four Roux-en-Y participants successfully maintaining their excess weight loss, have moved forward and retrograde between the *Action* and *Maintenance* stages for a number of years after their initial weight loss after bariatric surgery, more so staying in the *Maintenance* stage (PCBSI, 2016). This differs from the gastric band participant who seems to move forward and retrograde between the *Contemplation, Preparation*, and *Action* Stages (PCBSI, 2016).

Through participants’ narratives and resultant themes in the findings of this project, an additional theory framework emerged pertinent to the health-related experiences focus group participants described between themselves and health care (primary care) providers; this theory is the nursing *Theory of Self-Transcendence* by Dr. Pamela G. Reed (Reed, 2013). “The purpose
of the *Theory of Self-Transcendence* is to provide a framework for inquiry and practice regarding the promotion of well-being in the midst of difficult life situations” (Reed, 2013), which is vital for the development and building of a positive, trusting relationship between health care provider and patient. The *Theory of Self-Transcendence* is based upon three concepts that have an interconnected relationship: 1) *Self-Transcendence*, 2) *Well-Being*, and 3) *Vulnerability* (Reed, 2013).

The concept of *Self-Transcendence* “refers to the capacity to expand self-boundaries” which can include: gaining insight into oneself, building relationships and helping others, “sharing wisdom,” and learning how to recognize what is “meaningful in life” (Reed, 2013). The Roux-en-Y participants in this focus group, all of who had successfully lost and maintained their desired weight, described the importance they felt in helping others dealing with obesity; they felt inspired to share their bariatric surgery weight loss story with friends, family, and strangers, and in the peer-based support group they developed. All participants felt support was key to weight loss success and maintenance. Participants also gained insight into their eating habits and behaviors; the Roux-en-Y participants believed this improved their long-term successful weight loss results, and the gastric band participant believed this helped her begin to be accountable for losing weight. The concept of *Well-Being* is “linked with positive, health promoting experiences,” including: “life satisfaction, positive self-concept, hopefulness, happiness, and sense of meaning in life” (Reed, 2013). Roux-en-Y participants in this project described improved well-being and happiness after achieving their weight loss goals; having an improved quality of life. This included having resolution of pre-bariatric surgery comorbidities and improved personal relationships. The concept of *Vulnerability* “involves being confronted with
personal mortality or experiencing difficult life events, that can initiate developmental progress toward a renewed sense of identity and expanded self-boundaries” (Reed, 2013). Participants described feeling stigmatized and judged by others; having feelings of vulnerability due to their obesity. Roux-en-Y participants described these feelings as being resolved once they had achieved their goal weight and had become comfortable with their smaller physical size. The gastric band participant still seemed to experience vulnerability, but that appeared to be improving due to her recent weight loss. As evident by the findings of this project, there is an intermingled relationship between the TTM “Stages of Change” and nursing Theory of Self-Transcendence as related to the participants’ narratives.

Reed’s (2013) nursing Theory of Self-Transcendence framework would be applicable in guiding future, new, and current DNP primary care nurse practitioners and other health care providers in supporting, managing, and treating obese and post-bariatric surgery patients. This may be achieved by the DNP nurse practitioner facilitating patients’ expansion of self-boundaries inward and outward in ways that promote their well-being, even as their physical self-boundary undergoes reduction or ‘shrinks.’ In addition, DNP nurse practitioners should have a thorough understanding of the concepts of Reed’s (2013) nursing Theory of Self-Transcendence, to help develop a holistic, collaborative relationship with the patient, with the goals of improving health, wellness, and weight loss/maintenance outcomes. It may be beneficial to utilize this framework in conjunction with an obesity clinical practice guideline when the DNP nurse practitioner is developing an individual plan of care for these patients.

Taking into consideration the TTM “Stages of Change” (PCBSI, 2016), the nursing Theory of Self-Transcendence (Reed, 2013), this project, and other studies (past and future),
another framework/model may be able to be developed on obesity and the components that go into successful weight loss and weight maintenance. These components may be found to include: Peer and Provider Support, Accountability and Responsibility, and Self-Awareness.

**Implications for Advanced Practice**

A potential practice implication the patients’ narratives support is the need for health care providers to become further educated and cognizant about how obesity affects the health and life of patients, to be confident and proactive in addressing obesity-related health issues during office visits, including recognizing the “Stages of Change” (PCBSI, 2016). In addition, health care providers need to be responsible in establishing a relevant knowledge base to understand how to best support, manage, and treat obese or post-bariatric surgical patients who they choose to take on as patients, to best help these patients achieve their health, weight loss, and weight maintenance goals. If the health care provider is unwilling or unable to do this, the responsible option would be for the provider to refer the patient to another health care provider that is able and willing to address these important health issues.

Another potential practice implication the patients’ narratives support are providers needing education on post-bariatric surgery oral intake and vitamin supplementation, including:

- Taking daily vitamins to prevent deficiencies and to stay healthy is a must, especially B vitamins (B1-thiamine, B6, and B12). That all vitamins could be taken orally, although B12 could be taken oral or in shot form. The peer-based support group participants learned to give themselves the B12 shots during a how-to demonstration during one of their support group meetings.
- Never drinking anything with carbonation.
• Never drinking fluids at the same time as eating food, except being allowed to take sips of fluid if food is too dry to chew and swallow.

• Drinking only a small amount of alcohol can cause a sedation/sleep effect quickly.

• Only eating small amounts of food, eating protein first, eating slow, and chewing food extensively.

**Gaps in Literature and Future Research Needs**

There were multiple themes of information uncovered in this bariatric focus group discussion project showing a gap in current research and the need for future research on these topics. None of the literature review uncovered any study that had bariatric patients who were all family members; although not planned in this project, this was an unanticipated finding. Four out of the five project participants were members of the same family and all had weight loss and weight maintenance success with the Roux-en-Y bariatric surgery. These four participants experienced positive social and educational support, and achieved and maintained their desired weight loss goals. Considering participants’ narratives, weight loss and weight maintenance success after bariatric surgery, may lend itself to the idea that family/peer-support may be a significant factor in achieving these positive outcomes. Additionally, all participants averaged 11 years’ post-operative since having the bariatric surgery, was also not found in any qualitative bariatric patient study in the literature review search. Future studies on families, or friends and family who all had peer-support after bariatric surgery, may be beneficial to explore further information in assisting bariatric patients in achieving their post-surgery health and weight loss goals. Although there may be multiple confounding variables in this small project group, future studies may further explore the relationship between weight loss and weight maintenance success
rates and support. It may be beneficial to develop a qualitative study including post-surgical bariatric patients, all members of the same family, and do both a focus group and one-on-one interviews to compare and contrast, to see if there are any individual differences across family members that may play a factor in weight loss success and maintenance. In addition, a quantitative study of a larger (randomly selected) sample and questionnaire may be beneficial as well, that quantifies particular concepts of interest uncovered in this project.

Another research avenue to take would be to do a study similar to this project, but instead of a focus group discussion session with participants, one-on-one interviews would be utilized. Both qualitative studies included in the literature review for this DNP Project, utilized individual one-on-one interviews with participants, and not a focus group discussion as this bariatric project had done. This clinical project investigator chose to do this bariatric study as a focus group instead of one-on-one interviews, to gather individual answers to questions, while allowing for the natural unfolding of discussion between participants. This clinical project investigator believed having the focus group lent itself to a more elaborate and detailed conversation among the participants. Reflecting upon this, this clinical project investigator realizes that utilizing one-on-one interviews in a future study or follow up project with a similar group of participants, may allow for more intimate in-depth responses, expanding upon the questions and probes asked in this project, and potentially provide greater insight into life after bariatric surgery.

Another notable topic this project uncovered not found in the literature review was concerns and frustrations with health care provider authenticity, competency, and care. As the findings of this project described, all participants believed and experienced primary care provider bariatric post-surgical and obesity knowledge as lacking and varied, and that bariatric providers
and programs varied in their support and care. Upon reflection, this clinical project investigator contemplated health care providers’ awareness of this issue, and its importance in caring for obese or post-surgical bariatric patients. A need for future studies with primary care providers are necessary to evaluate their knowledge base on obesity and bariatrics, and how to improve any deficits. One way to begin this, may be to do a needs assessment survey with primary care providers related to a clinical practice guideline on obesity, and guide improvements in primary care based upon the results of this assessment. A need for future studies with bariatric providers and bariatric programs would be beneficial as well, with the hopes of finding ways to improve support and care post-bariatric surgery.

**CONCLUSION**

In conclusion, the findings of this project answered all of the study questions posed for this project including: post-surgical bariatric patients’ perceptions, expectations, and experiences after weight loss surgery, and facilitators and barriers/challenges to successful weight loss and weight maintenance. The literature review completed prior to this project included both study findings and results that supported the findings of this focus group bariatric project, and others that were found in conflict with this project. From this bariatric project, new ideas arose and brought to light gaps in the literature regarding post-surgical bariatric patients, and needs for future obesity and post-bariatric surgery studies. As discussed prior, a future framework/model may be able to be developed on obesity and the components that go into successful weight loss and weight maintenance that may include: Peer and Provider Support, Accountability and Responsibility, and Self-Awareness.
OTHER INFORMATION

Projected Budget

The projected budget for this DNP project is relatively minimal (Appendix C).
APPENDIX A:

DEMOGRAPHIC QUESTIONNAIRE
DEMOGRAPHIC QUESTIONNAIRE

This questionnaire will allow me to get to know you and find out some basic background information. This questionnaire will be kept confidential, and will only be seen by myself (the moderator of the focus group), and my assistants helping me with the project (transcriber and analysis consultant). By answering this questionnaire, you are giving me permission to use this information in my study. Your name is not attached to the questionnaire or to any part of the study. Thank you for completing it and participating in the focus group interview session today.

1. What is your gender? (please check one)
   Male:_________ Female:_________ Transgender:_________

2. What is your primary ethnicity/race:________________________________________

3. What is your age?_________

4. When was your bariatric surgery? (month/year-example: June 2013)_______________

5. What type of bariatric surgery(s) did you have (please check or write in all that apply)?
   - Gastric Sleeve:_____ Roux-en-Y Gastric Bypass:_____ Adjustable Gastric Band:_____
   - Vertical Banded Gastroplasty:_____ Other Bariatric Surgery (list):__________________

6. Check any of the following health issues you had prior to bariatric surgery, that resolved or improved after you had the weight lost surgery (write I if Improved, or R if Resolved)?
   - Type II Diabetes:_____ High Blood Pressure:_____ High Cholesterol:_____
   - High Triglycerides:_____ Acid Reflux/Heartburn:_____ COPD:_____ Asthma:_____
   - Sleep Apnea:_____ Depression:_____ Anxiety:_____

7. What type of health care provider do you follow-up with that manages your bariatric health (please check or write in all that apply)?
   - Bariatric Physician:_____ Bariatric Nurse Practitioner:_____ Bariatric Physician Assistant:_____
   - Family Physician:_____ Family Nurse Practitioner:_____ Family Physician Assistant:_____
   - Other (please describe):_______________________________ I do not follow-up:_____


APPENDIX B:

FOCUS GROUP SCRIPT AND QUESTIONS
FOCUS GROUP WELCOME SCRIPT AND GROUND RULES

Hello and welcome everyone! I would like to thank all of you for volunteering to attend this focus group today and filling out the demographic questionnaire. All of you attending today have had some type of bariatric surgery. We’re here doing this focus group because I’d like to get your thoughts and viewpoints about life after having bariatric surgery. My name is Alexis Hanson, and I will be leading the discussion today. This discussion will be recorded so that I can utilize it in documenting my research. Please be assured that your identity to participate in this discussion and focus group will be kept confidential. I ask that those participating in this group today keep this information confidential as well. This is an open discussion forum where I will be asking you questions. Please speak freely in the group, sharing your experiences, feelings, perceptions, and opinions. I very much appreciate your willingness to share with myself and the group as much as you can about your life after bariatric surgery.

Some ground rules for this group discussion: Please turn off your cell phones or have them on vibrate. Please be courteous to one another, allowing each other to speak without being interrupted. If something one person says reminds you of something you would like to share with the group, please feel free to elaborate. The focus group will last approximately 60 to 90-minutes. All participants here today will have the opportunity to answer all the questions asked, but please know you always have the option to not answer a question. I am really looking forward to learning more about your experiences and perceptions as a bariatric patient. I hope you enjoy being a part of this focus group today. Are there any questions? Then, let’s begin with the first question.
FOCUS GROUP QUESTIONS

1. Explain to me your expectations after having bariatric surgery?
   • Probes: Comorbidity improvement or resolution? Active or passive role in weight loss process? Improved self-image, self-esteem and relationships? What responsibility do you feel you had in this process?

2. Tell me about your life since having bariatric surgery?
   • Probes: Prepared emotionally, physically, or spiritually for changes in eating, lifestyle behavior and habits? Tell me about your weight loss journey. Diet and physical activity? Greatest impact or change (improvement or detriment)? Follow-up health care? Comorbidity improvement? Your typical day with eating and exercise? Family and career? Mood? Transtheoretical Model stage participant at?

3. Explain to me what you perceive has influenced your weight?
   • Probes: Tell me about what was most helpful? Most challenging; barriers to suboptimal weight loss or weight regain? Eating behaviors/triggers? Food portion size and food choices (high fat, high salt, high carbohydrate, fast food)? Successful weight loss and weight maintenance through improved diet and exercise? Lifestyle choices? Personal relationships? Support system (family, friends, peers, support group)? Smaller sized clothing? Self-esteem or self-image? Health status and comorbidities. Mental health. Social influences (media/restaurants) and acceptance. How do you get back on track with weight regain?

4. What advice would you give others who are considering having weight loss surgery?
• *Probes: Negative aspects and positive aspects. Do you perceive it as a successful weight loss intervention?*

5. Is there anything else you would like to share today?
APPENDIX C:

PROJECTED BUDGET
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<tr>
<th>Expense Items</th>
<th>Requested Amount</th>
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<td>Travel</td>
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<td>Operations</td>
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</tr>
<tr>
<td>Equipment (Audio-recorder software)</td>
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<tr>
<td>Materials and Supplies (Snacks, Paper)</td>
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</tr>
<tr>
<td>Printing/Marketing (Fliers)</td>
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<td>Consultant Fees</td>
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<td>Participant Payments</td>
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APPENDIX D:

PARTICIPANT RECRUITMENT SCRIPT AND PROJECT FLYER
RECRUITMENT SCRIPT FOR PROJECT PARTICIPATION IN BARIATRIC STUDY

I would like to announce (tell you about) a study you may be interested in participating in.

The purpose of the study is to understand post-surgical bariatric patients’ perceptions, expectations, and experiences after having weight loss surgery.

To be included in this study: you must have had some type of bariatric weight loss surgery, be at least 18-months post-operative from having your weight loss surgery, be an adult at least 18 years or older at the time you had your initial bariatric surgery, and be able to speak, write, and understand English.

This study is strictly voluntary to participate in. If you are interested in being a participant in this study, you will be signing a consent to participate, then filling out a short demographic questionnaire, and then interviewed as a part of a focus group and answering questions about life after having bariatric surgery. The session will be audio recorded and take place in the Fargo area. You will need to travel to the study location, and once there, it will take approximately 90-120 minutes of your time. The results of this study may be published, however, your name and other identifying information will be kept private. The information in this study may also be utilized in future research.

If you or someone you know, are interested in participating in this study, you can contact Alexis Hanson, her telephone number is 701-388-4547 and email address is alexishanson9@email.arizona.edu. Her information is on a flyer here today, please make sure to take one if interested.

(Note: If a potential participant is referred by a third party, that third party is welcome to share Alexis’ phone and email information with that potential participant; in this case, a flyer would not be necessary.)
If you are a bariatric patient that has had weight loss surgery you may be interested in participating in this study:

The purpose of the study is to understand post-surgical bariatric patients’ perceptions, expectations, and experiences after having weight loss surgery.

To be included in this study:

- You must have had some type of bariatric weight loss surgery.
- Be at least 18-months post-operative from having your weight loss surgery.
- Have been at least 18 years or older at the time you had your initial bariatric surgery.
- Be able to speak, write, and understand English.

This study is strictly voluntary to participate in. If you are interested in being a participant in this study, you will be signing a consent to participate, then filling out a short demographic questionnaire, and then interviewed as a part of a focus group and answering questions about life after having bariatric surgery.

The group interview session will be audio recorded and take place in the Fargo area. You will need to travel to the study location, and once there, it will take approximately 90-120 minutes of your time. The results of this study may be published, however, your name and other identifying information will be kept private. The information in this study may also be utilized in future research.

If you or someone you know, are interested in participating in this study, please contact Alexis Hanson; her telephone number is 701-388-4547 and email address is alexishanson9@email.arizona.edu.

Thank you for your consideration!
APPENDIX E:

STUDY CONSENT FORM
The University of Arizona Consent to Participate in Research

Study Title: Post-Surgical Bariatric Patients’ Perceptions, Expectations, and Experiences After Weight Loss Surgery.

Principal Investigator: Alexis J. Hanson, MSNA, BSN, RN (DNP/FNP Graduate Student)

This is a consent form for research participation. It contains important information about this study and what to expect if you decide to participate. Please consider the information carefully. Feel free to discuss the study with your friends and family and to ask questions before making your decision whether or not to participate.

Why is this study being done?
The purpose of this study is to understand post-surgical bariatric patients’ perceptions, expectations, and experiences after having weight loss surgery. Participants will be taking part in an audio-recorded focus group interview session, and asked questions to discuss.

What will happen if I take part in this study?
Participation in the study is voluntary. If you choose to participate, you will be filling out a demographic questionnaire and then interviewed as a group, answering questions about life after having bariatric surgery. This session will be audio recorded, transcribed, and published as a DNP Project at the University of Arizona.

How long will I be in the study?
Approximately 90-120 minutes.

How many people will take part in this study?
Up to 6 people who have had bariatric weight loss surgery.

Will I be paid for taking part in this study?
Participants will each be given a $20 gift card for participation upon arrival to setting, prior to the beginning the focus group discussion, to alleviate any pressure of participation.

By law, payments to subjects may be considered taxable income.
Can I stop being in the study?
You may refuse to participate in this study. If you decide to participate in the study, you may leave the study at any time. No matter what decision you make, there will be no penalty to you and you will not lose the $20 gift card given to you prior to the interview process. Your decision will not affect your future relationship with The University of Arizona or the Principle Investigator.

What risks or benefits can I expect from being in the study?
In this study, risk will be minimal. If a participant experiences emotional distress, information will be available prior to, during, and after the focus group on facilities that provide mental health counseling in the Fargo, North Dakota area. The cost of the counseling would be the participants’ responsibility.

Will my study-related information be kept confidential?
Your identity to participate in this focus group interview discussion will be kept confidential by the Principle Investigator (PI); you will be identified by a number in the transcription. The results of this study may be published, however, your name and other identifying information will be kept private. In addition, information in this study may be utilized in future research. Your identity will be kept confidential during this focus group interview session today because you have been assigned a number to utilize in place of your real name. I ask that you please utilize this number as your name, and not share your real name with anyone during this focus group interview session today.

Efforts will be made to keep your study-related information confidential. However, there may be circumstances where this information must be released.

Also, your records may be reviewed by the following groups:
• The University of Arizona Institutional Review Board
• Office for Human Research Protections or other federal, state, or international regulatory agencies
• DNP Committee Members: Dr. Patricia Daly, Dr. Kate Sheppard, and Dr. Pamela Reed

Who can answer my questions about the study?
For questions, concerns, or complaints about the study you may contact Alexis Hanson at 701-388-4547 or alexishanson9@email.arizona.edu.

For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact
the Human Subjects Protection Program at 520-626-6721 or online at http://rgw.arizona.edu/compliance/human-subjects-protection-program.

If you are injured as a result of participating in this study or for questions about a study-related injury, you may contact Alexis Hanson at 701-388-4547 or alexishanson9@email.arizona.edu

An Institutional Review Board responsible for human subjects research at The University of Arizona reviewed this research project and found it to be acceptable, according to applicable state and federal regulations and University policies designed to protect the rights and welfare of participants in research.

**Signing the consent form**

I have read this consent form, and I am aware that I am being asked to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I voluntarily agree to participate in this study.

I am not giving up any legal rights by signing this form. I will be given a copy of this form.

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<th>Printed name of subject</th>
<th>Signature of subject</th>
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APPENDIX F:

SITE PERMISSION LETTER OF SUPPORT
November 1, 2017

To Whom It May Concern:
Alexis Hanson has permission to utilize a conference room at North Dakota State University Nursing Offices, located at 1919 N. University Drive, SGC Building, Fargo, ND 58108, for her University of Arizona DNP Project.
If you have any questions, please feel free to contact me. Thank you.
Best Regards,

Carla Gross, PhD, MSN, RN
Associate Dean
School of Nursing
College of Health Professions
Dept 2670, PO Box 6050 / Fargo ND 58108-6050
p: 701.231.7772 / f: 701.231.6257
www.ndsu.edu
APPENDIX G:

MENTAL HEALTH AND COUNSELING FACILITIES
Facilities that offer Mental Health Counseling in the Fargo, ND area

Prairie St. John’s  
510 4th St. S., Fargo, ND 58103  
Phone: 877-333-9565

The Village Family Service Center  
1201 25th St. S., Fargo, ND 58106  
Phone: 701-451-4900

Essentia Health Behavioral Health  
1702 South University Dr., Fargo, ND 58103  
Phone: 701-364-8900

Sanford Health Behavioral Health  
1720 South University Dr., Fargo, ND 58103  
Phone: 701-461-5350
APPENDIX H:

LITERATURE REVIEW
## Literature Review

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<th>Reference</th>
<th>Research Question/Hypothesis</th>
<th>Study Design</th>
<th>Sample and Setting</th>
<th>Methods for Data Collection and Data Analysis</th>
<th>Findings</th>
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<tr>
<td>Karmali, S., Brar, B., Shi, X., Shrma, A. M., de Gara, C., &amp; Birch, D. W. (2013). Weight recidivism post-bariatric surgery: A systematic review. <em>Obesity Surgery</em>, 23, 1922-1933. doi:10.1007/s11695-013-1070-4</td>
<td>“Systematically review the existing literature to assess the incidence and causative factors associated with weight regain following bariatric surgery.”</td>
<td>Systematic Review</td>
<td>Sample: 16 studies chosen; “most discussed associated punitive causes and risk factors” for postsurgical weight regain after bariatric surgeries including: Roux-en-Y, adjustable gastric band, and vertical banded gastroplasty.</td>
<td>Data Collection: “An electronic literature search of PubMed US, Medline, Cochrane, Embase, and Google were completed (years 1950-2012), “1437 abstracts identified.” Data Analysis: 16 studies were analyzed including: “seven retrospective, five surveys, and four non-randomized control trials,” Participants in studies “ranged from 26 – 1,845, with follow-up from 12 months to 11.4 years post-surgery.”</td>
<td>Five main themes with sub-themes were identified as causes of weight regain: 1 - Dietary non-compliance (over time increasing calorie and food consumption, poor diet quality increasing amounts of fat/sugar/salt laden foods, and grazing behaviors). 2 – “Hormonal or metabolic imbalances” (increased plasma ghrelin levels, and abnormal levels with hypoglycemia. 3 – Mental health disorders (eating disorders, binge eating, impulsive behaviors, depression, alcohol/drug use, food urges, and combination of more than one mental health disorder). 4 – Physical activity (being less active or inactive). 5 – Surgical complications (dilation of gastric stoma or pouch). “Fewer follow-up visits also weight regain predictor.”</td>
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<td>Puzziferri, N., Roshek, T. B., Mayo, H. G. Gallagher, R., Belle, S. H., &amp; Livingston, E. H. (2014). Long-term follow-up after bariatric surgery: A systematic review. <em>Journal of the American Medical Association</em>, 312(9), 934-942. doi:10.1001/jama2014.10706</td>
<td>Systematic review performed to evaluate relationships between bariatric surgery and “outcomes of weight loss,” and comorbidities including: type 2 diabetes, hypertension, and hyperlipidemia, 2 years post-surgery. Bariatric patients comorbidities pre-bariatric surgery, can go into remission post-bariatric surgery, improving long-term health outcomes.</td>
<td>Systematic Review</td>
<td><strong>Sample:</strong> “29 studies met inclusion criteria:” Minimum 2 year study duration, patient follow-up 80%, minimum of 50 adult study participants, BMI ≥ 35, and English language. Included: Roux-en-Y, sleeve gastrectomy, and adjustable gastric band adult surgical patients.</td>
<td><strong>Data Collection:</strong> An electronic literature search of Ovid Medline, Cochrane, Clinical Trials.gov were completed (years 1946-2014); “7391 studies reviewed.” Study protocol developed (PRISMA criteria – not registered), 2-3 investigators reviewing studies.</td>
<td><strong>Findings:</strong> Type II diabetes: remission in “66.7% Roux-en-Y and 28.6% adjustable gastric band.” Hypertension (“&lt; 140/90 mmHg without medication”): remission in “38.2% Roux-en-Y and 17.4% adjustable gastric band. Hyperlipidemia (“cholesterol &lt; 200 mg/dL, high-density lipoprotein &gt;40 mg/dL, low-density lipoprotein &lt; 160 mg/dL, and triglycerides &lt; 200 mg/dL”): remission in “60.4% Roux-en-Y and 22.7% adjustable gastric band.”</td>
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<td>Wimmelmann, C. L., Dela, F., &amp; Mortensen, E. L. (2013). Psychological predictors of weight loss after bariatric surgery: A review of the recent research. <em>Obesity Research &amp; Clinical Practice, 8, e299-e313.</em> doi:10.1016/j.orcp.2013.09.003</td>
<td>Systematic review performed to review “psychological predictors” of weight loss post-bariatric surgery. Certain predictors pre and post bariatric surgery may influence weight loss outcomes. “Greater weight loss occurs in Roux-en-Y patients.”</td>
<td>Systematic Review</td>
<td>Sample: “19 studies met inclusion criteria:” Prospective studies with &gt; 30 participants, adults only, and patient follow-up of at least 1 year. Included: Roux-en-Y and adjustable gastric band surgical patients.</td>
<td>Data Collection: An electronic literature search of PubMed, PsycInfo, and Web of Science were completed (years 2003-2012). Data Analysis: 19 studies were analyzed.</td>
<td>Four categories were identified as “predictors” of weight loss post-bariatric surgery 1 - Cognitive: “Up to 23%” of pre-surgical bariatric patient have cognitive deficits including deficits of “executive function, memory, and attention,” that may affect compliance to necessary lifestyle changes post-operatively, leading to suboptimal weight loss. Cognitive deficits have shown to improve in as little as 3 months after surgery in some patients. 2- Personality: Neuroticism (negative emotions) associated with “increased body mass, inappropriate eating behavior, and weight gain;” impulsiveness “main predictor of emotionally and externally triggered eating behaviors associated with obesity and weight gain.” Narcissism “negative affect on weight loss” and complying with post-surgical rules. 3 - Psychiatric: “Severe or chronic” mental health condition(s), and “adverse childhood experiences” can have</td>
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negative effects on bariatric surgery; patients unable to adjust to behavioral changes post-surgery. Depression due to obesity ("low self-esteem and poor body image") has positive effect on bariatric surgery.

4 - Eating Behavior: Up to 80% of bariatric patients have binge eating disorder (BED), may continue after bariatric surgery despite restrictive anatomy changes limiting food intake, and BED stress can affect metabolism; risk for suboptimal weight loss. "Bariatric surgery has positive effect on hunger, disinhibition, restrictive eating, and binge eating in short-term studies, but these improvements may decline when the initial surgical effect decreases."

Combination of variables can affect weight loss 1 year post-bariatric surgery: "physical/medical health, psychological health, interprofessional support, and eating disorders."

Positive weight loss variables "predicting weight loss 1-3 year postoperatively" include: increased self-esteem and social life, coping skills, and the presence of emotional and
informational support.”

Bariatric surgical effect on weight loss starts to diminish “1 year postoperatively”
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<td>Rudolph, A., &amp; Hilbert, A. (2013). Post-operative behavioural management in bariatric surgery: A systematic review and meta-analysis of randomized control trials. <em>Obesity Reviews</em>, 14, 292-302. doi:10.1111/obr.12013</td>
<td>Systematic review and meta-analysis were performed to “determine the effects of post-operative behavioural management on weight loss following bariatric surgery.”</td>
<td>Systematic Review and Meta-Analysis</td>
<td><strong>Sample:</strong> 15 studies met inclusion criteria: Adult bariatric postsurgical patients, 18 years or older, and post-operative lifestyle behavioral changes and management (LBCM) including excess body weight loss due to LBCM. English or German language. Included: Roux-en-Y, adjustable gastric band, vertical banded gastroplasty, and laparoscopic gastric plication (LGP) surgical patients.</td>
<td><strong>Data Collection:</strong> An electronic literature search of MEDLINE and PsychINFO were completed (years September 2012 and prior); 414 studies reviewed. Research group examined information utilizing PRISMA flow diagram selecting studies, finding “16 articles and 15 studies meeting inclusion criteria” and then combining focusing on articles for sample. <strong>Data Analysis:</strong> 15 studies were analyzed including: “5 randomized control trials, 2 prospective and 8 retrospective cohort trials analyzing behavioural lifestyle interventions and support groups.”</td>
<td>Patients participating in behavioral management and lifestyle interventions (e.g., support groups, diet, exercise, and counseling) post-bariatric surgery led to “greater weight loss,” outcomes. “Post-operative behavioural management may facilitate long-term weight control.” “Poor weight loss outcomes and weight regain over time” is experienced by a “substantial number of patients.”</td>
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<td>Ricci, C., Gaeta, M., Rausa, E., Asti, E., Bandera, F, &amp; Bonavina, L. 2015.</td>
<td>Long-term effects of bariatric surgery on type II diabetes, hypertension, and hyperlipidemia: A meta-analysis and meta-regression study with 5-year follow-up.</td>
<td>Meta-analysis and dose-response meta-regression were performed “to evaluate weight loss and the risk of type II diabetes, hypertension, and hyperlipidemia.”</td>
<td>Sample: 22 studies met inclusion criteria: English language, prospective interventional or randomized controlled trials, outcomes 24 months post-bariatric surgery (“including: cardiovascular, BMI reduction, diabetes, hypertension, and hyperlipidemia”). Included: Roux-en-Y, sleeve gastrectomy, adjustable gastric band, and vertical banded gastroplasty.</td>
<td>Data Collection: An electronic literature search of MEDLINE, EMBASE, and CINAHL were completed (years January 2004 – January 2012); 865 studies matched search criteria; all excluded except 22 matching inclusion criteria.</td>
<td>BMI reduction (weight loss) greater in Roux-en-Y than adjustable gastric band. “Type II diabetes, hypertension, and hyperlipidemia all decreased” post-bariatric surgery, but results may level off or change over time, dependent upon BMI.</td>
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<td>Cooper, T. C., Simmons, E. B., Webb, K., Burns, J. L., &amp; Kushner, R. F. (2015). Trends in weight regain following Roux-en-Y gastric bypass (RYGB) bariatric surgery. <em>Obesity Surgery</em>, 25, 1474-1481. doi: 10.1007/s11695-014-1560.z</td>
<td>Assess occurrence of post-surgical bariatric patients weight loss and weight regain.</td>
<td>Prospective</td>
<td><strong>Sample:</strong> Adult Roux-en-Y post-surgical bariatric patients, surgery dates January 1999- June 2009, 704 patients (300 survey respondents), 80.3% female and 19.7% male, mean age 45.6, minimal post-operative follow-up 2 years.</td>
<td><strong>Data Collection:</strong> Individual self-reported patient surveys completed on “preoperative weight, current weight, and subsequent weights over postoperative years.” <strong>Data Analysis:</strong> Categorical analysis and general linear model analysis. 295 surveys analyzed. Weights confirmed with medical records. “Mean preoperative weight and BMI: 140.8 kg and 49.7 respectively, mean years since surgery 6.9.”</td>
<td>“Despite percentage of weight lost” after year one, all patients regained on average between 21-29% excess body weight.” 109 patients regained excessive amounts of weight ≥ 25% excess body weight loss “from postoperative year one.” Greater initial excess body weight loss after bariatric surgery “leads to more successful long-term weight loss outcomes.”</td>
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<td>Shantavasinkul, P. C., Omotosho, P., Corsino, L., Portenier, D., and Torquati, A. (2016). Predictors of weight regain in patients who underwent Roux-en-Y gastric bypass. Surgery for obesity and related diseases, 12(9), 1640-1645.</td>
<td>“Investigate prevalence of weight regain” after Roux-en-Y surgery, and preoperative predictors of this suboptimal result.</td>
<td>Retrospective</td>
<td><strong>Sample:</strong> 1426 adult Roux-en-Y post-surgical bariatric patients, surgery dates January 2000-January 2012, 84.2% female and 15.8% male, mean age 45.1, minimal postoperative follow-up 2 years, patients that lost a minimum of 50% of excess body weight one year post-operatively. <strong>Setting:</strong> Duke University Center for Metabolic and Weight Loss Surgery</td>
<td><strong>Data Collection:</strong> DUCMWLS database query completed. Obtained data included: “age, gender, ethnicity, weight, height, and preoperative co-morbid diseases (hypertension, dyslipidemia, sleep apnea, and coronary artery disease).” <strong>Data Analysis:</strong> IBM SPSS statistics. Unpaired t test and x2 test were used for group comparisons; logistic regression analysis utilized to identify predictors. “Mean preoperative weight and BMI: 132.9 kg and 47.7 respectively, and mean follow-up 3.8 years.” “Patients categorized into 2 groups based on one year postoperative weight: weight regained (if regained ≥ 15% excess body weight loss) or sustained weight loss.”</td>
<td>244 patients experienced weight regain. Predictors of higher incidence of weight regain included: “female, significantly younger age, had fewer comorbidities, less likely to have type II diabetes with insulin preoperatively.” Predictors of higher incidence of sustained weight loss included: “male, older age, and having hypertension, dyslipidemia, and insulin-treated type II diabetes.” Excess body weight loss from 1 month – 4 years postoperatively was “significantly less in weight regained group compared to the sustained weight loss group.”</td>
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<td>Bond, D. S., Phelen, S., Wolfe, L. G., Evans, R. K., Meador, J. G., Kellum, J. M., ... Wing, R. R. (2009). Becoming physically active after bariatric surgery is associated with improved weight-loss and health-related quality of life. Obesity Journal, 17(1), 78-83. doi:10.1038/oby.2008.501</td>
<td>“Determine whether pre-to postoperative increases in physical activity (PA) are associated with weight loss and health-related quality of life (HRQoL) following bariatric surgery.”</td>
<td>Prospective, Cross-sectional</td>
<td><strong>Sample:</strong> 199 adult Roux-en-Y post-surgical bariatric patients, surgery dates January 2004-March 2007, 83% female and 17% male, mean age 43.8, mean preoperative BMI 49.8, with “1 year follow-up and preoperative and postoperative PA assessments.”</td>
<td><strong>Data Collection:</strong> IPAC and SF-36 questionnaires were completed by patients prior to bariatric surgery and at approximately 1 year after surgery completion. <strong>Data Analysis:</strong> IBM SPSS statistics. Analysis of covariance conducted to examine the effects of the PA group on weight and HRQoL changes.</td>
<td>The inactive/active group and active/active group had greater reductions in weight and greater improvements of their HRQoL in the areas of “health, vitality, and mental health,” than the inactive/inactive group. PA can improve weight loss results and HRQoL post- bariatric surgery.</td>
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<td><strong>Setting:</strong> Virginia Commonwealth University’s Surgical Weight Loss Center</td>
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The inactive/active group and active/active group had greater reductions in weight and greater improvements of their HRQoL in the areas of “health, vitality, and mental health,” than the inactive/inactive group. PA can improve weight loss results and HRQoL post- bariatric surgery.
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<td>Conceicao, E., Mitchell, J. E., Vaz, A. R., Bastos, A. P., Ramalho, S., Silva, C., . . . Machado, P. P. P. (2014). The presence of maladaptive eating behaviors after bariatric surgery I a cross sectional study: Importance of picking or nibbling on weight regain. <em>Eating Behaviors, 15</em>, 558-562. doi:10.1016/j.eatbeh.2014.08.010</td>
<td>How the effect of binge eating (subjective and objective) and picking and nibbling on food preoperatively and postoperatively, affects weight loss outcomes. Weight regain after bariatric surgery is probable if negative eating behaviors not addressed.</td>
<td>Cross-sectional</td>
<td>Sample: 61 pre-bariatric adult surgical patients, and three adult post-surgical bariatric patient groups including: Group 1: 27 adjustable gastric band and 63 Roux-en-Y, Group 2: 34 adjustable gastric band and 62 Roux-en-Y, and Group 3: 62 adjustable gastric band and 55 Roux-en-Y. 88.2% women and 11.8% men; mean age 43.3. Setting: Public hospital.</td>
<td>Data Collection: Pre-bariatric surgical patients “assessed day prior to bariatric surgery,” post-surgical bariatric patients Group 1 “assessed during 6-month follow-up medical appointment,” post-surgical bariatric patients Group 2 “assessed during 1-year follow-up medical appointment,” and post-surgical bariatric patients Group 3 “assessed during 2nd year follow-up medical appointment.” Assessed patients’: BMI, pre-surgery and lowest post-surgery weight, % excess body weight loss, % of excess body weight regained, weight regain in kg, psychological assessment completed via face-to-face interview utilizing bariatric Eating Disorder Examination (EDE-BSV) modified looking for objective and subjective bulimic episodes (OBEs or SBEs), picking and nibbling on food, dumping, plugging, or dumping, plugging, or dumping, plugging, or dumping.</td>
<td>Subjective binge eating episodes present in all patients. Objective binge eating not reported in any patients 6 months post-bariatric surgery. “Picking and nibbling was most frequent eating behavior reported and significantly associated with weight gain.” Lowest BMI in adjustable gastric band and Roux-en-Y Group 3 patients (2 years postoperative), greatest weight loss in Group 3 Roux-en-Y patients, significant excess body weight loss (&gt; 50%) achieved by approximately 38% of adjustable gastric band and 82% Roux-en-Y patients (Groups 1, 2, and 3), excess body weight loss “significantly associated with follow-up time, BMI pre-surgery, and type of surgery.” Significant excess body</td>
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vomiting.” Questionnaires utilized included: Eating Disorders Examination Questionnaire (EDE-Q), Outcome Questionnaire-45.2 (OQ45.2), Beck Depression Inventory (BDI), Obesity Disordered Eating Questionnaire (ODE), Barratt Impulsiveness Cale (BIS-11), and Body Shape Questionnaire (BSQ).

**Data Analysis:** Utilized PASW 22 for Windows. Dichotomous variables, odds ratio, relative risk, ANOVA, and GLM were all utilized in data analysis in various areas of study.

weight regained (> 15%) associated with picking and nibbling food, pre-surgery BMI, and follow-up times” (more adjustable gastric band than Roux-en-Y patients affected).
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<td>Still, C. D., Wood, G. C., Chu, X., Manney, C., Strodel, W., Petrick, A., . . . Gerhard, G. S. (2014). Clinical factors associated with weight loss outcomes after Roux-en-Y gastric bypass surgery. <em>Obesity Journal</em>, 22(3), 888-894. doi:10.1002/oby.20529</td>
<td>“Determine whether any commonly collected preoperative clinical variables were associated with weight loss following Roux-en-Y surgery.”</td>
<td>Prospective</td>
<td><strong>Sample:</strong> 2365 adult Roux-en-Y bariatric patients, initial BMI &gt; 35 pre-surgery (mean BMI was 49.6 with BMI patient range 35-94.3), participated in “preoperative program lasting 6-12 months” including a weight loss diet to lose 10% of their body weight prior to surgery, and had post-operative “follow-up visits at approximately 1 week, 2 weeks, 2 months, 5 months, 8 months, and 12 months, and then every 6-12 months thereafter,” surgery dates January 2004-August 2011, mean age 46, 81% female, 19% male, post-surgical bariatric patients’ weights measured at least 4 times (average was 21 times, range 4-203 times).</td>
<td><strong>Data Collection:</strong> “Several clinical sources used to obtain data” including: electronic health record (EHR), Clinical Decision Intelligence System, self-administered surveys, and other clinic resources. <strong>Data Analysis:</strong> Utilized “descriptive analysis for population,” quantile regression for excess body weight loss and “over 350 clinical variables” individually.</td>
<td>6 months post Roux-en-Y surgery 97% (2365 post-surgical bariatric patients) had their weight measured ≥ 4 times, between 6-36 months 56% (1369 post-surgical bariatric patients) had measured ≥ 3 times, and “857 of 1361 post-surgical bariatric patients (60%) after 36 months had measured ≥ 1 time. Preoperative variables leading to poorer weight loss ≥ 6 months post-operatively included: “higher baseline BMI, higher preoperative weight loss, iron deficiency, using diabetes medication, non-user of bupropion, non-smoker, age &gt; 50, and liver fibrosis.”</td>
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<td>Kruseman, M., Leimgruber, A., Zumbach, F., &amp; Golay, A. (2010). Dietary, weight, and psychological changes among patients with obesity, 8 years after gastric bypass. <em>Journal of the American Dietetic Association, 110</em>, 527-534. doi:10.1016/j.jada.2009.12.028</td>
<td>Determining if “dietary, anthropometric changes, eating behaviors, psychological state, and quality of life” &gt; 5 years post-bariatric Roux-en-Y surgery, influences successful or suboptimal weight loss.</td>
<td>Prospective</td>
<td><strong>Sample:</strong> 80 adult female Roux-en-Y bariatric patients, surgery dates January 1997-March 2002, mean age 40, and followed for a minimum of 5 years (mean 8 years) post-bariatric surgery, “visits with dietician and surgeon at least 4 times during first year post-operatively,” and 1-2 times per year after that up to at least 5 years. <strong>Setting:</strong> University Hospitals of Geneva, Switzerland, Service of Therapeutic Education for Chronic Diseases</td>
<td><strong>Data Collection:</strong> Patient weight, body composition, and waist/hip measurements taken; physical activity level estimated via pedometer, patients completed food diaries and questionnaires: Eating Disorder Inventory II (EDI-II), Hospital Anxiety and Depression Scale (HAD), and Nottingham Health Profile (quality of life assessment tool). Patient’s participation in semi-structured interviews addressed “difficulties and benefits to bariatric operation and perceived quality of follow-up.” <strong>Data Analysis</strong> IBM SPSS statistics. “Descriptive data present as mean±standard deviation for continuous data and frequencies for categorical variables,” patients separated into 2 group of having successful (≥ 50 excess body weight loss) or unsuccessful weight loss, comparisons and variables utilized paired t test, also “dichotomous variables with Pearson chi-square.”</td>
<td>Average weight loss 30.7 kg (67.5 lbs.) 8 years post-bariatric surgery. Factors associated with ≥ 50% excess body weight loss in 47 patients: “younger age at surgery, greater number of psychological consultations prior to surgery,” and not feeling ineffective or insecure prior to surgery. Comparing pre-surgery to post-surgery: decrease in mean calorie intake from 2355 kcal to 1442-1680 kcal, no changes in anxiety and depression, and improved body satisfaction. 41 post-surgical patients had binge eating.</td>
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<td>Thonney, B., Pataky, Z., Badel, S., Bobbioni-Harsch, E., &amp; Golay, A. (2010). The relationship between weight loss and psychosocial functioning among bariatric surgery patients. <em>The American Journal of Surgery, 199</em>, 183-188. di:10.1016/j.amjsurg.2008.12.028</td>
<td>“Assessing the relationship between both mental health and eating disorders and weight loss in morbidly obese patients 2 years after gastric bypass.”</td>
<td>Prospective</td>
<td><strong>Sample:</strong> 43 adult female Roux-en-Y bariatric patients, recruited between 1998-2003, mean age 39.2, mean BMI 44.7&lt;br&gt;&lt;br&gt;<strong>Setting:</strong> University Hospitals of Geneva, Switzerland, Service of Therapeutic Education for Chronic Diseases</td>
<td><strong>Data Collection:</strong> Patient data from questionnaire’s collected pre-surgery, and 1 and 2 years post Roux-en-Y surgery.&lt;br&gt;<strong>Patient questionnaires:</strong> Beck Depression Inventory II (BDI-II), HAD, and EDI II.&lt;br&gt;&lt;br&gt;<strong>Data Analysis:</strong> IBM SPSS statistics. Results: mean ± SE, “1-sample t tests and 1-tailed index,” and multiple regression analysis.</td>
<td>BDI II, HAD, and EDI II scores had decreased at both year 1 post-surgery, and year 2 post-surgery, from the initial pre-surgery baseline scores. Excess body weight loss year 1 post-surgery decreased from pre-surgical weight, although at post-operative year 2, only 61% of participants had excess body weight loss while 39% had weight gain.</td>
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<td>da Silva, F. B. L., Gomes, D. L., &amp; de Carvalho, K. M. B. (2016). Poor diet quality and postoperative time are independent risk factors for weight regain after Roux-en-Y gastric bypass. <em>Nutrition, 32</em>, 1250-1253. doi: 10.1016/j.nut.2016.01.018</td>
<td>Investigating causes of Roux-en-Y weight regain after a minimum of 24 months post-surgery; if poor diet and lifestyle habits can influence long-term weight maintenance.</td>
<td>Retrospective</td>
<td><strong>Sample:</strong> 80 adult Roux-en-Y post-surgical bariatric patients, years 2011-2012 sample, 88.8% female, mean age 46, minimum 24 months post-surgery (mean 47 months), mean pre-operative BMI 49.8.  <strong>Setting:</strong> Multidisciplinary Bariatric Surgery Program (meeting NIH surgery criteria)</td>
<td><strong>Data Collection:</strong> Medical records: Current and preoperative weight, weight history including preoperative weight loss, and amount of follow-up visits for nutritional counseling or psychology group meetings. 2-day food diary translated into Healthy Eating Index (HEI).  Questionnaire’s: International Physical Activity, Three Factor Eating (TFEQ-R21)  <strong>Data Analysis:</strong> Multivariate linear regression model and bivariate analysis; “dependent variable weight regain, all other variables independent; Mann-Whitney test and chi-square.</td>
<td>Mean BMI at least 24 months postsurgery 33.6. 19 participants had a mean weight regain of 20.1%, whereas 61 had stabilized their weight (minimum regain of approximately &lt; 2-10%). Food intolerances affected 66.3% of total participants. Participants with “weight regain had greater incidence of vomiting.” All participants (weight gain and weight stabilized): 8.8% had a quality diet and 32% did regular physical activity.</td>
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<td>Reynolds, C. L., Byrne, S. M., &amp; Hamdorf, J. M. (2017). Treatment success: Investigating clinically significant change in quality of life following bariatric surgery. <em>Obesity Surgery, 27</em>, 1842-1848. doi: 10.1007/s11695-017-2568-y</td>
<td>Exploring improvement of quality of life (QOL) post-bariatric surgery.</td>
<td>Prospective</td>
<td><strong>Sample:</strong> 57 adult Roux-en-Y and 10 sleeve gastrectomy bariatric patients (total 67 participants), 76% female and 24% male, mean age 48.13, 4-5 years post-surgery, mean pre-operative BMI 41.11, initial assessment pre-operatively between March 2008-August 2010.</td>
<td><strong>Data Collection:</strong> Web-based survey that included the Impact of Weight on Quality of Life (IWQOL-Lite) questionnaire, past medical record used to verify height and weight preoperatively, at clinic visits, and via self-reporting. <strong>Data Analysis:</strong> IBM SPSS statistics. “Several analyses were conducted to examine the association between weight loss and clinically significant change in QOL” including: the Crosby, Kolotkin, and Williams method, and Jacobson and Truax method; also utilized linear regression models, Little’s MCAR, and expectation maximization method.</td>
<td>Mean excess body weight loss 46% with significant improvement in IWQOL scores 4-5 years post-operatively. Those with the most improvement in IWQOL scores (43 participants) had excess body weight loss of 53.93%, whereas, those who had no change or a decrease in IWQOL scores (24 participants) had excess body weight loss of 31.68%.</td>
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| Major, P., Matlok, M., Pedziwiatr, M., Migaczewski, M., Budsynski, P., Stanek, M., ... Budzynski, A. (2015). Quality of life after bariatric surgery. *Obesity Surgery*, 25, 1703-1710. doi:10.1007/s11695-015-1601-2 | Assessment of QOL post-bariatric surgery including obesity-related comorbidities.             | Prospective    | **Sample:** 34 adult sleeve gastrectomy and 31 Roux-en-Y bariatric patients (total 65 patients), 39 female (mean age 44.4) and 26 male (mean age 41.1). Pre-surgery mean body weight 146.2 kg, mean BMI 50.44, 89% with diagnosed hypertension and 52% type II diabetes, 22% combination type II diabetes and metabolic syndrome, 67% lipid disorders, and 17% with obstructive sleep apnea.  
**Setting:** 2nd Department of Surgery, UJCM, Jagiellonian University, Poland | **Data Collection:** QOL questionnaire: Moorhead-Ardelt Quality of Life Questionnaire II utilized to assess QOL (includes: “general self-esteem, physical activity, social contacts, work, sexual activity, eating behavior, and global quality of life”). This was completed both pre-surgery and 12-months post-surgery.  
**Data Analysis:** Conducted utilizing Statistica 10 PL package. Analysis looked at significance and comparisons. | All patients lost significant amounts of weight and decreased their BMIs  
Mean post-operative BMI was 33.4, and mean excess body weight loss was 58.8%.  
Hypertension resolved in 72.4%, and type II diabetes resolved in 76.5% of patients; others has significant decrease in medication dosages and improved comorbidity status.  
QOL questionnaire scores improved for all patients. |
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<td>Golomb, I., David, M. B., &amp; Glass A. (2015). Long-term metabolic effects of laparoscopic sleeve gastrectomy. <em>JAMA Surgery, 150</em>(11), 1051-1057. doi:10.1001/jamasurg.2015.2202</td>
<td>“Investigate long-term effects of sleeve gastrectomy on weight loss, type II diabetes, hypertension, and dyslipidemia.”</td>
<td>Cohort, Retrospective analysis of prospective data.</td>
<td><strong>Sample:</strong> 443 initial sleeve gastrectomy patients preoperative (BMI 43.6), 241 patients at 1-year follow-up, 128 at 3-year follow-up, and 39 at 5-year follow-up. Surgery between April 1, 2006-February 28, 2013.</td>
<td><strong>Data Collection:</strong> Demographic and baseline patient blood tests completed and hypertension classified as blood pressure &gt; 140/90 mmHg, rechecked labs and blood pressure at regularly scheduled appointment intervals and at 1, 3, and 5 years. Hospital medical records obtained and phone interviews conducted.</td>
<td>Pre sleeve gastrectomy surgery of the 443 initial sleeve gastrectomy patients, mean BMI 43.6, excess body weight 51.2, there were 82 type II diabetic patients, 65 pre type II diabetics, 110 patients with hypertension, 155 with hypercholesterolemia, and 109 with hypertriglycerides. 1-year follow-up group: mean BMI 29.9, 76.8% excess body weight loss, remission of type II diabetes 50.7%, remission of hypertension 46.3%, 3-year follow-up group: mean BMI 30.8, 49.4% excess body weight loss, remission of type II diabetes 38.2%, remission of hypertension 48.0%, 5-year follow-up group: mean BMI 32.3, 69.6% excess body weight loss, remission of type II diabetes 20.0%, remission of hypertension 45.5%. Low-density lipoprotein (LDL) cholesterol and triglyceride levels decreased in all groups pre sleeve gastrectomy surgery to post sleeve gastrectomy surgery.</td>
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<td>LePage, C. T. (2010). The lived experience of individuals following Roux-en-Y gastric bypass surgery: A phenomenological study. <em>Bariatric Nursing and Surgical Patient Care, 5</em>(1), 57-64. doi:10.1089/bar.2009.9938</td>
<td>To understand the post-surgical experiences of Roux-en-Y patients.</td>
<td>Phenomenological Qualitative</td>
<td><strong>Sample:</strong> 12 adult Roux-en-Y post-surgical bariatric patients, 8 female and 2 male, 2-9 years post-bariatric surgery, recruited through flyers and snowball sampling, surgery dates March 1998-August 2006.</td>
<td><strong>Data Collection:</strong> One-on-one in-depth interviews, audiotaped, length approximately 1 hour; “follow-up interview 1-2 weeks after initial interview (lasting up to 60 minutes). Additional data included researcher observations of participant and notes taken during interview. “Interviews conducted January-March 2008.”</td>
<td>Overarching theme: The Paradox: Rapid transformation (“sense of time, person, relationships, and space). Participants believed everything would just automatically be wonderful after Roux-en-Y surgery, and instead they felt unprepared for the new person they fast developed into on the outside, feeling “emotional incongruity” on the inside. 4 themes emerging from data analysis: 1 – “Renewed hope” for an improved future by being able to overcome their obesity. 2 – Recognizing that “finding balance” in life in an ever-evolving process. Positives and negatives happen in life, and even with weight loss, finding effective ways in dealing with life is still there. 3 – “Filling the void” after food can no longer be that “filler” post-surgery for</td>
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emotions, to be social, or for other reasons. Finding alternative ways to fill this void may lead to healthy or unhealthy behaviors; awareness if there is a problem is important.

4 – “Transformation of self-image” includes body image changes after surgery that transform the external image quickly but the internal person may still need time to assimilate how they look or how they feel, or how they are now perceived by others, now that they are no longer obese.
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<td>Jones, L., Cleator, J., &amp; Yorke, J. (2016). Maintaining weight loss after bariatric surgery: When the spectator role is no longer enough. Clinical Obesity, 6, 249-258. doi:10.1111/cob.121152</td>
<td>Roux-en-Y patients’ “expectations and experiences of having weight regain” ≥ 2 years after initial surgery.</td>
<td>Qualitative</td>
<td>Sample: 10 adult Roux-en-Y post-surgical bariatric patients, 8 female, 2 male, mean age 46.9, 2-6 years post-bariatric surgery, recruited through UK Hospital Trust bariatric surgery unit, identified through their clinic database as having weight regain of at least 10% of total weight lost. Setting: At bariatric clinic and homes of participants.</td>
<td>Data Collection: One-on-one in-depth interviews, audiotaped, length approximately 60-90 minutes, 6 interviews per participant, “interview schedule based on weight regain themes from literature.” Weight regain disclosed by participants in interviews: 12-56%. Data Analysis: Audiotapes transcribed, accuracy of transcripts confirmed, Bran and Clarke’s thematic analysis utilized, codes organized into groups, themes identified taking into consideration notes taken during interviews for confirmation.</td>
<td>Overarching theme for weight regain: “Passivity: spectating at the post-surgery experience.” Assuming a passive role thinking the surgery would do the work for the weight loss; not taking an active role in their own weight loss journey to achieve success. Additional themes included: 1 - “Euphoria and liberation” applied to 8 of the study participants; they felt immediately after Roux-en-Y surgery they could give into cravings and started eating unhealthy foods again without feeling they would have the consequence of gaining weight. They lost weight initially and were getting compliments and support which “increased their self-esteem.” Eventually though, they begin regaining weight and also increasing food intake. Two participants did not feel “euphoria and liberation” after Roux-en-Y surgery, but instead felt vulnerable with negative feelings and wanting self-protection. 3 - Participants also had misconceptions about the Roux-en-Y surgery, some believing they would never regain the weight no matter what, and then when beginning to regain, not actively taking responsibility to get it under control called “passive spectator.”</td>
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Abandonment and disempowerment;” were also felt by participants with weight gain. They felt they could not contact their health care provider when regaining weight, that they were alone, and had no tools for success. They felt unclear of what weight loss success or regain means, not knowing how to manage their weight loss or maintain their weight, being unmotivated, and gravitating to how they used to eat prior to their Roux-en-Y surgery. They stated they want someone to help them manage their weight, but they don’t know who to go to. Some also blamed others for their weight regain as well, unable to take responsibility for their own actions or behaviors.

Participants who regained a smaller amount of weight had a more positive outlook, and were more tolerant of the situation of weight regain compared to those who regained a larger amount of weight, being more intolerant to the situation, and becoming depressed and having negative emotions.

Social withdrawal was another theme identified by participants with weight regain, due to feelings of “guilt and shame” and “fear of being judged by their bariatric team so instead they avoid clinic appointments.” They also avoid going to support groups feeling they may also be judged by their peers,
not realizing their peers may be going through the same thing.

7 - Theme ideas participants recommended to help manage or prevent weight regain included:

a) Psychological support on a continual basis (they feel psychological reasons are likely the cause for their overeating and weight regain).

b) Learning how to self-manage the bariatric weight loss process (they say they are lacking in these skills but want to learn and improve).

c) Participants also want their health care providers to hold them accountable for their weight regain and work with them on this by seeing them more often (instead of less often); they would like to be shown how to set up a plan and goals and know they are supported; they don’t want to feel they are alone in this journey.

d) They also all endorsed peer support.
REFERENCES


