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Stephen P. Sowulewski

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THE EXPERIENCES AND PERCEPTIONS OF BEHAVIORAL FACTORS THAT  
CONTRIBUTE TO SUCCESSFUL WEIGHT LOSS IN MALE BARIATRIC PATIENTS

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of  
Philosophy at Virginia Commonwealth University.

by

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## Abstract

### THE EXPERIENCES AND PERCEPTIONS OF BEHAVIORAL FACTORS THAT CONTRIBUTE TO SUCCESSFUL WEIGHT LOSS IN MALE BARIATRIC PATIENTS

By Stephen P. Sowulewski, Ph.D.

A dissertation submitted in partial fulfillment of the requirements for the degree of  
Doctor of Philosophy in Education at Virginia Commonwealth University.

Virginia Commonwealth University, 2016

Major Director: Lisa M. Abrams, Ph.D.  
Associate Professor and Chair  
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School of Education

The purpose of this study was to examine the experiences and perceptions of behavioral factors that contribute to successful weight loss in male bariatric patients. By analyzing participant experiences and perceptions, this study contributes to a better understanding of which factors are most important in the postoperative phase of gastric bypass in males owing to successful weight loss. Although there is a tremendous amount of quantitative research within the bariatric population, there is a significant gap within the qualitative literature as it relates to male outcomes. As such, by conducting interviews with 10 postoperative male gastric bypass patients, this study was able to further understand how and why these participants obtained successful weight loss. Furthermore, by identifying relevant categories and thematic responses

from the participants, this study may serve future researchers in designing other qualitative studies that target best practices in males for successful weight loss outcomes. The findings of this study indicate that participants found greater weight loss success by following proper eating behaviors and engaging in physical activity whereas support group attendance was not found to be an important factor in successful weight loss. This study also revealed that follow up with the bariatric nurse coordinator was greatly viewed as a positive step in adjusting to lifestyle postsurgery. As such, this supportive role by the nurse coordinator may provide further impetus for the ways in which bariatric personnel interact with patients who might not always be able to see their surgeon for follow-up.

## **Chapter 1. Introduction**

### **Background for the Study**

In examining current trends in the United States, the prevalence of obesity is 33% and is predicted to reach 50% within the next two decades (Wang, McPherson, Marsh, Gortmaker, & Brown, 2011). In order to quantify obesity and overweight in terms of categories for risk and health disparity, the body mass index ( $BMI = kg/m^2$ ) is used to classify ranges of overweight and obesity. According to the American College of Sports Medicine (ACSM), a range of 25-29.9  $kg/m^2$  denotes overweight while a range of greater than 30  $kg/m^2$  is considered obese (Esmat, 2012).

For those who fail to lose a significant amount of weight through lifestyle intervention, there are other alternatives which include the use of weight loss medication and bariatric surgery. Although nutrition and exercise are the preferred method for weight management, surgery as a modality for weight loss is becoming an option for obese individuals who have failed to lose weight through nonsurgical means (Foust, Burke, & Gordon, 2006). Typically one is eligible for bariatric surgery if he or she has a BMI of 40  $kg/m^2$  or a BMI greater or equal to 35  $kg/m^2$  with obesity-related comorbidities such as heart disease, diabetes, and cancer.

Two commonly performed bariatric procedures include roux-en-Y gastric bypass (RYGB), which is seen as the predominant approach in the United States (Santry, Gillen & Lauderdale, 2005), and laparoscopic adjustable gastric banding (LAGB), which is more

widespread in Australia and Europe (Buchwald & Williams, 2003). However, in Europe LAGB procedures have been declining in favor of RYGB (van den Oever & Volckaert, 2006). The change in procedures is thought to be a result of increasing acceptance of RYGB as superior in obtaining weight loss even though there is an increase in short-term morbidity (Nguyen, Slone, Nguyen, Hartman, & Hoyt, 2009). Conversely, LAGB is considered less efficient than RYGB with regard to losing weight, but has the advantage of short-term morbidity (Angrisani, Lorenzo, & Borrelli, 2007).

Both procedures are referred to as restrictive but gastric bypass is also malabsorptive, which means that uptake of nutrients may become diminished. In LAGB, there is no bypass of the intestines so absorption of nutrients is not a concern (Hirschfield & Stoernell, 2004). A tertiary surgical option known as laparoscopic sleeve gastrectomy (LSG) is also being utilized on bariatric patients. This procedure aids in weight loss due to its restrictive component and the fact that possible neurohormonal changes occur as a result of lower ghrelin levels (Snyder-Marlow, Taylor, & Lenhard, 2010).

### **Overview of the Study**

Due to the limited body of research on males who undergo bariatric surgery, the primary aim of this study was to obtain an in-depth perspective of the experiences and perceptions of behavioral factors that contribute to successful weight loss in male bariatric patients. It has been posited that unless lifestyle interventions are practiced following bariatric surgery, successful weight loss outcomes will be difficult to obtain (De Zwaan et al., 2002). The behavioral factors examined in this study included eating behaviors, physical activity, support group attendance, and physician follow-up.

## Overview of the Literature

Bariatric research has largely been aimed at looking at the patient's eating patterns and dietary practices including eating disorders after surgery (Clark et al., 2003; Kalarchian et al., 2002; Sarwer, Wadden, & Fabricatore, 2005). However, research suggests other strategies in the aftermath of weight loss surgery such as physical activity, support group attendance, and physician follow-up seems to positively influence weight loss progression.

**Eating behaviors.** In bariatric patients, the trajectory for weight loss and long-term weight maintenance is impacted by food intake and eating pattern (Colles, Dixon, & O'Brien, 2008a). Patients' eating behaviors are important in the postoperative phase of weight loss surgery, but researchers are continuing to examine preoperative eating behaviors which may provide further insight into the patients' weight loss prospects before they undergo surgery. The relationship between preoperative eating behavior and postoperative weight loss is not well understood (Sarwer et al., 2008).

Some patients exhibit maladaptive eating behaviors before or after they undergo bariatric surgery. These behaviors include binge eating, frequent grazing, excessive sweet eating, and other emotional eating manifestations. In order to mitigate these eating behaviors, researchers have examined when best to deliver an intervention that will provide the best weight loss outcomes for the patient. For example, Leahey, Bond, Irwin, Crowther, and Wing (2009) found the likelihood of postoperative patients following up with their physician was greater than preoperative patients. On the other hand, Leahey et al. contend addressing motivational factors relating to weight loss may lead to better compliance in the preoperative patients who express a need for an intervention prior to surgery.

**Physical activity.** Several studies point to the need for addressing physical activity in patients who elect to have weight loss surgery. Despite the efficacy of physical activity in the obese population, data regarding the impact of physical activity in bariatric patients is not as clear (Mundi, Lorentz, Swain, Grothe, & Collazo-Clavell, 2013). Questionnaires still remain one of the major tools used in tracking weight loss postoperatively. However, patients who self-report may underestimate the accuracy in their weight loss due to potential recall bias that could impede the delivery of valid results. Therefore, other modes of data collection may be considered. Almost all bariatric studies utilize a quantitative paradigm which hinders researchers' abilities to fully understand the patients' perceptions and thought processes about obesity and treatment (da Silva & da Costa Maia, 2012). Qualitative approaches to obtaining responses from patients who wish to go into greater detail of their weight loss struggles after surgery may provide a more realistic frame of reference for outcome in weight loss.

Successful weight loss is the primary patient outcome in bariatric surgery. As such, depending upon the procedure used as well as the follow-up time, patient weight loss can range from 40%-78% of excess body weight (Fisher & Schauer, 2002). Being able to ascertain the amount of physical activity required in order to ensure weight loss has been found to be quite variable in that the amount of studies examining this question are limited (Livhits et al., 2010).

**Support group attendance.** Undergoing weight loss surgery is a life changing event for patients and, as such, having a support structure in place whether it is from family or from an external weight loss support group is purported to have positive benefits. The American Society for Metabolic and Bariatric Surgery (ASMBS) has developed the Bariatric Surgery Centers of Excellence program (Pratt, McLees, & Pories, 2006), which consists of organized and supervised support groups facilitated by a licensed health-care professional that is present at the meetings.

The hope is that by attending support group meetings, it is another mode of positive reinforcement in the pursuit of weight loss postsurgery.

Being that patients may not remember directives given to them preoperatively, support groups can help provide continuing education after surgery leading to associated postoperative weight loss (Livhits et al., 2010). For patients undergoing bypass and banding, studies have shown improved weight loss especially in bypass patients and after 6 months when the rate of weight loss begins to wane (Song, Reinhardt, Buzdon, & Liao, 2008). Elakkary, Elhorr, Aziz, Gazayerli, and Silva (2006) reinforce the importance of LAGB patient follow-up in addition to the pivotal role that support groups play in helping to lose weight.

**Postoperative physician follow-up.** Adherence to follow-up appointments has been linked with improved patient outcomes (Wheeler, Prettyman, Lenhard, & Tran, 2008). To this end, when patients are lost to follow-up, relationships with other bariatric professionals with whom the patient may have worked (dietitian, nurse, or physiologist) are now closed off. Conversely, there is some evidence that missed preoperative office visits can affect patient outcomes as well. El Char et al. (2011) assert that patients who miss their preoperative appointments, owing to lack of compliance, might better be identified from the outset. This could provide meaningful information as to possible suboptimal postoperative complications.

Procedurally, between LAGB and RYGB, follow up may lead to differing outcomes. For example, with LAGB patients, band adjustments are important. Consistent follow-up is imperative in order to achieve long-term success after LAGB (te Riele, Boerma, Wiezer, Rinkes, & van Ramshorst, 2010). With RYGB, Gould, Beverstein, Reinhardt, and Garren (2007) posit that patients see a greater weight loss 3 years postoperatively than those lost to follow-up early

on. Beyond 5 years, it is not known if follow-up has any dramatic differences in weight loss outcomes according to these researchers.

### **Rationale and Significance for the Study**

This study focused on a subgroup of the population that has not been adequately studied by researchers in the bariatric research—male patients. Secondly, while there are numerous quantitative studies within the bariatric literature, qualitative studies of patient perceptions that explore factors leading to successful weight loss are very limited. As noted by Morse, Swanson, and Kusel (2001, p. 38), “Qualitative research has the capacity to inform clinical practice by deepening our understanding of the human experience and phenomena that exemplify that experience.” Obtaining an in-depth personal understanding of why a patient is successful in losing weight helped to identify the most essential behaviors that have a positive impact on weight loss in prospective bariatric patients. Unlike mail-in surveys, conducting semistructured interviews allowed the researcher the opportunity to probe or ask follow-up questions. While a chart review would have allowed the researcher to determine if the patients had achieved an acceptable amount of weight loss, a qualitative exploration of successful weight loss behaviors helped to uncover detailed and nuanced aspects of patient compliance.

The literature is mixed regarding what successful weight loss looks like in bariatric patients especially in terms of surgical procedure. For example, reports of a loss of more than 50% excess body weight, amelioration of comorbidities, decrease in BMI to less than 35 kg/m<sup>2</sup>, patient satisfaction or improved quality of life (Angrisani et al., 2007). As such it should be noted that those who undergo LAGB procedures may not yield  $\geq 50\%$  excess weight loss. In fact, the literature reveals weight loss of less than 30% to greater than 70% excess weight loss for LAGB patients (Ahroni, Montgomery, & Watkins, 2005). Finding which factors or which



combination of weight loss factors lead to successful weight loss will allow physicians to work in a more collaborative fashion with bariatric ancillary professionals.

### **Statement of the Problem**

The purpose of this study was to examine the experiences and perceptions of behavioral factors that contribute to successful weight loss in male bariatric patients. The researcher found only two articles pertaining exclusively to male patients in terms of preoperatively concerns for successful weight loss postoperatively. Thus, this study addressed a clear gap in the literature through the implementation of a qualitative research design.

The results of this study contribute to the knowledge base and best practices related to successful weight loss in male bariatric patients. Bariatric research has concentrated on quantitative methods using validation and statistical application of how success is identified (Ogden, Clementi, & Aylwin, 2006). Quantitatively, the researcher cannot know the participants' unique experience with bariatric surgery so a qualitative paradigm will help to facilitate the understanding.

Qualitative research is centered in process rather than outcome measures or final products according to Bogdan and Biklen (2007). By using a qualitative design, the data collection process was able to uncover additional insights in order to help the researcher better comprehend the challenges and barriers in participant experiences and perceptions to determine those behavioral factors most associated with successful weight loss. For example, eating behaviors, physical activity, support groups, and physician follow-up may have varying degrees of influence on how patients lost weight.

## **Design and Methods**

This study employed a case study design to examine the primary research question: What are the experiences and perceptions of behavioral factors that contribute to successful weight loss in male bariatric patients? Qualitative data collection was used to determine trends and themes (Yin, 2003) that emerged from the descriptions of successful weight loss in male bariatric patients. This study sought to uncover the “how and why” behind the challenges from the participants’ perspective.

Bariatric studies involving men are not commonplace within the literature as compared with women. Examining gender-based differences could lead researchers to significant findings in terms of weight loss in patient populations. Men have been found to lose more weight than women in studies involving surgery, behavioral interventions, as well as drug protocols for obesity (Wadden, Foster, Letizia, & Stunkard, 1992). Weight loss after surgery has been shown to vary between the genders is often attributed to metabolic differences (Sarwer et al., 2008). The present study examined the experiences and perceptions of behavioral factors that contribute to successful weight loss in male bariatric patients.

## **Participants**

In this study, male patients were recruited from a database of existing patients at a surgical practice in Richmond, VA who met the following criteria: surgery completed within 2011-2014 and completed physician follow-up at 12 months postsurgery. This 12-month time frame has been established in the literature when weight loss outcomes are generally the greatest in terms of successful bench marks.

A total of 10 participants were interviewed to further explore the intricacies of successful weight loss. The interview process revealed added insights to more fully comprehend the

challenges or barriers behind the patients' earlier life experiences specifically as related to their struggle with obesity and to better understand which behavioral factors were associated with successful weight loss. This study examined patients' experiences and perceptions of successful weight loss as defined as  $\geq 50\%$  excess weight loss.

### **Data Collection Procedures**

The preliminary stage of this research began with the assistance of the database manager at the surgical practice of the regional hospital in helping to provide a list of potential patients to the bariatric program coordinator in order to identify those interested in participating in the study. Prospective patients were then approached by the bariatric program coordinator and briefed about the study and provided with a document further explaining the study parameters as approved by the IRB. The researcher was provided with the names of the prospective patients and, as such, the patients were contacted by the researcher to determine confirmation of their interest in the study. After confirmation, the researcher scheduled interview times with the participants. Before the interviews began, an informed consent process was conducted.

A semistructured interview protocol was used to guide the interview; this approach allows for flexibility to ask follow-up and probing questions while ensuring consistency in the interview data collection process with a standard set of questions. The protocol was piloted with two female gastric bypass patients so as not to deplete the potential male participant pool and field test the data collection tool.

### **Data Analysis**

Upon completion of the semistructured interviews, the audiotapes were transcribed and each individual transcript was thoroughly read using an open-coding approach with line by line analysis. Data were then coded both categorically and thematically to identify emergent trends

and themes associated with behavioral factors of successful weight loss in male gastric bypass patients.

### **Definition of Terms**

*Bariatrics*: The branch of medicine that deals with the prevention, control, and treatment of obesity. The term is used coupled with the word surgery, as in bariatric surgery, which may consider two options known as gastric bypass and gastric banding (Taber's Cyclopedic Medical Dictionary, 2001, p. 227).

*Body mass index (BMI)*: An index of a person's weight in relation to height that correlates with total body fat content (Boyle & Long, 2010 p. 286)

*Comorbidity disease*: Often referred to in the literature as comorbidity, this term describes a disease that worsens or impacts a primary disease (Taber's Cyclopedic Medical Dictionary, 2001, p. 459).

*Compliance*: The extent to which a patient's behavior coincides with medical advice (Taber's Cyclopedic Medical Dictionary, 2001, p. 461).

*Dumping syndrome*: A syndrome marked by sweating, weakness, nausea, palpitations, diarrhea, and occasionally with syncope. This syndrome often occurs in patients who have had gastric resections (Taber's Cyclopedic Medical Dictionary, 2001, p. 644).

*Gastric banding*: Placement of an adjustable silicone band around the upper part of the stomach to create a small pouch. This limits food consumption and creates an earlier feeling of fullness (Boyle & Long, 2010, p. 312).

*Gastric bypass*: A small Y-shaped section of the small intestine is attached to the stomach pouch to allow food to bypass the lower stomach and the upper portion of the small intestine (Boyle & Long, 2010, p. 312).

*Satiety*: Being full to satisfaction, especially with food (Taber's Medical Encyclopedia, 2001, p. 1944).

*Sleeve gastrectomy*: Surgery in which 60% to 80% of the stomach is removed longitudinally, resulting in a smaller stomach that takes the shape of a sleeve (Snyder-Marlow et al., 2010).

## **Chapter 2. Review of the Literature**

Long-term weight loss is determined by patient's motivation to adopt the necessary lifestyle changes deemed to be a lifetime commitment to behavioral modification (Zalesin et al., 2009). Zalesin et al. suggest that those patients who fail to follow compliant behaviors often suffer from weight regain. When the physician declares that a patient meets all criteria for bariatric surgery, the patient must then accept the fact that an enormous shift in lifestyle responsibilities will accompany the decision to undergo bariatric surgery. The literature on following best practices of employing behavioral factors such as eating behaviors, physical activity, social support, and physician follow-up on behalf of the bariatric patient will be discussed throughout this chapter.

This chapter addresses the following areas: the health ramifications of obesity; approaches to weight management using traditional lifestyle approaches such as exercise and nutrition practices in addition to behavior modification and pharmacotherapy as an intervention; bariatric surgery as a tertiary means of obtaining successful weight loss; bariatric research in males; eating behaviors (preoperative and postoperative); physical activity (preoperative and postoperative); support group attendance and postoperative physician visits.

While this study did not examine obesity-related comorbidities or the fact that these conditions often diminish postoperatively, it did seek to look at outcomes of successful weight loss in men based on behavioral factors such as eating behaviors, physical activity, support group

attendance, and physician follow-up. Being that obesity perpetuates a less than ideal health status, it is important that men are studied due to the impact that obesity has on them later in life.

Life expectancy on average in the United States is now 76.3 years for men and 81.1 years for women (Hoeger & Hoeger, 2015, p. 5). Life expectancy for men has traditionally been disparate in comparison with women. Therefore, if obesity in men has been found to be more problematic, it is imperative that studies address males and the bariatric experience.

### **Health Ramifications of Obesity**

The World Health Organization recognizes obesity as a major public health threat; and in June of 2013, the American Medical Association officially recognized obesity as a disease (Apovian & Mechanick, 2013). As society continues to become increasingly more sedentary, the prevalence of obesity is showing no signs of diminishing and instead is becoming a serious public health concern. “This trend in morbid obesity results in increased healthcare utilization and costs, as healthcare costs for the morbidly obese are 81% above those for the non-obese population and 47% above costs for the non-morbidly obese population” (Arterburn, Maciejewski, & Tsevat, 2005, p. 334).

### **Lifestyle Approaches to Weight Management: Eating Behaviors**

Eating behavior and physical activity work in tandem to help fuel a healthy lifestyle. As such, the importance of proper nutrition for optimal health is ubiquitous given the media driven culture that we live in. Moreover, there is a tremendous amount of literature that addresses eating behaviors with regard to a healthy well-being. Eating patterns can have a profound effect on a person’s health. Sound eating practices that provide consistency and satiety are a general rule of nutrition. Eating regular meals and snacks to bolster the metabolic rate is a prudent behavior among healthy individuals. With regard to dieting, although most diets enable a short-

term weight loss, many people become frustrated and diets eventually fall out of favor (Summerfield, 2012). A more restrictive approach to losing weight is something known as very low calorie diets. These very low calorie diets usually result in a 15%-25% baseline weight loss over the course of 12-24 weeks (Tsai & Wadden, 2006). Lastly, these diets require a physician's supervision and are defined as "diets providing 800 kcal or less each day that are usually in liquid form, rich in protein, and supplemented with essential nutrients," (Summerfield, 2012, p. 367).

### **Lifestyle Approaches to Weight Management: Physical Activity**

Physical activity offers a myriad of health benefits not only for the apparently healthy individual but for the obese individual as well. For example, in the morbidly obese, a medium such as water would help to foster a better environment in which to move freely during exercise. Potential benefits to the obese person might include prevention of further weight gain and improved health. Physical activity is essential for weight management because it burns fat and increases muscle mass. Individuals whose BMI is within a range of 30 to 40 kg/m<sup>2</sup> have greater variability in their capacity for exercise versus individuals at a BMI of 40 kg/m<sup>2</sup> and above who tend to experience hardships with exercise and increasing exertion (Koplan & Dietz, 1999, p. 1579-1581).

In order to help the general population determine the appropriate exercise prescription for each type of physical activity, various organizations have developed guidelines. The type, intensity, duration, frequency and rate of progression of exercise is adapted from the ACSM's *Guidelines for Exercise Testing and Prescription* and the *United States Department of Health and Human Services, 2008 Physical Activity Guidelines for Americans*.



## **Lifestyle Approaches to Weight Management: Behavior Modification**

Physical activity and one's own eating behaviors appear to have a profound effect on keeping weight in a healthy range. However, some obese individuals are unable to attain weight loss solely through these traditional lifestyle approaches. Thus, in addition to the traditional approaches to weight management, the pursuit of other weight loss modalities might include group therapy, cognitive behavioral therapy, telephone and Web-based counseling.

The practice of behavior modification has been used for weight loss purposes and can be combined with other methods such as exercise and a proper nutrition regime (Poston & Foreyt, 2000). Self-monitoring is a branch of behavior therapy that allows the individual to keep a log of his or her behavior for a given time frame (Poston & Foreyt, 2000). According to researchers, keeping the log acts as an accountability tool for the individual. When cognitive restructuring is used, this allows for the interplay between a person's thoughts and beliefs about weight status. Cognitive restructuring fosters a better sense of self-worth and can be used to thwart negative emotions and instead replace them with a more positive mindset. Relapse prevention teaches patients how to better cope with any setbacks that may occur from noncompliance (Poston & Foreyt, 2000).

Telephone-based and Internet-based modalities are now on the rise as a means for weight loss management. Just as with other approaches to weight management, these strategies focus on self-monitoring of eating and physical activity (Berkel, Poston, Reeves, & Foreyt, 2005). By using telephone calls and mailings as helpful reminders around the holiday season, researchers have found participants to be more inclined to adhere to positive health habits which impact weight loss (Boutelle, Kirschenbaum, Baker, & Mitchell, 1999).

Due to widespread use of technology, some researchers have looked at the benefit of online weight management programs (Christensen & Griffiths, 2002). It is prudent to seek out valid Web resources, such as sites from the government or academia, especially if the college or university is associated with a teaching hospital. Tate, Jackvony, and Wing (2003) compared two studies and found that e-counseling has a much greater impact on successful weight management outcomes versus those devoid of any interaction with a counselor other than the Internet.

In terms of patients who have already advanced to the bariatric surgery stage as a last resort option, there are specific programs currently in place using electronic media for those who undergo gastric banding. There are two computer-based programs that are available to help patients effectively manage their weight loss. Allergan, maker of the Lap-Band, and Ethicon Endo-Surgery, producer of the Realize® band, both use an interactive software package as an adjunct to postoperative compliance to weight loss. Allergan's program is called My LAP-BAND Journey, and Ethicon Endo-Surgery markets the Realize® as My Success program.

### **Lifestyle Approaches to Weight Management: Pharmacotherapy**

Weight loss drugs hold some promise for more expedient weight loss as compared to diet and physical activity, but have not been found to be effective long term for weight loss maintenance (Summerfield, 2012, p. 356). Should the patient fail to lose at least one pound per week during the initial period of 1 month, it is recommended that a reassessment be conducted to ensure the efficacy of drug therapy for obesity (National Task Force on the Prevention and Treatment of Obesity, 1996). There are three current categories of weight loss drugs: appetite suppressants, thermogenic drugs, and fat-blocking drugs. Alli® helps to reduce fat absorption and is the first over-the-counter drug approved by the U. S. Food and Drug Administration for

weight loss (Summerfield, 2012, p. 353). One study identified consumer use of Alli® whereby users followed exact dosage instructions, utilized educational materials provided by a starter kit, and decreased fat and calorie intake. The results indicated that more than half of the participants also increased their physical activity in concert with the drug (Schwartz, Bansal, Hale, Rossi, & Engle, 2008). This demonstrates that weight loss medication, as adjunct therapy with decreased caloric intake and energy expenditure seem to benefit weight loss.

Two new drugs available by prescription only recently received U. S. Food and Drug Administration approval in the summer of 2012, Belviq® and Qsymia® to help control appetite and suppress hunger, respectively. Clinicians who work with obese individuals who are on weight loss medication are advised to continually emphasize the role of diet and exercise in achieving and maintaining desired weight goals (Berkel et al., 2005).

### **Bariatric Surgery**

Due to the rising prevalence of obesity, bariatric surgery is a tertiary option to lifestyle and medicinal interventions. The ASBMS convened a panel in 2005 in which a series of consensus statements were drafted to serve as a guide for the prospective bariatric patient. One of the findings reads:

Bariatric surgery candidates should have attempted to lose weight by non-operative means, including self-directed dieting, nutritional counseling, and commercial and hospital-based weight loss programs, but should not be required to have completed formal non-operative obesity therapy as a precondition for the operation. (Buchwald & Consensus Conference Panel, 2005, p. 371).

Unfortunately, traditional nonsurgical weight loss methods that attempt to decrease weight through diet and behavior can be fraught with poor outcomes and inevitable relapse (Benotti &

Forse, 1995). The ASBMS statistics on bariatric surgery show that Americans have received an estimated 205,000 surgical procedures in the year 2007. Financially, bariatric surgery is estimated to cost almost \$20,000 per procedure (Encinosa, Bernard, Steiner, & Chen, 2005) while hospital stays totaling \$30,000 have been reported (Davis, Slish, Chao, & Cabana, 2006). It should be noted that bariatric surgery has proven to cause sustained weight loss and a decrease in comorbidities. However, these surgeries can be deleterious and lead to a risk of 0.5%-2% mortality and 10%-40% risk for morbidity (Farrell, et al., 2009).

**Types of surgeries.** Although the most frequent bariatric surgery in the United States continues to be RYGB surgery, at one point in the early to mid-2000s, many physicians had begun to recommend the less invasive and reversible technique of LAGB. Gastric bypass is considered a restrictive and malabsorptive procedure whereas LAGB is simply restrictive. In gastric bypass surgery a small stomach pouch is created to restrict food intake by taking a section of the small intestine and attaching it to the pouch to allow food to bypass the lower stomach and part of the small intestine. With LAGB, there is no bypass of the intestines or stomach which leads to minimal risk of nutrient deficiency (Hirschfeld & Stoernell, 2004).

LAGB functions by the use of a silicon ring that fits around the upper portion of the stomach which serves to limit food intake and further allow for addition or removal of saline through a subcutaneous port depending on the patient's needs. Including both principal types of bariatric surgeries, the number estimated in America and Canada for the year 2009 was at 42.3% for gastric banding and 65.1% for gastric bypass (Buchwald & Oien, 2009).

Recently, however, another procedure is being offered in addition to banding and bypass. LSG is now a third option. For many years, gastric bypass has been the "gold standard" in

bariatric surgery in the United States and LAGB has enjoyed similar popularity in Australia. Interestingly enough, gastric bypass is now receiving some greater attention in Australia.

Due to its recent emergence, there are no long-term studies on LSG. The procedure may be more advantageous than LAGB as there is no foreign object (band) placed in the abdomen and hence no cause for band adjustments after surgery (Snyder-Marlow et al., 2010). Further, LSG might be a better option as weight loss is comparable to gastric bypass but there is less risk for complication due to dumping syndrome and malabsorption which is often seen in gastric bypass patients (Snyder-Marlow et al., 2010).

**Patient selection.** In order to become a candidate for surgery, the patient must meet with a bariatric surgeon for consultation to discuss his or her health status and to ascertain if he or she meets the criteria set forth by national standards. If an individual is at a BMI of 35 along with co-morbid conditions such as diabetes, sleep apnea, hyperlipidemia, and hypertension or if the patient presents with a BMI of 40 or above, the patient meets the main aspects of these criteria. However, the patient must be evaluated further from a cognitive standpoint to gauge if he or she is competent to fully understand the procedure and to ensure that they are ready to change their lifestyle. As of February 16, 2011, the FDA expanded its approval to allow for patients to undergo bariatric surgery who present with a minimum of one comorbidity as long as they are in a BMI range of 30-40.

**Preoperative weight status.** The ASMBS has not made any mandatory recommendations in regard to preoperative weight loss. Although most large-volume centers are somewhat comparable in giving medical clearance to the patient, at this time there is still no clear consensus as to what should be required of these patients preoperatively in lieu of lifestyle changes (Ray, Nickels, Sayeed, & Sax, 2003). Many hospitals and medical centers are being

more selective in choosing their case load. It is becoming more widely acceptable for bariatric programs to add a preoperative weight loss requirement (Colles, Dixon, Marks, Strauss, & O'Brien, 2006).

A majority of surgeons feel that the patients who are able to demonstrate preoperative weight loss may position themselves for more successful outcomes postsurgery (Alami et al., 2007). Also, some researchers believe there to be a relationship between preoperative eating behavior and postoperative weight loss but questions still remain unanswered (Sarwer et al., 2008). There are some who are in opposition to preoperative weight loss as a requirement before surgery. The argument put forth is that waiting for patients to lose the required weight will delay surgery and thereby affect surgeons' practices. Moreover, this could impact patients who want to have their surgery sooner rather than later.

The fact remains that patients must go through a process of consultation with various ancillary clinicians before they can even be scheduled for surgery. This surgery cannot be expedited without going through an extensive preoperative workup. Due to the varying amount of excessive weight loss achieved after weight loss surgery, guaranteed preoperative predictors of the postoperative percentage of excessive weight loss do not currently exist (El Chaar et al., 2011).

### **Bariatric Research Involving Males**

Using males as the target population in this study contributes to the bariatric literature as previous studies indicate that surgical patients are overwhelming female. Researchers at the University of California at Davis indicate that men make up less than 20% of bariatric surgeries (Farinholt, Carr, Chang, & Ali, 2013). It appears that men may obtain increased benefit from surgery as they typically show signs of advanced obesity later in life along with more

complicated disease states (Farinholt et al., 2013). Thus, it is important that men overcome potential obstacles to surgery, and more importantly that investigators be able to study both genders so population-based studies can provide greater generalizability.

When comparing the genders in bariatric research, studies have focused on various aspects related to female patients' surgical experience due to the fact that women comprise the majority of those seeking surgical intervention (Walfish & Brown, 2007). Earlier studies by Zizza, Herring, Stevens, and Carey (2003), Fabricatore, Wadden, Sarwer, and Faith (2005), and Shai, Henkin, Weitzman, and Levi (2003) report female patients in the majority as compared to their male counterparts receiving the same bariatric surgical procedures. This is a continuous theme throughout the literature whereby studies include more women than men.

Postoperative follow-up is especially troubling in male LAGB patients. While follow-up is important in both genders, men have been shown to differ in compliance to postoperative visits to their physician (Dixon et al., 2009). The main outcome measure studied by Dixon et al. (2009) reveals excess BMI loss at 2 years to be lower in men as compared to women. These researchers posit that men should be targeted early on when they fail to attend physician appointments so as to help reduce the risk of unsatisfactory weight loss. Secondly, men often receive a larger LAGB system which can cause them to need additional band adjustments in order to achieve sufficient fill volume or satiety. For that reason, men may find increased visitation to be problematic in terms of time, therefore rendering them less likely to visit their physician's office to have the band adjusted. However, researchers posit that less frequent visits might be suggestive of adherence to nonfluctuating standards of eating or physical activity that remain consistent and of which could lessen the need to follow up with regard to band

adjustments. Conversely, men who have undergone gastric bypass tend to be more compliant with physician follow-up especially at 12 months postsurgery (Lara et al., 2005).

On the basis of age, one all male study compared excess weight loss in men aged 60 years and older with men aged 50-59 years at 1-year follow-up after bariatric surgery. Findings revealed that aside from an increased morbidity rate, obese men greater or equal to 60 years of age performed as well as men aged 50-59 in regard to excess weight loss (Wool, Bellatorre, Wren, & Eisenberg, 2009). The researchers asserted that the Veterans Affairs population may widely benefit from bariatric surgery due to the variation of age in males who frequently access the VA for their health-care needs. Further, age is found to be a significant predictor of outcome after gastric bypass as reported by Scozzari, Passera, Benvenga, Toppino, and Morino (2012).

In terms of indices that may be related to eating behavior and impact on weight loss, the following studies are compelling. Ardestani et al. (2012) purport that weight loss differences between males and females may be linked to satiety levels. Frank et al. (2010) report increased brain activation in females as compared to males while viewing images of high-caloric foods in the fasting and nonfasting state, therefore concluding that gender plays a major role in the interaction of eating and motivation. In contrast, Haase, Green, and Murphy (2011) studied less alteration in brain activation from hunger to fullness in women as compared to men and contend that there might be a gender-based difference resulting in eating-related signals in the brain.

In the preoperative phase, Walfish and Brown (2009) examined 100 men to determine which negative emotional states were most frequently related to increased eating behavior by using a questionnaire. Their results show the following: boredom yielded higher scores, followed by stress induced eating, bouts of depression, tendency to feel anxious, exhausted, and angry. More than half the sample (59%) stated that emotional factors were at work and only



18% could be identified as *emotional eaters*. In response to the outcomes, these authors deem it appropriate to identify patients who may have these issues prior to their surgery and to assist them in seeking out interventions leading to weight loss maintenance.

In another LAGB study, male gender continues to be associated with unsuccessful weight loss (Thalheimer et al., 2009) in that success is attained if excess body weight loss is greater than 50%. The study found being female and demonstrating prudent postoperative eating behaviors were the strongest predictors of successful weight loss. In men, it was lack of physical activity that was linked to unsuccessful weight loss. Thalheimer et al. examined whether gender and preoperative weight were critical factors in the decision to undergo LAGB or gastric bypass. As such, it was important to examine issues that may be specifically related to the male experience with regard to bariatric surgery. These research efforts may help to determine why lower numbers of males are seeking this surgery relative to females.

### **Eating Behaviors Preoperative and Postoperative**

Bariatric research has largely been aimed at examining a patient's eating patterns and dietary practices including eating disorders (Clark et al., 2003; Kalarchian et al., 2002; Sarwer et al., 2005). Challenges that patients experience when adopting healthy eating behaviors postoperatively can impact their long-term success. Leahey and colleagues (2009) believe that there is an ideal time to deliver eating behavior interventions. If patients are instructed on healthful eating behaviors prior to their surgery, it might hold that they would have a better understanding of proper eating behaviors after surgery. Although, many bariatric centers have instituted interventions designed to encourage weight loss, Brandenburg and Kotlowski (2005) indicate that some patients prefer behavioral education once they have undergone surgery.

Satiety could be considered an eating behavior as the patient seeks to obtain a fullness or satisfaction with food portion as to not upset the delicate balance of bariatric surgery. Unlike gastric bypass, LAGB requires that the patient attend band-fill clinics in order to obtain the subjective amount of fluid in the band to thwart hunger. Researchers in one study contend that postprandial satiation in the postoperative stage is imperative for quality long-term results (Thomusch et al., 2005).

Australian researchers, Dodsworth, Warren-Forward, and Baines (2010) conducted a systematic review of the literature from 1990 to 2010 exploring eating behavior in LAGB patients. The authors affirm that “there is evidence to suggest that uncontrolled eating behaviors persist in some individuals and that this may be problematic for weight loss after surgery” (p. 1579). Patients who undergo gastric bypass also have some unique challenges to contend with; one such example would include dumping syndrome which results in heavy perspiration and fatigue postprandial. This phenomenon occurs when the gastric bypass patient consumes sweets and becomes ill as a result. Leite Faria, de Oliveira Kelly, Faria, and Kiyomi Ito (2009) further point out that snacking has been associated with poor weight loss outcomes. The authors suggest that screening patients to detect certain eating patterns may lead to better outcomes in terms of the type of surgical procedure chosen and the amount of successful weight loss.

It is imperative that patients maintain healthful eating behaviors after bariatric surgery and avoiding weight regain is definitely preferred. Klem, Wing, McGuire, Seagle, and Hill (1997) explored the phenomenon of food urges in the bariatric population and found that control over these urges led to the successful weight loss and maintenance. The human condition may struggle with urges for certain foods whether an individual’s BMI is normal or registers as overweight or obese. Unlike LAGB patients, those who undergo gastric bypass are said to be

able to better manage their satiety levels due in part to the RYGB procedure (Klem et al., 1997). According to the authors, this procedure somehow alters the physiology of the patient making it more favorable to be able to reduce food urges.

Emotional eating, which also happens in response to emotional distress, has been found to occur prior to and after bariatric surgery (Fischer et al., 2007; Rusch & Andris, 2007). As such, researchers have found this eating behavior to be problematic after bariatric surgery (Grothe, Dubbert, & O’jile, 2006; Zimmerman et al., 2007). When investigators conducted clinical interviews with bariatric patients preoperatively and postoperatively, they found emotional eating to be a critical factor in a patient’s outcome after bariatric surgery (Dziurawicz-Kozłowska, Wierzbicki, Lisik, Wasiak, & Kosieradzki, 2006).

Zunker, Karr, Saunders, and Mitchell (2012) conducted research on eating behaviors postbariatric surgery which focused on a qualitative study on grazing. Grazing has been reported to have multiple definitions within the literature. For example, Saunders (2004) defines grazing as “consuming small portions of food continuously or larger amounts of food over an extended time during the past 6 months” (p. 73). Colles and colleagues (2008a) modified their definition as “the consumption of smaller amounts of food continuously over an extended period of time, eating more than the subjects considered best for them during the past 6 months” (p. 616). A further concept known as nibbling has also been proposed which is referred to as “eating small quantities of foods repetitively between meals, typically triggered by inactivity and or loneliness” (Busetto et al., 2002, p. 84).

Grazing is a pattern that has been recognized in bypass patients both preoperatively and postoperatively but has not had a lot of exposure (Saunders, 2004). Identifying these grazing patterns in the gastric bypass population is important as preoperative patterns may be suggestive

of postoperative eating behaviors which may lead to unsuccessful weight loss (Saunders, 2004). Even though some patients with deleterious eating behaviors may show signs of improvement in the interim, studies indicate that these behaviors may continue after surgery and are related to disappointing outcomes such as weight regain (Hsu, Sullivan, & Benotti, 1997; Kalarchian et al., 2002). Questions still follow as to the amount of food consumed, the kind of food consumed, and frequency of the behavior or if the patient senses a loss of control (Zunker et al., 2012).

Another behavioral factor that might ensue in the bariatric population is that of binge eating disorder. The American Psychological Association, *Diagnostic and Statistical Manual of Mental Disorders* (2013) define a binge as “the consumption of an objectively large amount of food accompanied by a loss of control over eating” (p. 350-353). An increased prevalence of recurrent binge eating is reported across many studies with rates ranging from 2% to 56%, respectively (Bocchieri, Meana, & Fisher, 2002). Researchers have found that binge eating disorder is common in both the preoperative and postoperative stages of bariatric surgery thereby impeding weight loss outcomes.

Saunders (2004) reported that patients often regress back to troubled eating patterns which include unhealthy binges and preoccupation and using food for a particular mood. It is recommended that high-risk individuals should undergo treatment before bariatric surgery or after surgery to help them focus on deleterious eating patterns as well as emotional issues (Saunders, 2004). The bariatric team should examine factors that foster uncontrolled eating such as those brought forth by the surgery to help derail the ill effects (Saunders, 2004). The ASMBS offers guidelines for bariatric treatment centers to evaluate candidates for surgery on the basis of possible binge eating behaviors that may manifest preoperatively (Buchwald, Consensus Conference Panel, 2005). Common practices amongst allied health professionals allows for

inclusion of binge eating as part of the preoperative evaluation assessment (Bauchowitz et al., 2005).

According to Devlin, Goldfein, Flancbaum, Bessler, and Eisenstadt (2004), there is nothing definitive regarding how patients are managed in the wake of binge eating. For example, in one survey of bariatric programs, it was revealed that 50% of bariatric programs consider preoperative binge eating to be a definite contraindication to postoperative outcome (Buchwald, Consensus Conference Panel, 2005). Bariatric program statistics of an earlier survey of binge eating patients indicate that 3% of programs recommend against surgery, 27% postpone surgery, and 50% report variation (Devlin et al., 2004).

By lacking wisdom on the impact of preoperative binge eating in weight loss success, mental health and ancillary bariatric personnel will be challenged by how to best manage this population (Fabricatore, Czerand, Wadden, Sarwer, & Krasucki, 2006). Due to variation between binge eaters and nonbinge eaters, the effect of preoperative binge eaters' status on outcome following gastric bypass is not well understood (Bocchieri-Ricciardi et al., 2006).

### **Physical Activity**

Among the various behavioral factors within the bariatric literature, mention of physical activity is limited in the early stages of weight loss and maintenance following bariatric surgery (Evans, 2010). Thinking about the goal of obtaining weight loss in the form of a physical activity intervention may allow the obese patient to contemplate the supported long-term benefits to exercise in order to help foster weight maintenance and avoid weight regain. A 2011 study by Wouters, Larsen, Zijlstra, van Ramshorst, and Geenen examined the role of exercise cognitions. These authors give an example of this terminology as “specific beliefs about benefits of and barriers to physical exercise.” They contend that patients appear to have more positive attitudes

regarding exercise with improved notions of the efficacy and the barriers involved. Their findings indicate that in the preoperative phase, patients not perceiving exercise as beneficial were predictive of a reduced amount of exercise behavior 2 years after surgery. Two themes emerged from their findings. First, patient perception of decreased benefits may give rise to lesser amounts of exercise 2 years postsurgery. Secondly, patient trepidation of getting injured 1-year postoperatively was a predictor of less exercise 2 years after surgery. Thus, results are suggestive of examining cognitions prior to and after surgery.

**Preoperative physical activity.** The majority of bariatric studies examine postoperative physical activity, whereas very few studies report on physical activity before a patient undergoes surgery (Bond et al., 2006). Bond and his colleagues used the initial surgical consult (3-months presurgery) and a separate appointment (history and physical exam) 2 weeks before surgery to gauge physical activity behavior. Results show increased engagement of moderate to vigorous physical activity as patients approached their surgery date. In another study, Dixon and O'Brien (2002) along with Hatoum, Stein, Merrifield, and Kaplan (2009) found that lower preoperative physical activity is related to lower weight loss at 12 months. Physical activity prior to surgery appears to have the potential to improve weight loss outcomes by increasing physical fitness, decreasing cardiovascular anomalies, and reducing postsurgical complications (Poirier et al., 2009).

Browning et al. (2014) examined both preoperative and postoperative physical activity in LAGB patients and found that increased physical activity before surgery was associated with better weight loss outcomes after LAGB. Browning and colleagues revealed that patients, who incorporated preoperative physical activity, were found to have a greater decrease in BMI and a 10% weight loss as compared to those patients who did not employ physical activity

preoperatively. As in other surgical procedures that are undertaken by the general population, it is prudent for the patient to obtain information on the importance of exercise leading up to surgery and to be fully encouraged to adopt preoperative exercise participation (Browning et al., 2014).

**Postoperative physical activity in gastric bypass patients.** Depending on the type of bariatric surgery utilized, and subsequent weight change, the link between physical activity, weight loss, and maintenance may fluctuate (Jacobi, Ciangura, Couet, & Oppert, 2011). Josbeno, Kalarchian, Sparto, Otto, and Jakicic (2011) examined the activity profile and physical function among gastric bypass patients to explain possible relationships among exercise, physical function, and postoperative weight loss. Their findings suggest that patients fail to show a relationship between physical function and moderate-to-vigorous physical activity but are capable of performing other types of mobility activities. Josbeno and colleagues theorized that lifestyle impediments may not fully explain the patients' physical limitations as further insights are needed in order to develop weight loss guidelines and strategies.

Stegan, Derave, Calders, Van Laethem, and Pattyn (2011) examined the impact of gastric bypass surgery on physical fitness to ascertain if an exercise regime within the first 4 months is efficacious. This study is unique in that it takes into account the effects of both resistance training and cardiovascular exercise following bypass surgery. The results of this study indicate that gastric bypass surgery in the absence of an exercise regimen, results in muscle atrophy with no improvement in aerobic capacity (Stegen et al., 2011). Conversely, the gastric bypass patients in the intervention group (with exercise) showed a marked increase in strength for most muscle groups.

**Postoperative physical activity in LAGB patients.** With regard to cardiorespiratory endurance, researchers found that aerobic exercise is heavily associated with weight loss and results in decreased comorbidities following LAGB (Shada, Hallowell, Schirmer, & Smith, 2013). Two important facets of this study included the emphasis on the importance of exercise in the preoperative counseling sessions as well as the postoperative office visits, and the impact on excess weight loss. Lastly, this study's findings reveal some similarity with recommendations put forth by the American Heart Association of 150 minutes of aerobic exercise per week and the weight loss effect on those who have not received bariatric surgery (Shaw, Gennat, O'Rourke, & Del Mar, 2006).

Colles et al. (2008b) investigated regular exercise habits of patients preoperatively and postoperatively using questionnaires and a pedometer. These researchers found that physical activity behaviors led to weight loss for the LAGB patient in the following ways: by encouraging regular participation in physical activity, using a pedometer as a motivation tool, minimizing inactive pursuits such as watching television and working to overcome barriers to participation (Colles et al., 2008b, p. 839). Finally, this study presented a variety of factors found to be highly predictive of percentage weight loss at 12 months including higher baseline BMI, higher 12-month quality of life as related to physical functioning, and higher 12-month leisure time activity.

**Frequency, intensity, and time of physical activity.** Physical activity participation with regard to the frequency, intensity, and time (FIT principle) in the preoperative and postoperative stages could possibly bring about a reduction in postoperative complications and, moreover, be a benefit to the patient's weight loss outcomes (Evans, 2010, p. 124). In a recent systematic review, investigators report the substantial benefits of a physical activity regime postoperatively



and the positive impact on weight loss (Egberts, Brown, Brennan, & O'Brien, 2012). While the review speaks to the incorporation of physical activity after surgery, the exact exercise prescription has yet to be established (Egberts et al., 2012). In a study by Seres et al. (2006), it was revealed that significant weight loss in bariatric patients was shown to result in a more robust exercise capacity. This is indicative of an increased ability to perform the work necessary at lower caloric cost and to increase cardiovascular stress, enhancing the utilization of cardiac reserve.

The appropriate type of exercise mentioned within the literature has varied; however walking has been suggested for the bariatric patient along with the use of pedometers (Petering & Webb, 2009). Seres et al. (2006) recommended that nonweight-bearing, low-intensity exercise such as biking or swimming would serve as an initial starting point after surgery. In addition, some researchers have recommended the accumulation of weekly activity points based upon the type of activity performed such as walking, cycling, or housekeeping (Ehram, Stoffel, Koerner, Melges, & Ainsworth, 2009). This recommendation somewhat relates to the International Physical Activity Questionnaire. Long-term compliance to exercise regimens with a caloric expenditure of 1,500 to 2,000 calories per week has been shown to minimize weight gain (Fogelholm & Kukkonen-Harjula, 2000). The National Heart Lung Blood Institute Obesity Foundation Initiative Expert and the U. S. Preventive Services Task Force established guidelines consisting of a half hour of activity per day with a negative energy balance of 2,500-3,500 calories per week in order to decrease comorbidities and assist with weight loss in surgical patients (Okay, Jackson, Marcinkiewicz, & Novella, 2009).

Comprehensive guidelines for a specific amount of exercise in the bariatric patient population still must be addressed. Evans et al. (2007) found that patients who participated in a

minimum of 150 minutes/week of moderate to high intensity exercise exhibited greater postoperative weight loss at 6 and 12 months after gastric bypass. There seems to be no specific consensus in how exercise is measured nor is there a baseline norm in which to describe what is meant by a physically active individual. There is much variation in this description. For example, some studies suggest at least 30 minutes of physical activity 3 or more days per week while others require 20 to 200 minutes per week, and still others specify the activity as endurance sports and walking (Bueter et al., 2007, p. 1608; Hernandez-Estefania et al., 2000, p. 160).

A suggested definition of exercise for the bariatric population is still being sought. All areas of the exercise prescription are relevant in that finding a frequency, intensity, duration, and type of exercise that is universal for this target population would be ideal. Moreover, there is no agreed upon tool that has been widely accepted in which to measure physical activity in bariatric patients, but the International Physical Activity Questionnaire has been regularly used within the literature. However, technological advances may allow researchers to better assess patient behaviors by minimizing subjective recall on the part of the patient (Thomas, Bond, Sarwer & Wing, 2011). By using such devices as accelerometers and cell phones, patients' physical activity could be measured more objectively.

Maintaining a physical activity regiment is important in the postoperative bariatric population not only for continued weight loss but for quality of life when assimilating back into one's activities of daily living. Incorporating some form of physical activity prior to the surgery might help patients establish more healthful behaviors leading up to their surgery, which could mean that better outcomes in the postoperative phase of surgery are possible. Anything that might impede a patient's progress before surgery or after surgery should be discussed with a

clinician to ensure better compliance postoperatively. If patients actually improve upon weight loss, they may be more apt to see the efficacy of physical activity and make more prudent choices that include regular exercise into their postoperative routines. Researchers posit that exercise appears to be an important factor in achieving successful weight loss in the bariatric population for both the preoperative and postoperative phases and may be even more important in regard to weight loss maintenance (Donnelly et al., 2009; Jakicic, 2002; Wing & Phelan, 2005).

### **Support Group Attendance**

Support group meetings are viewed as an important link to a patient's success following bariatric surgery (Orth, Madan, Taddeucci, Coday, & Tichansky, 2008). The ASMBS formed the Bariatric Centers of Excellence initiative with the goal of providing an environment that fosters supervised support groups through the Surgical Review Corporation for bariatric patients. As of July 1, 2007, the support group meetings make certain that there are qualified professionals who preside over all support group meetings (Orth et al., 2008). The support group meeting has the scope to assist patients with nutritional and lifestyle changes as a result of their surgery (Marcus & Elkins, 2004).

Prior research has indicated that support groups have proven to be a gateway between patients and their peers by facilitation and assistance with their weight loss regimes (Glinski et al., 2001). In the postoperative phase, including support groups as an intervention provides efficacy for patients and for their clinicians according to Algazi (2000). Algazi devised the following seven elements in one of her case studies representing what she calls an "exemplary session which incorporates the elements necessary for effective after-care" (p. 186). The

elements are intended to provide insights for those who treat bariatric patients and include the following areas:

1. Encouragement for compliance and praise for success.
2. Education about life after surgery, including nutrition, exercise, and dieting techniques.
3. Identification of problems.
4. Identification and development of new kinds of self-nurturing.
5. Participation in a forum where others really understand the challenges and difficulties associated with change, even when the change is for the better.
6. Creation of a safe harbor where patients can bring spouses, parents, significant others so that they may also understand, encourage continuing success, and recognize their own personal issues related to the major changes that they are also experiencing with their loved one.
7. Opportunity for curious potential patients in the community to come and learn from the experts in an atmosphere of true caring and concern (Algazi, 2000, p. 186).

In a group of gastric bypass patients (Orth et al., 2008), it was found that those who attended support group meetings lost more weight than gastric bypass patients who did not attend postoperative support group meetings. The investigators revealed that geography and time spent enroute to the support group did not adversely affect support group meeting attendance. Interestingly enough, Orth et al. (2008) conclude that other factors are in play in terms of support group meeting attendance such as family obligations and the patient's commitment as to whether attendance at support group meetings is needed. Further, Orth et al. (2008) suggest that other factors might bring forth consistent attendance such as flexible times for the group meetings; discussion of food, diets, and weight loss; food samples; helpful topics; physician's presence;

reminders; something new at each meeting; structured discussion of current or personal issues; and weekend meetings.

Psychosocial factors involved once the patient is postop can impact compliance and subsequent weight loss at support group meetings (van Hout et al., 2003). Sometimes poor eating habits ensue once the patient is postsurgery. Patients would be well served to implement continuing education and employ healthy food options to ensure their success postoperatively.

A prior study involving bypass patients revealed promising weight loss for those who participated as opposed to bypass patients who did not attend a support group (Song et al., 2007). Another study found a trend of greater weight loss in bypass patients who took part in support group meetings versus those who did not (Hildebrandt, 1998). Support group meetings seem to work well not only in gastric bypass patients but also in those who receive LAGB. The literature reports optimal decrease in BMI for those who take part in support group meetings (Elakkary & Gazayerli, 2004).

Kaiser, Franks, and Smith (2011) have conducted most recent large-scale studies examining the relationship between LAGB patients who have attended support group meetings and weight loss status. In comparison to previous studies concerning gastric bypass, Kaiser et al. (2011) found LAGB patients to have a relationship between support group attendance and weight loss (Elakkary et al., 2006; Orth et al., 2008; & Song et al., 2008). The results demonstrate that frequent attendance at support group meetings by LAGB patients' yields improved rates of percentage excess weight loss 1-year postop in contrast to intermittent attendance or nonattendance. The authors contend that future researches should examine new and emerging trends of support such as telephone or Internet-based groups as a means of comparison to the face-to-face support group approach (Kaiser et al., 2011).

Future research is needed in order to fully examine the aspects most central to a successful support group meeting. Subsequent lines of research may warrant other forms of support including social networking. Clinicians should stress the significance of participating in support group meetings and patients should receive preoperative patient consultation as well as encouragement to attend support group meetings in the postoperative phase of their bariatric experience (Orth et al., 2008).

### **Postoperative Physician Visits**

Postoperative follow-up after bariatric surgery is highly dependent on the particular procedure sought out by the patient. Due to the logistics of the gastric banding procedure, band adjustments are required, and therefore follow up after LAGB may yield an even greater impact on weight loss as compared to gastric bypass (Shen et al., 2004). These researchers posit that because weight loss is almost always assured in bypass patients, there is not much cause for return to the surgeon's office for postoperative follow-up (Shen et al., 2004). El Chaar et al. (2011) also looked at two groups of patients, those who had LAGB and those who had laparoscopic RYGB and factored in compliance to appointments. These investigators defined compliance as to the frequency of missed appointments even those that needed to be rescheduled. Results indicate that missed preoperative appointments led to lower postoperative percentage excess weight loss for LAGB patients but not for laparoscopic RYGB patients. Going forward, implications for studies dealing with compliance might hinge upon the fact that patients will need to exercise increased compliance if they choose LAGB as compared to laparoscopic RYGB.

Unwillingness to comply with physician follow-up is cause for concern in the bariatric patient and could lead to postsurgical complications (Poole et al., 2005). Researchers have

studied various patient demographics to ascertain which ones may be predictive of weight loss success. Wheeler et al. (2008) found that patients were more likely to follow up with their physician if they were an older patient, if their status was single, and if they were currently working. Conversely, predictor variables leading to fewer adherences to appointments centered on if the patient had to pay for each follow-up appointment out of pocket and if the patient had an increasing BMI.

In a study focused on gastric bypass patients, investigators looked at travel distance, age, and gender as factors in follow-up visit compliance. Depending on a patient's proximity to their surgical center, travel distance was not found to affect the initial follow-up appointment nor did it impact the 3-month or 12-month appointment (Lara et al., 2005). However, these investigators found that the 6 and 9-month marker affected compliance. Ironically, men fared better than their female counterparts at their 12-month postoperative visit.

In further research conducted on gastric bypass patients, Gould et al. (2007) reported that frequent adherence to postoperative clinic visits have proven to impact weight loss 3 years out as opposed to those who are lost to follow-up. Their results point to longer duration of follow-up visits as more definitive in order for better weight loss outcomes. Although some studies report 1-year follow-up time frames, these authors suggest that perhaps this is not a long enough window of time. These researchers cite lack of insurance coverage as an added issue in regard to patients staying compliant to physician follow-up visits.

Guidelines from the International Federation for the Surgery of Obesity and the ASMBS both urge follow up for LAGB patients within a 12-month postoperative period occurring regularly every 3 months (Fried et al., 2007; Mechanick et al., 2008). Patient follow-up may include ancillary members of the bariatric team in addition to meeting with a bariatric surgeon.

The composition of the bariatric team includes mental health experts, nurses, exercise physiologists, and registered dietitians (Singhal, Kitchen, Bridgwater, & Super, 2010). As nutrition professionals on the bariatric team of allied health personnel, registered dietitians serve expansive roles with patients and can assist surgeons in the postoperative patient clinic visits by allocating more time in which to spend talking to patients as compared to surgeons (Cowburn & Summerbell, 1998). With an increasing amount of patients seeking bariatric surgery, the use of ancillary personnel such as a registered dietitian may prove to be pivotal if resources are scarce and access to surgeons is difficult.

Longitudinal studies may help to provide a blueprint of long-term weight loss due to compliance to physician follow-up but are a challenge to capture within the literature. Unfortunately, results of patients who fail to follow up with their physicians are unknown (Harper, Madan, Ternovits, & Tichansky, 2007). These investigators found that a sizeable patient pool ignores follow-up care, particularly those who are postop LAGB unless reminders are given by their bariatric team (Harper et al., 2007). Lastly, this study theorized that compliant patients see greater weight loss compared with those that are not compliant with follow up (Harper et al., 2007).

There is much variability regarding follow up in long-term results within the LAGB population. A concise definition for “lost to follow up” has not been offered (te Riele et al., 2010). It is proposed that studies look at multiple end points in order to establish weight loss outcomes for follow up instead of at one point within a 12-month window. Subsequent studies alluded to the fact that the bariatric team should make strides to decrease the amount of patients who are lost to follow up in the effort to boost success rates (te Riele et al., 2010)



Long-term follow-up with regard to surgical weight loss has been written about in the obesity literature leading to a period of up to 12 years but studies have been considered miniscule in the United States (Favretti, Ashton, Busetto, Segato, & De Luca, 2009). Interestingly enough, most patient follow-up data have been seen in European bariatric patients as they appear to be more committed to keeping their postsurgical appointments. This is due in part to their national health service and its ability to monitor individuals who remain stationary in a smaller geographical location (Favretti et al, 2009; Garb, Welch, Zagarins, Kuhn, & Romanelli, 2009). American studies as compared to European studies show that 50% of the U.S. bariatric population has follow up as opposed to almost 100% follow-up in Europe (Favretti et al., 2009; Garb et al., 2009).

### **Summary**

There is a significant amount of literature today that addresses obesity research. Bariatric surgery is now common both in the United States and abroad and is considered to be a feasible treatment option for patients with morbid obesity. Weight loss maintenance and the resolution or amelioration of comorbidities has been established. Obesity surgery is considered to be a last resort when it comes to weight loss. However, with regard to morbid obesity, it may be the most realistic measure for the patient to consider. In order to be a candidate for bariatric surgery, one must meet stringent guidelines. Like any surgery there is always a risk for mortality and morbidity. As such, if all conventional weight management strategies have been exhausted, then the surgeon meets with the patient to discuss the surgical procedure and the ramifications involved postoperatively.

Much of what is known is based on research of female patients. The question remains, what are the experiences and perceptions of behavioral factors that contribute to successful

weight loss in male bariatric patients? In a qualitative study from Hwang et al. (2009), the authors suggest that clinicians should anticipate gender differences when discussing weight loss with patients. Hwang et al. found males were more likely to talk about their unsuccessful weight loss, disclosing medication usage or other health conditions impacting exercise whereas females expressed concerns about diet-related matters.

Researchers have noted the need to examine other behavioral factors in order to fully ascertain the surgical outcomes of the patient (Kaly et al., 2008). Prior to surgery, comprehension on the part of bariatric patients, their perceptions, expectations, fears, and difficulties have rarely been studied (Engström, Wiklund, Olsén, Lönroth, & Forsberg, 2011). In a recent study, da Silva and da Costa Maia (2012) examined how obese individuals characterize their body, their outlook, and treatment options. When given the chance to expound on their life journey before surgery, their responses reflected three main categories: obesity, eating behavior, and treatment. These conversations allowed for representations of their experiences, beliefs, feelings, and thoughts about obesity (Da Silva & da Costa Maia, 2012). The authors believe the emergent themes that resulted help to explain the patients' perceptions about their ordeal living with obesity as well as postoperative revelations.

Compliance with monthly evaluations is paramount for the patient but often becomes an obstacle and thus further contact with the bariatric team is more than likely prematurely halted. Continuous follow-up may deter patients who are unable to comply with such recommendations when it comes to making a choice for a particular type of bariatric surgery, namely LAGB. One of the major barriers that one may face is the fact that they are unable to pay for the continued visitation with the bariatric team. It is hoped that insurance carriers will universally provide

coverage for such visits in the near future which would provide an optimistic outlook for continuous contact with the bariatric team postoperatively.

Albeit weight loss following bariatric surgery is an end result, long-term status and patient compliance with postoperative behavioral modifications for eating behaviors and physical activity and their impact on weight loss is still not well understood (Elkins et al., 2005). It is important for patients to be aware of the many factors involved in achieving successful weight loss through the bariatric experience. As such postbariatric patients need to realize that the surgery does not lead to a cure by itself. Upon postoperative status, patients can still gain weight, be at risk for other comorbidities, and live an unhealthy lifestyle. Research shows that failure to comply with behavioral adjustments postoperatively is common, with lack of physical activity ranking as one particular area of concern (Flegal, Graubard, Williamson, & Gail, 2005).

Patients who decide on bariatric procedures should have designs on remaining a patient for the rest of their life. Long-term follow-up with band fills or check-ups by the surgeon must be made a priority. Physical activity must be a constant in the lives of the bariatric population. Energy balance is best maintained by caloric expenditure and proper fueling of the body. Eating behaviors must espouse a particular milieu that is conducive to proper diet and sound consumption which can be fostered by the experience of dietetic professionals to aid in both the preoperative and postoperative phases. Support group attendance in the preoperative phase is recommended as this will establish a connection with others who are experiencing the same weight loss challenges before the advent of the procedure. Postoperative attendance at support group meetings will immerse the patient in a population who will continue to seek out their weight loss goals by reaching out and networking with those who can identify with the immense challenges of weight loss efforts.

Males are increasingly under-represented within the bariatric literature and as such further studies need to seek out male participation so that subsequent lines of research can better identify these men who may need referral intervention in order to ensure consistency with females who undergo bariatric surgery. Available data on men who undergo weight loss surgery are incomplete (Farinholt et al., 2013). These data suggest that only 15%-30% of men are included in studies within the literature. One theory proposed on the stark contrast in males who receive bariatric surgery relative to their female counterparts is the notion that men view weight loss as less masculine (Sabinsky, Toft, Raben, & Holm, 2007). Moreover, Holm and Mohl, (2000) view men's reluctance to weight loss as a social norm.

Aside from male perceptions about losing weight, the public health sector has been less responsive to targeting treatment and prevention programs geared toward men (Sabinsky et al., 2007). Sabinsky et al. contend that studies have shown men to be more concerned about effectiveness and performance in the workplace rather than placing concern into leanness or emphasis on health. Men typically access the health-care system later in life and with less frequency, whereas women access clinicians more often for annual wellness exams.

Lastly, the mandatory need to identify patient characteristics for those seeking bariatric surgery and to comprehend the struggles, expectations, and difficulties of these individuals is something that needs further research and at present is lacking within the bariatric literature (Da Silva & da Costa Maia, 2012). Being that the aforementioned study dealt with the experience of bariatric surgery from the stand point of preoperative candidacy, this researcher's study looked to address these same phenomena when adjusting to life after bariatric surgery.

### **Chapter 3. Methodology**

The purpose of this study was to examine the experiences and perceptions of behavioral factors that contribute to successful weight loss in male bariatric patients. There has been little qualitative research concerning behavioral factors associated with successful weight loss in patients undergoing bariatric surgery, especially for male patients. This study employed a qualitative research design in which in-depth interviews were conducted to explore the experiences and patterns of behavior contributing to successful weight loss.

#### **Study Design**

The central research question guiding the study design and implementation was: What are the experiences and perceptions of behavioral factors that contribute to successful weight loss in male bariatric patients? Qualitative research focuses on gaining an in-depth understanding of social phenomena from the perspective of the participant. As noted by Maxwell, “The strengths of qualitative research derive primarily from its inductive approach, its focus on specific situations or people, and its emphasis on words rather than numbers” (2005, p. 22). Further, Maxwell described five intellectual goals for which qualitative studies are especially suited including:

1. Understanding the *meaning*, for participants in the study, of the events, situations, experiences, and actions they are involved with or engage in.
2. Understanding the particular *context* within which the participants act, and the influence that this context has on their actions.

3. Identifying *unanticipated* phenomena and influences, and generating new grounded theories.

4. Understanding the *process* by which events and actions take place.

5. Developing *causal explanations*. (Maxwell, 2005, p. 22).

The aforementioned goals are reflected in the current study as a result of the interviews that helped to reveal meaning and context into how the participants arrived at their decision to undergo bariatric surgery. Secondly, the researcher asked probing questions to help further understand the preoperative and postoperative process and the impact of weight loss success. Lastly, explanations as to the participants' success were generated with emergent themes.

Because the researcher focused on one surgical practice, a case study design was used in this research. Yin (2003) described that “case studies are an appropriate design when the researcher is interested in questions of when, how, or why and when the researcher has little control over events, or the focus is on a contemporary phenomenon within some real-life context” (p. 13). The current study focuses on obesity in males and surgical intervention with resultant weight loss. This major health issue aligns with an aspect of Yin's criteria of a “phenomenon with real-life context” (p. 13) in that it has an impact on the health of today's society. Yin (2003) posits that the evidence for conducting case studies has not been well developed and can be challenging for researchers. Utilizing qualitative research designs provides for what Schwandt (2001) calls the “activity of making sense, interpreting, or theorizing data” (p. 6). This study sought to uncover the how and why of the challenges and experiences from the participants' perspective. This case study examined male participants' experiences and perceptions of behavioral factors that contribute to successful weight loss postoperatively. This study sought to learn from the participants and to obtain a better sense of their weight loss

journey. By asking exploratory questions in order to capture relevant and shared experiences postoperatively, the researcher was able to address how and why eating behaviors, physical activity, support group attendance and physician follow-up contributed to successful weight loss.

### **Participants and Recruitment**

One of the most important facets and unique characteristics of qualitative research, and specifically case study designs, is the selection of who is to be studied (Stake, 1995). To date, the experiences of female and males who have undergone bariatric surgery have not received equal attention in the bariatric literature. The following inclusion criteria were used for participant recruitment and selection: male patients who had gastric bypass from a regional hospital within 2011-2014 and who were 12-months post-surgery. The rationale for choosing this 4-year time span was suggested by the surgical practice in an attempt to capture the likelihood of what patients would best remember about their weight loss experiences within a manageable time frame. As such, the goal was to be able to allow the participants to describe their experiences with as much detail as possible and to avoid too much of a gap in time that might make it more difficult to remember these experiences with weight loss.

Miles and Huberman (1994) advanced 16 strategies for purposeful sampling including criterion sampling which holds that all cases meet a particular criterion (p. 28). For example, in the current study, inclusion criteria for the participants included having achieved weight loss success as defined as at least 50% excess weight loss. Creswell (1998) further posited that criterion sampling works well when all individuals studied represent people who have experienced the phenomenon—in this case, those who had completed physician visits 12-months postsurgery in addition to documented weight loss.

In this study, male patients were recruited from a database of existing patients at a surgical practice in Richmond, VA. The surgical practice sees about 20 cases per year on average. For example, there were approximately 20 total procedures from the years 2010 to 2011. Also, the number of patients undergoing gastric banding and those receiving gastric bypass surgeries were the same during this time. However, from 2012-2013, the surgical practice had one male who received a gastric band and 18 males who underwent gastric bypass. Due to the limited number of gastric banded patients as a consequence of the steady decline in performing this procedure, the researcher had a much greater likelihood of recruiting potential participants from those undergoing the more popular gastric bypass procedure. A total of 32 males underwent gastric bypass from 2011-2014, based on this number and accounting for non response a target sample of 10 participants was determined.

### **Recruitment Procedures**

The recruitment stage of this study was conducted with the help of the bariatric database manager of the regional hospital who provided a list of potential patients to the bariatric program coordinator who then sent out e-mails with an attached recruitment letter to prospective patients interested in participating in this experience. Recruitment letters for the pilot study and the actual study can be found in Appendixes A and B. Patient demographic information can be found in Table 1. A total of 10 males agreed to participate and all, but one were Caucasian. The majority of the participants were married with varying levels of baseline weight from 266 to 465 pounds. The participants in this study had some comorbidities prior to undergoing gastric bypass. All but one participant had hypertension. Three of the participants presented with diabetes and only two of them used oral diabetes medication to manage the condition. These



Table 1

*Participant Demographics*

Name	Relationship status	Race/ ethnicity	Pre-surgical weight (lbs.)	Age	BMI
P1	Married	Latino	300	36	53.8
P2	Married	Caucasian	356	63	43.9
P3	Single	Caucasian	313	30	39.6
P4	Married	Caucasian	465	42	49.6
P5	Married	Caucasian	347	50	46.1
P6	Divorced	Caucasian	368	51	46.5
P7	Divorced	Caucasian	327	57	43.8
P8	Married	Caucasian	266	60	32.7
P9	Married	Caucasian	345	65	37.5
P10	Divorced	Caucasian	334	64	42.1

three individuals were not on insulin. Almost half of the participants had high cholesterol and the majority had sleeping difficulties such as sleep apnea. The age of the participants was diverse and ranged from 30 to 65. The majority of the study participants were employed and worked in the health care, education, and business fields and two were semiretired. All of the participants carried health insurance.

**Data Collection**

**Instrument development and pilot.** A semi-structured interview approach was used which allowed participants to provide an in-depth description of their experiences and

perceptions of importance of behavioral factors affecting weight loss. According to Yin (2003), one of the most important sources of case study information is the interview. Becker (1998, p. 58-60) further recommends that the interviewer play dual roles simultaneously which involve satisfying the needs of the researcher's line of inquiry while putting forth friendly and nonthreatening questions within the process. Lichtman (2010) suggests a myriad of questioning strategies and routes including general introductory questions that acquiesce to specific examples through comparison and contrast. The interview protocol incorporated several of these approaches. For example, one of the approaches was to ask participants to describe their health status before surgery.

A pilot of the interview protocol and recruitment procedures was conducted in preparation for the full study. The interview protocol was piloted with two females. Females were used to pilot the measure due to the limited number of males in the participant pool as the goal was not to deplete potential participants for the actual study. According to Yin (2003), the piloting process can help with refining the lines of questioning and the study procedures to be followed.

The pilot interview protocol can be found in Appendix C and revisions were made to the protocol based on the interviews to enhance the clarity of the questions and encourage more detailed responses. Based on the first pilot participant's response to questions about levels of physical activity, questions were revised to encourage more descriptive rather than yes or no responses. However, by adding the language about how the participant is active, it provided more information about the types of activities they engaged in as well as how often. With regard to the question on eating behaviors, by adding the food groups' language to this question, it helped the participants to think in terms of dairy, grains, meats (proteins), vegetables and fruits

and facilitated more extensive responses. A change was also made to include the word snacks when further asking about eating behaviors. Due to the nature of weight loss surgery, patients incorporate snacks as part of their food regimen so by limiting the question to meals, this could limit the responses provided by the study participants.

The initial question about how the participant felt prior to surgery needed adjustment to the sequence of the sub-questions by asking them one at a time instead of asking them concurrently. This change helped the participants provide a more focused response and limited the cognitive load required to answer the question fully. The interview protocol also included probes and follow-up questions to help encourage the participants to expound upon their answers to better afford the researcher with a deeper understanding of their perceptions and experiences on the impact of behavioral factors on successful weight loss. The revised participant protocol can be found in Appendix D. In terms of the behavioral factors including eating habits, physical activity, support group attendance, and physician follow-up, the following questions illustrate the protocol framework:

1. How has your appetite changed since the surgery?
2. How does physical activity impact your activities of daily living?
3. Why are support groups important to you post-surgery?
4. What are your feelings about the follow-up appointments with the surgeon?

**Full study data collection procedures.** After completion of the pilot study, the researcher implemented the previously described recruitment procedures, and scheduled a time to conduct the interviews according to each participant's availability. Before the interview, all participants were assured of confidentiality and were informed of the format and structure of the interview. Each participant was provided with a thorough overview of the study and all

remaining questions were answered. Next, the researcher conducted the informed consent process.

The researcher interviewed each of the participants for up to one hour in a private classroom at a local community college. A few of the participants requested that the interview be held in their personal office due to time constraints at work and to make it more accessible and convenient. The sessions included questions on eating habits, role of physical activity and support group in terms of successful weight loss. The interview also included questions about how the participant interacted with his surgeon following surgery.

## **Data Analysis**

Qualitative data analysis is the process of systematically examining transcripts for common themes, field notes and other materials in order to report findings of the research (Bogdan & Biklen, 2007). Upon completion of the interviews, each interview was transcribed. Prior to analysis, the researcher read each of the 10 transcripts. An open coding approach in qualitative analysis allows the researcher to develop codes by reading entire passages or paragraphs or to utilize a line by line review to establish an initial coding schema or framework that can be expanded to include more specific categories or codes in the data. The researcher chose to use the line by line method when reading the transcripts and followed recommended procedures by developing first and second cycle codes to refine and make sense of the interview data to identify emergent themes (Saldaña, 2016).

**First cycle codes.** According to Saldaña (2016), first cycle codes are a starting point and are considered a more direct approach to start conceptualizing the data in ways that lead to

categories and themes. Saldaña's approach of first cycle codes are further broken down into what he identifies as seven subcategories including: Grammatical Methods, Elemental Methods, Affective Methods, Literary and Language Methods, Exploratory Methods and Theming the Data. Elemental methods are considered primary approaches to qualitative analysis and they build a foundation for subsequent codes (Saldaña, 2016). In the current study, the researcher used the Elemental Method known as *descriptive coding*. This particular coding schema is well suited for the novice qualitative researcher and can be used in a variety of forms such as interview transcripts and field notes. Saldaña defines descriptive coding as “assigning basic labels to data to provide an inventory of their topics” (p. 97). Descriptive codes are often a word or a brief phrase such as a noun and are applied to the interviews as part of the descriptive coding process. Table 2 provides some examples of first cycle descriptive codes that were used in this study. It should be noted that descriptive coding is also referred to in the literature as topic coding, which aligns to research conducted by Wolcott. Wolcott (1992) described a 3-stage approach to analyzing data including description, analysis, and interpretation which are all part of the present study.

**Second cycle codes.** Saldaña describes this type of coding as more “challenging” due to the amount of classification, integration, and synthesis. The process of second cycle coding serves as a transition from first cycle codes in that it helps to condense and refine the data segments. The goal of second cycle is to develop categories and themes from the pool of first cycle codes. Second cycle coding can involve different methods and in this study, the researcher used the method known as *pattern coding*. Saldaña describes pattern coding as a way of building on the initial segments of first cycle coding and further group these segments into a smaller number of categories, themes, or concepts. After generating a list of the first cycle codes,

similarities within the data set were identified in order to further condense them into second cycle codes. The researcher posited that the preparation before surgery and after surgery by establishing best practices for surgical intervention like avoidance of alcohol and a mental commitment to the surgery, were indicative of the Pattern Code, *Lifestyle changes* which eventually became a subcategory. Once the entire coding process was complete, categories and subcategories were formed and themes emerged which are presented in Chapter 4.

### **Strategies for Ensuring Credibility in Qualitative Research**

Krefting (1991) describes the nature of credibility in qualitative research by highlighting Guba's model of trustworthiness of qualitative research. The model is based on the identification of four aspects of trustworthiness including truth value, applicability, consistency,

Table 2

*First Cycle Codes*

Codes	Example text segment	Pattern code
Family history	"Well, I have a family history of obesity. My grandfather, my father, and then myself. And, of course, growing up and being an obese individual—I've tried multiple avenues to lose weight."	<b>Quality of life</b>
Failed lifestyle attempts		
Lifetime struggle		
No choice		
Weight loss cycling		
Pivotal point		
Cultural component	"Mother was a Latina, Hispanic: Clean your plate type person. Eat everything you have got because there are starving people around."	<b>Locus of control</b>
Overweight parents		
Busy parents		
Emotional eater		
"Clean your plate"		
Sedentary		<b>Unhealthy choices</b>
Fast food		
Nocturnal eating		
OCD with food	"I found in my personality, that I have an obsessive-compulsive component--like, 'I've got to have this!' So, it was 'I've got to have this particular loaf of bread,' and 'I've got to have it with this amount of butter.'"	
Drinking		
Southern foods		

Table 2 - continued

Codes	Example text segment	Pattern code
Debilitated		<b>Physical state</b>
Diminished breathing	"I was probably breathing at 20% capacity."	
Sleep apnea		
Achy		
Deconditioned		
Failed stress test		<b>Affect</b>
Worthless		
Disgusted		
No self-pity		
Ready for surgery	"I was excited to have surgery. I went into it with a very positive attitude. As soon as I met the doctor, I knew he was the guy for me."	
Little fear		
Optimistic		
Unrealistic thoughts		<b>Introspection</b>
Thoughts of his funeral	"With all surgery there is a risk, so I honestly just being me and the 'prepper' and the planner that I am, organizationally—I went and created a new will."	
Mental preparation		
Defeatist mentality		
Negative perception		
Regression to the "fat kid"		
Childhood memories		
Considered counseling		
Self		<b>Interpersonal relations</b>
Bariatric nurse		
Surgeon		
Gym members		
Church parishioners		
Colleagues		
Male friends	"I have a few men in my life that I have accountability with me and I with them. And they've been very positive. So I've had some awesome support throughout."	

Table 2 - continued



Codes	Example text segment	Pattern code
100% more active Gym member	"And then my heavy days—which are 3 days when I do the cardio plus the machines in the gym."	<b>Exercise regimen</b>
Use stand-up desk More focus on physical activity Walker		
Small portions 30% protein Eat constantly Consume food (PM) Eat same foods	"I normally eat the same thing every day. I'm fortunate that I don't get sick of stuff. I've got my food log."	<b>Nutritional considerations</b>
No large drinks Use eating schedule Use food log		
Time constraints Meeting location Being recognized Nothing gained	"I don't feel I need them because I work in a healthy environment. I work around 18 to 22 elite athletes every day."	<b>Barriers to support</b>
Averse to meetings		
Getting recipes Seeing the R.N. Making connections Supporting others Obtain information	"I would go to listen to the nurse."	<b>Benefits to support</b>
Lifelong commitment Starts habits preop Mental commitment Abstain from alcohol Manage success	"Follow what they tell you to do and believe it. You know you have to buy into it. You have to literally give 100% of what you're buying into. If you do, you will be successful."	<b>Lifestyle changes</b>
Follow post-op plan		

and neutrality. Through qualitative study, truth value is often derived from individual experiences as they unfold and are perceived by informants (Sandelowski, 1986). Lincoln and Guba (1985, p. 301) termed this credibility. Establishing credibility helps to ensure rigor and generalizability (transferability) of all qualitative inquiries (Denzin & Lincoln, 2003). A few of Krefling's (1991) recommended strategies are most applicable to this study and include field journaling and memos.

**Field journaling.** Keeping field notes allowed the researcher to describe and interpret his behavior and experiences when meeting with participants in the study. As recommended by Guba and Lincoln (2005), the journal was kept throughout the research process and included three types of information: the daily schedule; logistics of the study and methods log (in which decisions about methods and their rationale were described); and thirdly, information that reflected the researcher's thoughts, feelings, ideas, and hypotheses generated during the data collection process. The field journal also included questions, problems, and frustrations concerning the overall research process. This process helped to make the researcher aware of any potential biases or preconceived assumptions and assisted with enhancing credibility (Krefling, 1991). It should be pointed out that there are a few distinctions within field journaling. Bogdan and Biklen (2007) describe descriptive field notes as a more objective account of what happened in the field which is a more lengthy process whereas reflective field notes are a more subjective account of events that occurred in the field or setting. There is a second component to the reflective field notes which are described by Bogdan and Biklen (2007) as observer comments denoted as (OC). The passage that follows is an excerpt from participant three (P3) as part of a reflection based on his feelings following his gastric bypass surgery and my written comments as the observer. He described a vivid account of how he felt 24 hours after

his gastric bypass surgery and he was brutally honest in that he felt like “somebody should take him out back and shoot him.” (P3): He was extremely uncomfortable in the wake of this surgery. (OC): I was aghast at his statement of wanting someone to take his life. I wonder if he had suicidal thoughts before his surgery on the account of being morbidly obese and how he chronicled his lifestyle.

**Memos.** According to Bogdan and Biklen (2007), memos are part of the field notes and as such can be used to help develop connections to what the researcher is learning during the study implementation. Memos help the researcher to understand the topic, setting, or study, not just as a way of recording or presenting an understanding that was already reached (Maxwell, 2005). Maxwell suggests that memos allow one to engage in serious reflection, analysis, and self-critique. In the present study, the researcher organized the memos in a systematic, retrievable form, so that observations and insights could be easily accessed for future examination. Some of the memos developed as part of the study implementation were adopted to facilitate self-reflection known as the what?, so what?, now what? model from the Mary Jane Underwood Stryker Institute for Service Learning (n.d.). This model allowed the researcher to document and re-examine the implementation to better establish a connection among the study findings and the participants’ experiences and views.

### **Delimitations**

Conducting this study based on 10 patients from the same surgical practice in Virginia may limit the applicability or transferability of the study findings to other practices and geographic areas. Secondly, when it comes to surgical procedures other than gastric bypass, recent studies are now exploring the newest and latest technique of sleeve gastrectomy which is

receiving increased exposure in the bariatric field. On the converse, a significant limitation is the fact that a smaller number of males undergo bariatric surgery as compared to females.

**Institutional Review Board Statement**

This study met all guidelines set forth by the Virginia Commonwealth University Institutional Review Board (IRB) for academic research. The research protocol was reviewed, approved and followed. The IRB number for this study is HM20005126.

## Chapter 4. Findings

### Introduction

The purpose of this chapter is to present the results of a series of face-to-face interviews. The results help to explain participants' perceptions and experiences related to eating behaviors, physical activity, support group attendance, and physician follow-up contributions to successful weight loss in male gastric bypass patients. After further reflection, several themes emerged from the interviews and are organized along the continuum of presurgery, transition period (immediately following surgery), and postsurgery (1 year out). An example of this continuum can be seen in Table 3. These subcategories are assembled within their respective categories and include: quality of life, locus of control, unhealthy choices, physical state, affect, introspection, interpersonal relations, exercise regimen, nutritional considerations, barriers and benefits to support, and lifestyle changes.

The categories stem from the trajectory that the participants' described in their weight loss journey beginning with their initial health (presurgery) resulting in gastric bypass and to their explanation of weight loss during their first year postsurgery. The researcher then progressed to several subcategories based on the coding process in which themes emerged. For example, participants expressed multiple concerns about how obesity had affected their life and what the impact would be on their longevity which generated the theme of *concern for well-being*. The themes that emerged from the aforementioned subcategories are as follows:

Table 3

*Categories, Subcategories, and Emergent Themes*

Category and subcategory	Theme	Illustrative quote
<b>Presurgery:</b> Quality of life	Concerns for well-being	"I'd been large all my life and getting older, it became the time to have it done."
Locus of control	Concern for powerlessness	"Eat what's on your plate and whatever's on your plate, you better finish."
Unhealthy choices	Concern for will lack of will power	"Just less activity, and more food, eating late at night, snacking, eating bad choices, fast food and activity level really slowed down after I got out of high school for awhile."
Physical state	Physical health concerns	"I was awful. I couldn't tie my shoes without coming up for air. I had no stamina whatsoever."
Affect	Emotional health concerns	"Just down all the time. Looking in the mirror-- just a feeling of worthlessness."
<b>Transitional period:</b> Introspection	Psychological health concerns	"Is this going to work?" And, "God, I hope I have no complications."
<b>Postsurgery:</b> Interpersonal relations	Social health concerns	"I think the most critical thing, honestly, has probably been my relationship with the bariatric program coordinator and the doc."

Table 3 - continued

Category and subcategory	Theme	Illustrative quote
Exercise regimen	Influence of physical activity	"I climb stairs. I go to the gym maybe two to three times per week, some weeks are worse than others--meaning that I don't have time."
Nutritional considerations	Healthful diet	"The dietitian that I saw at the surgeon's office told me that I needed to focus more on protein, and to supplement my eating with protein shakes."
Barriers to support	Nonattendance at support group meetings	"Now the only reason I don't like going to support groups is I knew it would just be a matter of time before someone in our small community would show up there and, 'Oh, that's how you lost. . .'"
Benefits to support	Attendance at support group meetings	"And what I like about support groups is more times than not, I'll walk away with a nugget. And those are always good. Do I walk away with multiple nuggets? No, but once in a while I'll pick up a food, or whatever, something that I'll come away with."
Lifestyle changes	Notions of long-term success	"I honestly believe that if you are going to be successful, you need to have regular meetings with a psychologist. Not just the one preoperative thing. I think to be long time successful, that there needs to be a doctor or a counselor that you go to see one-on-one and it's a permanent coach in your life."

*concern for well-being, concern for powerlessness, concern for lack of will-power, and concerns for (physical, emotional, psychological and social health), influence of physical activity, healthful diet, nonattendance and attendance at support group meetings, and notions of long-term success.* Examples of illustrative quotes taken from the participants appear next to the themes. These quotes illustrate how they felt before surgery, their transition to the surgery and finally how they felt 1 year after their surgery.

### **Presurgery**

**Quality of life.** The pre-surgical phase offers a perspective about the participants' feelings, thoughts, and experiences during the early preparation phase before the scheduled surgery and in some instances revealed a sense of defeat over their weight. When asked about why they chose to have gastric bypass, the theme that emerged from the participants was the concern for their well-being. Other examples of why the participants chose to undergo surgery included responses such as improved health, deconditioned, failed traditional lifestyle attempts, lifetime struggle with weight loss, heart and joint issues, pivotal point, no choice due to immense weight, and obese since childhood. Implicit in their responses was the notion of the number of years living as an obese individual and the direct impact of living those years in ill health. Participants in particular described their personal and family history as primary reasons to have the surgery. Having genetic predispositions to obesity can be complex and problematic and could greatly impact an individual's well-being unless traditional lifestyle changes are made or an intervention such as gastric bypass (as a last resort) are taken. For example, one participant described his family history:

Well, I have a family history of obesity. My grandfather, my father, and then myself.

And, of course, growing up and being an obese individual—I've tried multiple avenues to



lose weight. I had lost weight, then gained it back; lost weight, gained it back.

(Participant 3)

I yo-yoed with my weight my entire life. Everyone in my family is overweight. And I'm probably the thinnest one now. Well, I know I am; health reasons and just the yo-yo.

Every diet I've been on was unsuccessful. So I looked into the weight loss right before I retired so my insurance would cover it, and I went ahead and did it. (Participant 10)

Both of these participants explained the inconsistencies with their weight loss struggles over time in terms of losing and then gaining their weight back. They also highlighted that they come from families with a history of obesity.

Depending on one's BMI, it can be extremely difficult to lose a substantial amount of weight through traditional methods such as eating behavior and physical activity especially if one is morbidly obese or even super obese. Therefore, the individual could opt for bariatric surgery as an intervention to assist with a progressively faster rate of weight loss due to the drastic restriction of food that the body is able to consume. The participants' responses with regard to repeated dieting often ended up in failure to achieve significant weight loss which ushered in their option of seeking gastric bypass.

**Locus of control.** Participants described their childhood upbringing and in particular, their habits around food and exercise. The theme that emerged here is the notion of powerlessness. Participants discussed that they had struggles with an external locus of control, which involves feeling like life events are out of their control. Geographic areas tended to play a part in food choices as southern food was mentioned, as was cultural components such as growing up in a large Hispanic family where food was a focus (Participant 1). These geographical and cultural patterns around food consumption may be ingrained early on in the

participants' upbringing and conforming to such norms could make it difficult to exercise restraint around certain foods and instead to follow the status quo. Others were resigned to eating whatever was put in front of them as parents were firm in having them eat the same foods as the rest of the family. Another example of an external locus of control was the expectation to clean your plate before playing outside. Some of the participants acknowledged that the notion of finishing every morsel of food caused them to overeat unnecessarily. This practice was followed so the participants would avoid upsetting their parents who expected that they not waste food. However, at the same time, this practice acted as a hindrance to the individual's sense of satiety. The literature reports that children should never be forced to "clean their plates," due to the variation of their daily calories as some days may cause them to be hungrier than other days (Summerfield, 2012). Others grappled with an internal locus of control (when life events are within one's control) in that they described frequent bingeing, eating for convenience, consuming sugary foods, emotional eating, overeating, and feeling like they were never full. For example, one participant described his nationality and his upbringing:

Another thing that I would also say—a big culture that I probably experienced growing up had to do with the reward response for food. So, coming from a Latin heritage or background, I think you associate food with celebration. And so, there are a lot of celebrations. So, we continuously always were having feasts for different things and whatever and that was just part of celebrating. But that also kind of morphs into another aspect of it that then you start realizing that any time something wonderful happens, or you want to feel better that you then associate that with 'Hey I need food' or, 'something that triggers that response, that makes me feel good.' (Participant 1)

Another commented, “I just overate. And, my mother and father were both big. So, it just happened” (Participant 2).

These participants differ slightly in terms of how they describe their issues with overeating. On the one hand, culture is expressed in relation to having an overabundance of food available for celebration whereas the other participant’s response is explained as simple overconsumption regardless of celebrations or culture. When describing an internal locus of control in their childhood exercise habits, participants discussed being active, possessing athletic abilities, and being multisport athletes. In contrast to how some participants described their internal locus of control, others pointed to having sedentary as well as overweight parents as their role models growing up which lent itself to an external locus of control. One participant cited having busy parents whereby he was left to make his own food choices. This account provides an interesting comparison between internal and external locus of control in that parents who were not around to prepare meals, perhaps gave increased latitude to their child. Although this individual could not control his parents’ lack of availability, he was ultimately resigned to making his own choices healthy or unhealthy. Another participant remembered having a health conscious dad. “I have two older brothers and they influenced a lot of the athletic activities and sports” (Participant 9).

They [parents] had full-time jobs and they also worked emergency services on the side. So a lot of the time, they were eating on the run so it was very convenient to grab crappy food. Not good nutritional value and I never saw them exercise. There was nothing about ‘let’s go for a walk.’ (Participant 3)

These two participants relate having siblings and parents who influenced their activity levels while growing up. Parents who modeled positive health behaviors were lacking in some

of the responses which led to lack of oversight of their food choices while growing up which often included foods with little nutrition. Further challenges existed with the family structure and the notion of finishing every ounce of food before leaving the table even though the participant may have actually been full.

**Unhealthy choices.** When asked about their weight progression, participants reflected on the process as being gradual and stemming from grade school, high school, and early to mid-adulthood (20s-40s). On the other hand, cyclical weight gain was also mentioned by the participants as moments where they were active while growing up but then life events such as divorce or major surgeries caused a tendency to put on weight at certain time frames in their life. The emerging theme here is the concern over a lack of willpower. For example, the weight gain was predicated upon such things as drinking alcohol. Self-perception also came into play as one person reported “never considering myself big.” This statement seems to suggest that this individual has a distorted view of reality as to their true weight and therefore may disregard the lack of willpower as being cause for any concern. Further causes of weight gain included fast food consumption, nighttime eating, obsessive-compulsive disorder with food, food addiction, and consumption of country foods, which was code for fried foods or sugary beverages such as sweet tea. Social constructs were also described in the context of weight gain such as feeling socially isolated and having social anxiety. Lastly, infirmity played a role in rapid weight gain as three participants reported existing anomalies, acute injuries, and back surgery. For example, the two participants’ views described marriage troubles and sedentary lifestyle and ill-advised eating habits growing up:

Marriage started going downhill and I started eating a lot. That’s when I really started adding the weight. Then, after the divorce, it just got worse. I would say it reached its

peak a couple of years after the divorce when I was going out to sports bars too often and eating the junk that's there and drinking a few more beers than I should have had.

(Participant 6)

Another participant stated:

I would say—well, I've always been heavier than everybody, stockier build. But when I went to college, my first year is when the sports stopped and college buffets were—that's what you had—so all you did was sit around and study and eat. So I had a hard time getting in anything physical. (Participant 4)

These participants reveal similar patterns in terms of turning to drinking and overeating in order to help cope with life struggles. Depending upon the situation, participants discussed lack of willpower during such time periods as the college years because of the unlimited amount of food available on buffet bars in addition to the demands of studying and a more sedentary lifestyle. Unhealthy choices also led to excessive drinking as a result of marital issues.

**Physical state.** A theme related to physical health emerged from the interviews. Before the participants were scheduled to undergo gastric bypass surgery, they described in detail their actual state of physical health. For example, they described generally feeling debilitated and miserable, having poor sleep habits leading to some diagnosed cases of sleep apnea, failure of cardiac stress tests, dissatisfaction with weight, diminished breathing, fatigue, and purposeful avoidance of exertion by adopting workaholic tendencies. Workaholics immerse themselves excessively in work at the expense of non-work activities (Greenberg, 2013, p. 395).

Two individual responses follow with the first describing the strain of being obese and how this tremendous burden crossed over into his working life. He remained sedentary at his desk for long periods of time which allowed him to avoid any major exertion.

Trying to carry the weight around. . . .Taking the stairs—there was no way I was taking the stairs anywhere. I planned my whole life around—okay what can I do to not make me feel like crap as far as not overexerting myself to the point where I'm sweating profusely—particularly in a social situation. I didn't enjoy social situations because, you know, there is ridicule out there for obese people. And, I just honestly felt—I did not enjoy life at all at that point. I poured myself into work to find usefulness but still I had all that weight. (Participant 3)

Another participant described an anomaly that had the potential to be life-threatening and another chronicles his struggles with obesity and having to function on a day to day basis:

My lungs were both collapsed because my stomach was wrapped around it. I was probably breathing at 20% capacity. I threw up every single time I ate, basically. And that's what the hernia does and you can't process food. Basically, the only way that I could process food was to lie on my left side. And so, I would really think the weight was almost secondary to the hernia in this case. But they were both bad. My knees were aching because I was overweight. So, I would say my health prior was poor. At best, it was poor. I didn't feel good. Nothing was really good. There wasn't any part of my life that I would say—well, that was happy. (Participant 5)

These two participants detailed the debilitating effects of obesity through vivid accounts of the struggle to carry on each and every day. The physical limitations of obesity make life difficult for many as affirmed by the participants in this study. Aside from the physical limits imposed on an individual as a result of being obese, having a life-threatening anomaly compounded the struggles even more necessitating the need to have bariatric surgery.

Leading up to the surgery, the bariatric protocol recommends that patients begin to prepare themselves for the surgery by engaging in some form of physical activity to help establish positive lifestyle behaviors and establish compliance toward successful weight loss outcomes. Interestingly enough, one respondent reported being active which is advantageous preoperatively as it establishes good habits that will need to be adopted well beyond the surgery.

I felt pretty good. I had been working. After the back surgery, I did physical rehab at Sheltering Arms. And then, through their recommendation I joined their fitness center. At the same place they did the rehab. So I was going there. And I was in pretty good physical condition. I was working out at least three days a week there. (Participant 9)

**Affect.** Aside from the physical limitations or comorbidities described by those who are obese, participants described their emotional readiness in anticipation of the surgery. The theme here relates to emotional health concerns. While interviewing these men, what really stood out was the depth of emotion that they revealed. The researcher found the majority of these participants as vulnerable either through reverting back to being the overweight kid or feeling that they didn't have anyone to share their feelings with. When asked how they felt emotionally, some of the responses dealt with social aspects of not feeling supported. For example, unsuccessful dating, having no girlfriend, or spousal support were mentioned as was divorce. In the more positive realm were responses such as "excited to get GB," "very little fear," "eternally optimistic," and no "self-pity." Two participants' views described reverting back to childhood memories of being overweight and remaining more positive about life:

Depressed and what failures I had, I could always put back to being the fat kid. And it just went back to that element of the psycho-social aspect of going back to being 5 years old and not being able to play or 6, 7, 8 or whatever it was when I was in elementary

school and not being able to play football with everybody because you were the fat kid.

(Participant 7)

Another participant stated:

I am and have a very positive outlook on life. Always have been, always will be, I believe. And this weight loss surgery, I didn't realize how good it was going to be for me—before I it. So, I didn't think—oh poor me. That was never my attitude. My wife had gone through it 2 years earlier. And, I supported her through it. We literally gave up sugar together 2 years prior. And so I literally was doing things to put myself in a win-win situation. (Participant 8)

These two participants seem to fall within a spectrum of positive and negative emotions. For example, the first participant takes on a more pessimistic view as perpetually seeing oneself as the obese kid even though the participant is now a man who has succeeded with his weight loss. The other brings forth a more optimistic outlook in the wake of countering his obesity. The participants in this study had compelling stories to tell and really bolstered their accounts by tapping into their emotions as if they suddenly morphed back into being the overweight kid all over again which made the discussion much more compelling. Their willingness to speak unfiltered really allowed the researcher to gain perspective as to their inner struggles throughout the weight loss journey.

### **Transition Period**

**Introspection.** The transitional period is in some cases a more subjective time period whereby the patient begins to ready themselves for the transformation of their gastrointestinal tract and all the changes associated with it immediately postoperatively. The mindset of the participants prior to surgery and immediately following surgery was very telling, and the theme



that emerged was psychological health concerns. Like any surgical procedure, routine or otherwise, one is never completely guaranteed of a particular outcome as mortality is certainly a concern as are potential problems that might arise as a result of a particular surgery. One participant indicated that he began preparation for a will in addition to funeral arrangements in case of any unintended consequences. Some of the participants started to mentally prepare themselves by undergoing one-on-one counseling prior to surgery to work through unrealistic thoughts, defeatist self-talk, negative perceptions by peers, and to help dispel the continual regression of their childhood as always being the fat kid. Only one participant acknowledged that he was looking forward to the surgery. While another, described his goal of wanting to stay vigilant when following the surgical protocol postoperatively:

Immediately following surgery—I was mostly concerned with making sure that I followed all of the rules correctly and that I didn't do anything to damage the work that had been done. As far as that goes, I think that preoccupied a lot of my focus and time. Immediately postoperatively, I was focused on sticking to the prescribed diet exactly how they told me to do it. (Participant 1)

When asked what was going through their mind immediately following surgery, responses varied from new lease on life, time to travel down the new road, it's over, and when is the weight going to come off? In addition to those revelations, some reported having very productive thoughts regarding the surgery and the need for compliance. This was evidenced by one response which expressed careful thought and consideration for selecting foods that will deliver the proper amount of nutrients for bariatric patients. This was followed up by others who described the need for exercise and walking. The latter is something that patients are expected to do after surgery as a means to help prevent blood clots from forming.

When participants were asked after their surgery if they ever felt the surgery was not a good decision, only two individuals said yes. These men explained how much work was ahead of them in changing their lifestyle habits but they were still ultimately successful with their weight loss. One individual said probably. The other seven participants gave categorical answers of no or never. Their reasons ranged from having initial reservations to feelings of strong trepidation.

The first 24-48 hours after when I was feeling like crap and wanted somebody to take me out back and shoot me, that's when I thought it wasn't a good idea. There are times, now, when I know I want to eat something, but I know I can't. Like a good steak or something. I know I can't handle it. So I think this sucks! I shouldn't have had the surgery and I would have a normal system. Sometimes, I think to myself, you know, I wish I hadn't had it. But then, when those two minutes pass your mind—then I think no, I made the right decision. (Participant 3)

The descriptions given from the participants just prior to undergoing gastric bypass and the initial post-operative recovery really encapsulated their self-talk and mindset as to their fears, trepidation and hopes of the procedure and the impact that it would have on their lives. Realizations that their newly transformed gastrointestinal system would now function markedly different gave them a heightened awareness of the concessions that must be made. Moreover, this caused some to question whether they had made the right decision and in some cases, left some room for regret albeit short lived depending upon the situation that they were in. For example, wishing they could eat a certain food or having unlimited amounts of alcohol without the repercussions of someone with gastric bypass.

### **Post-surgery Supports and Barriers**

**Interpersonal relations.** The postsurgical phase takes into account the release from the hospital and the adherence to postoperative bariatric protocols in adjusting to a new lifestyle. The emergent theme here is social health concerns. Having a deep or interpersonal connection to a person or several persons whether they are family or friends is important when navigating through challenging situations or in celebrating well-deserved successes in life. Moreover, having a strong social circle that one can associate with in which to discuss problems or concerns or to simply engage in activities with was common in the responses given by the participants. These men were asked about their types of support 1-year postsurgery and understandably enough spouse and family members were mentioned most often. Other groups included male friends exclusively, gym friends, work colleagues, fellow attendees in pre and postsurgical support groups, and fellow church members.

Eight of the participants in this study found the bariatric program coordinator to be extremely supportive early on in their postoperative phase and they considered her to be a central figure of support in the subsequent years following their initial surgery date. The surgeon was recognized as a key source of support by over half of the participants' (six out of 10) who described his bedside manner as making them feel comfortable and he also made his cell phone available in case questions arose as did the bariatric program coordinator. In one case, the ardent support of the surgeon meant so much to one of the participants that he remarked, "Finally getting to the 1-year point where Dr. Bittner says, 'Okay, now you can go out and buy a good suit.'" While one certainly expects the support of family and friends, it is quite comforting to see such an outpouring of support from dedicated clinicians such as the bariatric nurse and the bariatric surgeon.

When asked about support beyond the 1-year postoperative benchmark, participants explained that support began to wane as they got closer to their desire weight loss goals. For example,

I don't feel that I have quite the support now that I did in the beginning and that's probably because everyone thinks that I am too skinny. I think that the support early on—post-surgery—is much stronger because people understand what you are doing—that you are trying to lose weight and that this is healthy. (Participant 1)

Another participant expressed frustration with the follow-up support after the surgery. Although, follow up does not rest solely with the clinician, the participant describe making a specific request for support in the way of a postoperative club that patients can become involved with.

There needs to be a postoperative club—like that you can go out and hang out with. And I kind of mentioned that about having user groups for the young people you go through the surgery with to connect. And he said that for privacy reasons, they couldn't do that. And, I'm like, well, I'm sorry about the privacy, but people need each other. I've had one follow-up in the 2 years. Because I'm ADD, I don't think about it. I think about everything that's in front of my face right now, I need to go back and get a follow up. But I haven't. The only connection was that the bariatric nurse called me and she asked me how I was doing, and touched base and gave some counseling based on what I said. (Participant 4)

Both of these examples seem to point to varying levels of support. The first example seems to suggest a continued need for support regardless of how one looks physically. Secondly, the participant describes the need for specialized support for males in particular. Participant 4 disclosed that he continues to struggle with uncontrollable diarrhea and that he is reticent to talk

with the female bariatric coordinator about this situation. He feels more comfortable talking to other men who have experienced gastrointestinal issues.

You don't want to talk to an attractive female nurse and tell her about, you know, blowing it out on the way to work. You just don't. It's like, you know, you need a mentor. And, you need somebody that goes through it. And that mentor needs you too. My Chinese food delivery guy had the surgery. And we have become friends because he had done the surgery. And we hang out and talk occasionally, but he's struggling, too, now that he's a couple of years out. (Participant 4)

Two of the 10 participants kept their surgery confidential, especially from their family, which meant that their sources of support were more limited than others in the study. In these cases, they described the supportive roles of a roommate and in the other case, friends at the gym.

And I confided in a couple of people that know I had the surgery done. The majority of the people think that I did it through diet and exercise, which basically it is diet and exercise with the help of the bypass. The bypass was the big thing. That was the big push. And I think also motivation from my failures in the other diets. My friends at the gym look out for me. They are proud of me. They push me. They give me suggestions. And then, even though my family does not know I had the surgery, they support me and always give me a compliment about how good I look and my weight is good and you're really keeping it off this time. And that's my whole thing, is that I'm never going back. The other failures, I always went back, reverted back to my old way. I'm never going back. And I got that from Mr. Al Roker. He's got a book called *I'm Never Going Back*. (Participant 10)

Lastly, two of the 10 participants were adamant that they don't look to others for support but rather rely upon themselves.

When you say support, you know, you have to understand what I've done all my life. I played professional golf. So, I have a lot of willpower. I don't go looking for people's support, if you will. I am very comfortable with who I am. I am very comfortable with the decisions that I've made. I understand where I am—so I don't need someone to tell me I'm doing the right thing or I'm doing the wrong thing. I made the decision and that's where I go. And that's what I do—right, wrong or indifferent. That's the deal.

(Participant 2)

Well, you know, right now—come May 19<sup>th</sup> will be my second year. As in 2 years since surgery. So May 19<sup>th</sup> is coming quickly. And I'm still where I need to be—I don't want it to sound mean, but I don't NEED someone to tell me what I need to do. I know what I need to do. In my mind, if I gain weight, I will start hurting my hip. That's not going to happen if I have anything to say about it. So, my wife IS going to be my support for now and forever, but do I NEED this person to keep me accountable as far as eating? No. I keep myself accountable. (Participant 8)

With the exception of two of the participants, fostering social connections to others was important to these individuals as to their success with weight loss and even more so through engagement with the bariatric program coordinator and the surgeon. Social interactions with other men in particular who have undergone bariatric surgery were suggested as an even more helpful adjunct with regard to social health.

**Exercise regimen.** After gastric bypass surgery, the interviews revealed a range of activity levels. The theme illustrated here is the positive influence of physical activity. First,

there were those that thought that physical activity had an impact on their current weight, and others who thought that physical activity did not have an impact or that they were uncertain as to the impact that physical activity may or may not have had. Still others were sidelined with injuries or chronic afflictions which resulted in very little, if any physical activity. Lastly, one participant was forceful in their opinion that physical activity must work in concert with proper nutrition.

It's hand in hand. I joined the gym before the surgery. And I said, if I work out—I thought if I worked out like a mad man, I could eat anything I wanted to. And I was actually gaining weight going to the gym 7 days a week. I found out by listening to people, it's truly diet and exercise. Not one, not the other. It is both—hand in hand, diet and exercise. Exercise is a big part of my life now. (Participant 10)

When asked to compare their current level of physical activity preoperatively and postoperatively, the majority of the participants indicated that they were much more active after their surgery. Participant responses ranged from being sedentary in the preoperative phase to being 100% more active in the postoperative phase. The type of exercises mentioned by the participants ranged from cardiorespiratory to resistance training to leisure time activities including walking, jogging, biking, lifting weights, hiking, golfing, and gardening. One participant indicated that he could lift heavier weights preoperatively than postoperatively. He explained that this was linked to aging and the need to take safe guards to avoid injury, especially to his shoulders. Others stated that time constraints have resulted in weight gain and weight loss below expectation, since having the surgery.

Oh, God, it's night and day difference. I was 313 pounds and I struggled to get through the day and I was worn out. I'd joined a gym and I would go and do but like I said, when

you're toting around 313 pounds, it's a struggle to get there. And the social anxiety built into it as well. So it was a discourager to want to go to the gym. (Participant 3)

Similarly, the aforementioned participants described their experience in the preoperative phase with regard to joining a gym and working out. While surgical candidates are encouraged to be active prior to their scheduled surgery, the accounts given by the participants highlight the struggles in getting the motivation and having the energy to work out at the gym when carrying around a tremendous amount of weight. Secondly, one of these participants describes that it is not just the physical activity piece that is associated with weight loss, but it is also the regard for a healthy diet which was the emerging theme under the subcategory of nutrition considerations.

**Nutrition considerations.** The theme that emerged here is healthy diets. Participants discussed a variety of changes in their eating behaviors since the gastric bypass procedure: "I will not go near sugar," "grazing at work," "no packaged foods," "I use a food ledger," "I use small plates," "I use time schedules," "I never experience dumping syndrome," "I fear dumping syndrome," "It takes me half an hour to 45 minutes to eat," "I am sensitive to food textures," "I am starving all the time," "I share meals with my wife," and "I exhibit the same behaviors." For example, one participant described his prior nutrition choices as unhealthy:

Before, I was eating just crap—drive through or whatever appealed to me at the time.

Now my focus is, and I go through waves when I don't eat as well as I should. So I rely on protein shakes and protein bars to get through the day and have energy to perform.

(Participant 3)

Another participant noted that he eats "staple foods" quite frequently since his surgery and draws comparisons to certain staple foods often consumed prior to surgery:



So for example, a very typical part of my diet is yogurt or cottage cheese. I've done that since postop and that has always done it. So, I eat a lot—in fact, I should probably buy stock in Dannon® Light and Fit Greek yogurt because I buy a lot of it. I probably have two a day. And cottage cheese, about the same. That is very much a staple—as much as my—as a young Hispanic and we eat a lot of rice and beans, as much as rice used to be a part of my diet, probably cottage cheese and Greek yogurt is now. (Participant 1)

Similarly another described the influence of the surgery on their eating choices:

My stomach won't hold much now. Now you can defeat this bypass and stretch right back out. So, you have to watch it. You know when you're full. You want to eat until you are comfortably full. Then you want to stop. And that's a hard habit to break.

Because before, you know, I could eat an obscene amount of food. (Participant 10)

In addition to food, alcohol was also mentioned by the participants as having a direct impact on their lives. For example one participant disclosed that he is in recovery.

I am in recovery, so I go to two different meetings. I go to a support meeting for health practitioners, as well as AA and after that, I'm about done with all the support that I can get. It's just like hey, you all need to shut up and just move on. (Participant 7)

Another participant spoke about his realization of not being able to consume as much alcohol because of the gastric bypass surgery.

When I go to social functions, people are throwing back a drink and I can have one—and that will give me a really strong buzz. So I usually sip wine. But especially in my age group—you can't really jump out there and do all the things they're doing—because, for one I can't. You know, the eating and drinking and the time frame in between.

Two of the 10 participants have been afflicted with gastrointestinal issues, namely diarrhea. Those who undergo the surgery are instructed to refrain from drinking a beverage while consuming a meal. This guideline is an aspect of the bariatric protocol where an individual waits between one and one-half hours to ensure that she or he obtains the required nutrients from actual food without consuming liquid calories (J. Meador, personal communication, June 10, 2016) that might detract from the ultimate goal of nutrient density and a feeling of satiety. The first of these two participants appears to be something of an enigma in that he purports to follow the aforementioned protocol but is frustrated with his satiety and weight regain. However, with self-report as well as time from the surgery, statements might be limited. The other describes his trajectory of going through an unrealistic stage of the gastric bypass which he calls the “romance period” (early stage) and the need to become more attune with the realities of this surgery:

I am disappointed in the fact that I am constantly hungry. I am starving all the time. The bariatric nurse said it is because I am eating and drinking at the same time. One of the biggest problems I’ve had since the surgery—and this kind of screwed me up with the eating—is I’d have terrible diarrhea constantly, like in the morning. Like what I’ve found recently and this has actually helped me, I take Imodium regularly and that helps. I know that a lot of people go through surgery and they go through that romance period and I’ve just broken up with the romance part and I need to go into the reality phase of it. So I’ve been on my reality kick for a couple of months and I’m trying to make adjustments. (Participant 4)

Well, I had diarrhea a lot—still have it. I actually take medication to keep from having diarrhea, certainly, then. It was like, you know, I can't eat because I'm going to get diarrhea. Well, they told me my problem was I was drinking. (Participant 9)

During the interviews, participants were asked about their typical meals and food choices. Table 4 provides a summary of their responses and the typical portion size, types of foods chosen, and the number of meals or snacks consumed postoperatively. Being that the gastric bypass procedure provides a newly formed stomach pouch; the patient is then only able to hold a relatively small amount of food. Because of this physiological restriction, participants revealed that portions were kept small and that some meals were often shared.

Table 4

*Eating Behaviors*

Portion size	Types of foods	Number of meals/ snacks per day
Palm sized	Protein (30%)	3
1-1.5 cups	Greek yogurt	4
	Cottage cheese	7-8
Sharing meals	Fish/chicken	3-5
Small portions	Pasta	5
	Shakes	6
	Nuts	Unsure
	Cheese	
	Meat/pork	
	Fruits/vegetables	

Lastly, participants discussed the frequency with which they consumed meals with the average being 3 to 5 daily.

Following a healthful diet is a best practice for patients who undergo bariatric surgery as much of their success depends on consistently eating the recommended amounts of food and selecting protein-based foods that will help to ensure satiety.

**Barriers to support.** The theme that emerged is the nonattendance at support group meetings which suggests that the reason participants ranked support groups was not important to successful weight loss or that it had no real bearing on their weight loss status due to opting not to attend. Table 5 shows the frequency of participant attendance rates for those who initially attended or currently attend bariatric support group meetings. As shown, the majority of participants did not seek out support group meetings postoperatively. Most of the participants (n=7) attended an initial meeting or preoperative meeting, only two attended more than one preoperative meeting.

Table 5

*Support Group Attendance*

Frequency (how often they attended)	Participants' initial attendance
None	3
Once	5
Twice	1
3-4 times	1

With regard to current attendance, only a few attended bariatric meetings at least once a month. The reasons given for the barriers to attendance were: frequented bariatric meetings at least once a month. Other reasons given for barriers to attendance were: “I am strong willed,” (not needing the support) “time constraints,” “location not convenient,” “no foreseen benefit,” “fear of being

recognized,” and “no utility in attending.” One participant explains the conflict in attending bariatric meetings due to attendance at his AA meetings:

We had a mandated meeting before surgery. I have not attended any bariatric meetings postop. I am in recovery, so I go to two different meetings; I go to a support meeting for health practitioners, as well as AA and after that I’m about done with all the support that I get. It’s just like, hey, you all need to shut up and just move on. (Participant 7)

But it [support group meetings] can’t be at the hospital where we all have to come and meet in this room together. There needs to be another way to do it. Because I live 30 minutes away and by the time I got home, got the kids, it would be 7:30. I’m driving to all these activities in my life because—and I would say it’s a normal life—but I can’t get to that meeting on a Tuesday once a month. But an online Facebook® page of people that you can meet and talk to and then eventually meet—that’s better. Like if you had that Facebook® page with the group and then they are doing stuff. Like not just going to . . . Like go somewhere and have a meal together. See what and how other people are ordering. (Participant 4)

Participants cited a number of reasons why they did not attend support group meetings but there were some clear distinctions in their answers. For openers, some of them said they did not see the utility in going. For others, the dynamic of a co-ed group was not particularly appealing due to the nature of some of the discussions. For example, one participant suggested that an all-male group be formed in order to talk about sensitive postsurgical issues that plague men. Still others had conflicts due to meetings pertaining to self-interests or for other health issues that they struggle with such as alcoholism. Finally, common barriers existed in terms of

where the meetings were located and the time constraints in making it to the meeting on time because of work and childcare.

**Benefits to support.** Attendance at support group meetings was the theme here, but only a few actually attend the meetings. Their reasons for doing so include listening to the bariatric nurse, getting the nurse's recipes, acting as an advocate to other patients, making connections, gleaned new information, and hearing from the surgeon and dietitian. Aside from benefits derived exclusively from the individual participant, it was explained that the group setting made it conducive for being there for others as well. Forging connections that continued beyond the actual meetings were also established. For example, one participant sees the need to be supportive of other fellow attendees:

Well, I go to the group that the bariatric nurse runs. I've been there three or four times. I don't necessarily need it as a support group, but I try to go to be encouraging to the people who are considering this surgery. I try to be there to advocate for them and for VCU. I think. . . I tell everybody that if they are considering the surgery, there is only one place to go. (Participant 6)

. . .and having somebody I could connect with that was doing the same thing. And we stayed in touch—we will stay in touch. That was really, really helpful. That was my connection to the group. But, then she went on to her life and I went on to mine.  
(Participant 4)

These two participants' attendance at support group meetings seem to differ in that one discloses that he attends support groups in order to help others whereas the other participant seems to suggest that he needs to attend in order to work through his challenges postoperatively.

At any rate, all parties could end up benefiting if they are there for one another in some way, shape or form.

**Lifestyle changes.** The theme that emerged here related to long-term success with weight loss and to how compliance with behavioral factors was needed to maintain a healthy weight. As part of the interview, participants were asked to rank the factors that they perceived as the most important in terms of achieving weight loss success which include eating behaviors, physical activity, support group attendance, and physician follow-up. Results of the ranking can be seen in Table 6.

Table 6

*Ranking of Behavioral Factors as Indicated by Participants in Successful Weight Loss*

	Most important	Second most important	Third most important	Not important
Eating behaviors	6	3	1	
Physical activity	2	6	2	
Support group	1	1	3	5
Physician follow-up	1		7	2

Participants largely identified successful weight loss through the lens of eating behaviors and physical activity as those ranked first and second in importance out of the four factors in this study. Both eating behaviors and physical activity were highlighted as beneficial in the preoperative phase as well as the postoperative phase. Participants reiterated that by starting more healthful habits prior to surgery, this would bring forth better individual compliance in order to

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adopt the changes necessary to lose weight. One participant even remarked that he would look forward to trying new and healthful foods:

Be willing to make a commitment to changing your relationship with food. However, that being said, everybody has a very personal and individual relationship with their eating habits and with their food. Unless they are willing—without a doubt—that they are wanting to make a change, then do it. If you are not—if there is any doubt—that you can do it, then wait, find out what you need to change about yourself and then do it.

(Participant 1)

Participant 6 stated, “I’d say, if you are considering it [gastric bypass], get in an exercise program right now. I don’t care if you can only walk 20 steps—start exercising now, before the surgery. Make it a part of your life.”

The eating is where it’s at. You can do all the physical activity in the world, but if you’re eating habits are poor, you’re going to feel like crap. You’re not going to perform well. And then you’re going to suffer emotionally. Because you are going to feel bad and it’s



just a vicious cycle. So, eating habits have got to be your top priority. And then physical activity is a close second. (Participant 3)

Some of the participants were especially vocal about adhering to the bariatric protocols such as following the instructions and advice given from the bariatric nurse and the dietitian. They stressed the importance of making sacrifices as well as keeping a positive attitude throughout the process. Lastly, the motivation for physical transformation with regard to weight loss was significant but many of the participants described that mental preparation was involved with their physical transformation. For example, seeing a picture in their mind of how they could look and the benefits to their health long term if they committed to changing their lifestyle with continued compliance to healthy behaviors was a motivating factor.

You have to be mentally prepared to do it [surgery]. That's the most important thing.

You have to understand that you have got a lot of sacrifices to make; a lot. Because it changes your body and I mean it's a big change in your plumbing, you know. You can't eat like you used to. Mentally, I can think about how good it used to be. But I can't do that anymore. (Participant 9)

Participant 1 reaffirmed that one must be ready to make a concerted effort to change their lifestyle and that commitment must be present in order to make that happen. The comments from the last three participants align with what the majority of the study participants revealed about eating behaviors and physical activity—that they rank as the most important in terms of successful weight loss.

This chapter highlighted the results of a series of interviews conducted on 10 male gastric bypass patients on their perceptions and experiences with successful weight loss. While eating behaviors and physical activity were primary and secondary drivers of weight loss success,

physician follow-up, in particular with the bariatric nurse-coordinator was recognized by a majority of the participants as a leading tertiary means of success.

## **Chapter 5. Discussion and Conclusions**

### **Summary of the Purpose of the Study**

The present qualitative study examined experiences and perceptions of behavioral factors that contributed to successful weight loss in male patients who had gastric bypass surgery. A semi-structured interview protocol was developed and piloted. The final protocol guided individual interviews with a case study of 10 male participants who chronicled their journey with weight loss and the factors involved with their success at different stages related to undergoing surgery including: eating behaviors, physical activity, sources of support and physician follow-up. A number of themes were illuminated that helped to further explore the participants' weight loss trajectory along a continuum from pre-surgery to post-surgery.

### **Discussion of Findings**

Although there was a variation of responses to certain questions during the interviews, the majority of participants described the predominant influence eating behaviors and changes to eating behaviors had on their successful weight loss postoperatively. The overarching reasons for eating behaviors in receiving the most recognition hinged upon the strategies employed by the participants such as including a high protein diet focused on portion-sized meals/snacks throughout the day. Increased physical activity was also identified as a key ingredient to successful weight loss, second to changes in eating behaviors. In general, participants overwhelmingly cited that they had a very positive rapport with their surgeon as well as the bariatric nurse stating that follow up was the third most important factor in leading to their

weight loss success. Lastly, participants discussed the limited influence that support groups had on successful weight loss. Only half of participants attended an initial session but subsequently did not attend any others and three participants never attended preoperative or postoperative meetings.

Few bariatric studies are specific with regard to gender and gender-based differences, and there are some inconsistencies in the findings (Natvik, Gjengedal, Moltu, & Raheim, 2015). In fact, Young and colleagues (2016) examined a decade-long study consisting of 810,999 patients who underwent bariatric surgery and males constituted only 19.3% whereas females represented 80.7% of all cases. Preoperatively, female patients were found to have had lower rates of comorbidities as compared to males who exhibited higher rates of comorbidities. This was not the case in the current study as participant descriptions did not broadly reflect such increased comorbidities in the preoperative phase or the severity therein. Moreover, only a few of the participants had pre-existing conditions as the remainder of them described issues related to such things as poor sleep and debility.

### **Presurgery**

In general, bariatric surgery is associated with long-term improvements in quality of life (QoL) for patients (Arteburn & Courcoulas, 2014). This study found that concern for their well-being was the primary motivation for the participants in deciding to undergo gastric bypass. This finding is consistent with other studies related to QoL. Participants in this study described in particular how physical health concerns such as sleep apnea influenced their QoL whereas studies on the female experience with QoL offer a somewhat different contrast. Kolotkin et al. (2008) found that females seeking bariatric surgery described twice the rate of depression on their QoL compared to males. Only three participants in the current study described depression

as causing an impact on QoL prior to surgery. Two other studies looked at QoL after surgery but the findings were mixed. The first study examined QoL perception of weight loss surgery participants using a tool known as Bariatric Analysis and Reporting Outcome System (BAROS). Researchers concluded that females reported better scores on BAROS suggesting that they gain more from having surgery with regard to QoL perception (Branson et al., 2005). On the other hand, Salazar-Maya, Hoyos-Duque and Bojanini-Acevedo (2014) used the World Health Organization's Quality of Life Questionnaire, which showed improvement in males in their quality of QoL as compared to females when assessed 10 months postop.

Bond et al. (2006) reported that patients who are anticipating upcoming weight loss surgery could envision the procedure as a motivational tool in adopting healthful behaviors. Moreover, this can help to foster a better sense of well-being and bolster their QoL. Ogden et al. (2006) agreed that sustained weight loss through traditional lifestyle approaches such as diet and exercise can be very difficult if not impossible to achieve for many obese individuals. Participants in this study described their attempt at physical activity and improved eating habits but the struggle to lose any significant amount of weight was not achieved prior to gastric bypass. To that end, if these repeated attempts at weight loss continue to be unsuccessful, bariatric surgery is often the only way to ensure that a patient might have a chance to reduce comorbid conditions and improve their longevity. Although the decision to have this surgery is not without risks, the decision not to have it seemed far greater in terms of ill health according to the participants. The participants were not so much concerned about quantity of life preoperatively as they were on QoL with regard to being able to perform basic activities of daily living without the added burden of weight and debility as a result of having the surgery. Hearing their experiences of being obese while growing up or even at certain points throughout their

lifetime, gave the impression of how empowered they must have felt in taking charge of their life. For example, one participant explained the joy he felt when his surgeon commented that he could now purchase a brand new wardrobe due to the amount of weight lost. The inherent risks become even more evident when one comes from a family history of obesity which was the case in this study. For this reason alone, it was more than enough to make the decision to combat the obesity through surgical intervention. According to Duval, Marceau, Perusse, and Lacasse (2006), QoL in patients with obesity can have very important implications on the effects of surgical interventions and in helping to inform public health policies in addition to health-care expenditures.

Participants' disclosure for concern over feelings of powerlessness within themselves (internally) or as a result of situations perceived as beyond their control (externally), were evident throughout the interviews. These concerns ranged from childhood memories about growing up overweight due to poor nutritional habits and lack of physical activity to cultural norms that focused on consuming foods that by today's standards are considered less healthy as well as poor eating behaviors such as emotional eating, bingeing, and eating for convenience. Issues with satiety were described where participants detailed mindless forms of eating empty calorie foods which contributed to weight gain. These habits were often formed in childhood, as participants pointed to their upbringing by mothers and fathers or caregivers that had an unhealthy weight. As the literature suggests, prevention efforts should begin early on in life particularly in families where one or both parents are overweight or obese (Summerfield, 2012). Golan and Crow (2004) emphasize that parental activity influences children's participation in physical activity. However, the participants in this study explained that the parental role of modeling healthy behaviors in the home was largely nonexistent. As young children, most

participants discussed having working parents who often did not make time for cooking in the home nor had time to plan healthy meals. Additionally, sedentary behaviors on the part of the parents were also common among those in the study. Feeling resigned to this type of role modeling, could suggest that the participants seen this type of normative or characteristic behavior as familiar and as such, many of these patterns would then carry over into their adult life with regard to becoming obese and eventually necessitating the need for bariatric surgery as a last resort option. These findings are consistent with the literature in that being overweight in childhood is an indicator of overweight in adolescence and adulthood accounting for 20% of adult overweight and obesity (Freedman, Khan, Dietz, Srinivasan, & Berenson, 2001).

Concerns over lack of willpower and using food as a source of comfort were recounted by the participants in all facets of their life including school and into adulthood. Denial as to how much weight was gained along with other coaddictions such as obsessive compulsive disorder and alcoholism exacerbated health and relationship problems. Being able to recognize a problem is the first step in working toward solving it but, unfortunately, the weight gain became impossible to control leading to many other personal issues within the lives of these individuals. Voelker's (2004) research highlights a number of personal issues by framing them within a psychological profile where obese individuals may present with depression, insecurity, despair, denial of their emotions as well as difficulties with interpersonal relationships. She further contends that these factors may lead to poor social adjustment and low self-esteem.

Physical concerns discussed in the interviews impacted by the obesity were wide-reaching in terms of the scope of the issue. The inability to breathe upon exertion while climbing stairs resulted in the reliance of elevators regardless if the building had very few floors. Others adopted workaholic tendencies which resulted in the majority of their time spent sitting at a desk

with no physical activity. Still others had interrupted sleep conditions such as sleep apnea which can be caused by excess fatty tissue in the neck and throat. The incidence of sleep apnea is much greater in the obese population as compared to the general population (Dhabuwala, Cannan, Stubbs, & Obst, 2000). It should also be noted that men are more at risk of developing sleep apnea compared to women (National Sleep Foundation, n.d.). Body size also presented problems with regard to poor sleep quality such as being too large to sleep in a particular position consistently. Rarely seen in the bariatric literature, a British study used an evenly matched cohort of females to males (79:79) comparing weight loss and metabolic outcomes. With regard to treatment for sleep apnea patients, Kennedy-Dalby and colleagues (2014) found no significant gender differences that warranted cessation of continuous positive airway pressure (CPAP) as a result of undergoing bariatric surgery. In the present study, only one participant reported having sleep apnea without amelioration of the condition. As a result, he described the need to continue usage of his CPAP device.

Aesthetically, there were some participants who discussed their dissatisfaction with their body image and the improper fit of clothing. These findings differed from the literature whereby research suggests that males and females have different attitudes toward body image and weight (Walfish & Brown, 2007). Lokken, Ferraro, Kirchner and Bowling (2003) report that females show greater dissatisfaction with their bodies as compared to males. For example, when one undergoes bariatric surgery, plastic surgery is often the next step as patients are left with sagging skin folds due to the procedure. The males in the current study did not express much concern for getting extensive plastic surgery.

While some men may find it difficult to show their emotions, in this study the men provided detailed accounts of how they felt leading up to the decision to undergo gastric bypass



surgery and in the remaining days before their scheduled surgery. These emotional concerns from the participants in the preparation for the procedure could be conceptualized on a spectrum. At one end, feelings of low self-worth and lack of support were evident or considered more negative, but on the opposite end, detailed accounts of optimism and the anticipation of having surgery would be seen as being more positive.

The psychological concerns expressed by the participants prior to the surgery seem anecdotal in that they are similar to those expressed by many who undergo various types of surgeries. For example, there are always inherent risks to any surgical procedure where one's health status might become compromised or far worse—where mortality could occur. In this study, however, few participants indicated serious concern for potential risks. For example, only one described making preparations in the event of his accidental death as a result of this procedure. Further, many of the participants described how they engaged with negative self-talk before the procedure occurred. Alternatively, another participant acknowledged that he was looking forward to the impact of the surgery. Contrary to the aforementioned examples in the current study, Zijlstra, Larsen, de Ridder, Ramshorst, and Geenen (2009) contend that the effects of weight loss surgery and maintenance are achieved independently regardless of patients' preoperative expectations or postoperative psychosocial satisfaction.

There were both optimistic and pessimistic views prior to undergoing surgery. Immediately after their surgeries, some expressed thoughts of being hopeful in starting a new chapter in their life and described their hopes for expedient weight loss. The fact that some of these participants pondered their commitment to being compliant with healthful behaviors postoperatively was a positive sign that they had really thought about the surgical trajectory, and that it was not a simple fix for weight loss but instead should be treated as an adjunct to the work

that lie ahead with regard to following the proper eating habits and including bouts of physical activity.

### **Post-surgery**

In this study, the concern for aspects of social health were surprising in that these participants were more inclined to focus their social interaction among fellow gym members and more importantly, the bariatric team. They explained that they were not solely reliant upon the support given from family and friends, and in some cases seemed more empowered by their own personal will. In fact, one participant disclosed that the support that was given him from his family in the weeks and months after surgery had continued to wane. He concluded that his family and regular peer group thought he was too thin leading him to believe that he no longer warranted support for his weight loss. Two others in this study discussed their self-reliance and inner-resolve as a constant throughout their lives and because of these traits; they did not have a need to rely on anyone else for a social connection. Another participant described his relationship with fellow gym members as a pivotal part to his success with weight loss due to the tremendous amount of encouragement he continues to receive.

In addition to self-reliance, or the social aspects of support from family and friends and the bariatric team, one participant passionately made the case about the need for a social support system geared exclusively to men who have had bariatric surgery. His reason for this social group stemmed from not feeling comfortable talking to a female clinician about his gastric distress and he feels men might be more open to discussing such experiences with other men. Secondly, this same participant stressed the need for a postoperative bariatric club centered on social constructs such as meeting up with other gastric bypass recipients to enjoy gatherings and to forge connections with others who have gone through this procedure. Aside from support

groups, other forms of support with regard to social media are beginning to transform. These forms of social media could certainly be tailored to an all-male support group community. For example, one study used blogging as a source of empowerment among its followers (Dickins, Thomas, Lewis, & Holland, 2011). Another study examined the use of a bariatric support line for preoperative and postoperative patients as a means of psychological support and to confer greater compliance to bariatric protocols (McDougall, Segaran, Sufi, & Heath, 2010).

**Physician follow-up.** An important finding is the strong social connections shared by the participants and the bariatric team primarily the nurse/coordinator in addition to the surgeon and the dietitian. By detailing this well-established rapport built with the bariatric team, this suggests that participants would not find a hardship or find it burdensome when scheduling subsequent follow-up appointments with the surgeon and the rest of the bariatric team. Although bariatric research focused on male patients is lacking when compared to their female counterparts, males receiving gastric bypass fared better at attending their 1-year postoperative visit (Lara et al., 2005). The participants in this study were compliant to follow-up visits with the bariatric practice. It should be noted that differing bariatric procedures have been shown to yield opposite findings. For example, Dixon et al. (2009) found that male LAGB patients, who lacked follow up, were less likely to have significant weight loss success as compared to females. While compliance can often be a factor in loss to follow up, Gould et al. (2007) contend that insurance coverage for ancillary visits should be a consideration. It should be noted that in the present study, all participants were fully insured which also may be an indicator of their further willingness to follow up with their physician on future appointments. In fact, these respondents indicated that follow up was a personal decision and did not have a bearing on whether insurance would have covered follow-up appointments.

The issue of being unwillingly compliant to physician follow-up can result in postoperative complications as found in previous studies (Poole et al., 2005). One participant in the current study reported that he regretted not contacting the surgical practice regarding his abdominal adhesions, and as such failed to follow the appropriate protocol as highlighted by the surgical practice which was further emphasized in bariatric support group meetings that he chose not to attend. The other nine participants did not report having any surgical complications but acknowledged the need to check in with their physician as well as other members of the bariatric team. Because 20% of the participants had a clinical background in medicine, they acknowledged that they were less likely to reach out to the surgeon due to their inherent understanding of medical procedures and established clinical guidelines for the postoperative bariatric patient.

Regardless of their intent to follow up with their surgeon, all of the participants expressed sincere satisfaction with and close connection to the surgeon in addition to the bariatric team as a whole—in particular, the program coordinator who is a registered nurse. It was clear from their responses that follow up with the nurse was perhaps even more important to them than follow up with their surgeon based on the unique rapport that they had with her. They praised the fact that the bariatric nurse was consistently available should they have any questions related to their postoperative experience and encouraged participants to contact her. This is a testament to the need for compassionate care and confidence in patients' continued success.

In addition to participants' positive remarks about the utility of the bariatric nurse, one of the participants emphasized the need to have consistent follow-up appointments with a psychologist beyond merely the preoperative counseling sessions. He made the case that this ancillary team member would be more of a long-term life coach. Secondly, he affirmed that

while the surgery limits food intake, it does not heal one's mind. Another member of the multidisciplinary bariatric team includes the registered dietitian, who provides critical instructions to assist patients with dietary changes contingent upon their surgical procedure. Thirty percent of the participants in this study mentioned that they were grateful for their time spent following up with a dietitian. Singhal et al. (2010) cited the expansive role of the dietitian in helping the surgical practice cope with the patient volume, thus freeing up the physician to focus on surgeries. For example, two participants in this study state that the dietitian really challenged them to think about their food choices, which was especially insightful being that one of them is single and is not adept at cooking. Only a few participants sought assistance from the dietitian which was surprising because the majority of participants described eating behaviors as the most important factor in their successful weight loss. This suggests that the majority of the participants adopted their own healthy eating behaviors independent of the need to seek assistance from the dietitian.

**Physical activity.** The participants' relationship with physical activity was varied while growing up, and half of the participants stated that they were athletic growing up and into early adulthood but as they aged activity became limited which was one of the factors that eventually lead to weight gain and a BMI in the obese range. Even though team sports or physical activity was once a main stay in their life, they confessed that they simply began to over eat and that maladaptive eating behaviors began to overshadow even the best intentions of keeping an active lifestyle.

While the literature is replete with studies pertaining to physical activity and weight loss in the post-bariatric surgery phase, there are few studies concerning preoperative status and physical activity as it relates to proposed successful weight loss after surgery is complete (Bond

et al., 2006). Only four of the participants reported engaging in physical activity prior to receiving gastric bypass surgery. In fact, during the interview process, when asked about further recommendations for individuals who might be considering gastric bypass surgery, four out of the 10 respondents underscored the importance of exercising beforehand. This gives rise to the potential to improve weight loss outcomes by increasing physical fitness, decreasing cardiovascular anomalies, and reducing postsurgical complications (Poirier et al., 2009). Further, by illuminating the advantages behind a preoperative physical activity regimen, individuals would be less deconditioned in the recovery phase of their bariatric procedure. However, if the patient is instructed by the bariatric team to incorporate physical activity in the preoperative phase, adherence to the recommendations may be lost if the patient is resigned to noncompliance.

Responses from the participants in this study with regard to their perception of physical activity as a behavioral factor leading to successful weight loss postoperatively are varied and give rise to studies that examine the role of exercise cognitions. Wouters et al. (2011) explained that “exercise cognitions” are beliefs about the benefits and barriers to physical exercise and that these notions should be addressed not only in the postoperative phase of gastric bypass, but also in the preoperative phase of surgery. For example, two of the participants explained that they were not fully certain if physical activity played a part in their weight loss. Another participant appeared to champion eating behaviors as the preferred adjunct to successful weight loss but he acknowledged that it would be helpful to increase his physical activity, although with some hesitation. Still others categorically acknowledged the benefit behind physical activity and their weight loss success but the participant who engaged in resistance training prior to his surgery

stated that he now has some trepidation as it relates to weight training for fear of getting injured now that he is older. Instead, he revealed that his focus now is aerobic activity.

The majority of the participants in this study report getting regular exercise postoperatively. Exercise was structured and planned and involved gym memberships, hiking clubs, team sports, racquetball leagues, and affiliations with health centers in the community. These venues provided a few participants with a sense of fellowship and as a vehicle to motivate one to exercise through a like-minded approach to staying fit and healthy. One of the participants disclosed that his primary form of exercise is to climb stairs at work with the aid of a pedometer to count his steps. Another stated that he was unable to find time to exercise due to his work schedule and being involved with his children's' after school activities. Due to ill health involving cardiac issues and an unforeseen fall, the last participant has been unable to keep up with his weekly walking routine.

While impediments to physical activity can certainly be detrimental to weight loss progress after gastric bypass, it seems as though a person's relationship status might offer some insights into possible explanations of more successful weight loss. For example, being divorced or single may have a bearing on how much weight is lost. Lutfi, Torquati, Sekhar, and Richards (2006) found that single patients may lose more weight due to having more time for physical activity. In the present study, four of the men either were single before the surgery or had recently been divorced. To that end, three of them have strong social connections at local gyms, recreational clubs and through team sports which have provided them with a positive outlet and has also helped them to manage their weight.

Participants offered a variety of responses when asked about postoperative physical activity. For bariatric patients, an exact exercise prescription including intensity, duration, and

optimal type of exercise has yet to be established (Egberts et al., 2012). However, it should also be noted that the actual exercise prescription would include the frequency in addition to the intensity, time and type of exercise. As such, this is akin to how often one should exercise, how hard one should exercise for, how long one should exercise for, and the type of exercise that one chooses to engage in. With regard to frequency, regular physical activity is considered one of the best predictors of long-term weight loss maintenance (Wing & Phelan, 2005). In 2001, the American College of Sports Medicine provided a position stand pertaining to strategies for weight loss and weight regain. The position stand provided recommendations for accomplishing 150 minutes of moderate intensity exercise weekly which would account for 30 minutes of activity per day in a given week or a total of 2.5 hours per week. This guideline is also consistent with standards recommending 30 minutes of activity daily from the National Heart Lung Blood Institute. Three of the participants in this study reported engaging in physical activity 7 days per week while the majority of the other participants exercised between 3 to 5 days per week.

As to the specified type of exercise that bariatric patients should engage in research is varied but Seres (2006) and his colleagues believe that low-intensity non-weight bearing exercise such as biking or swimming should commence after permission is granted from the bariatric surgeon. Swimming can be an ideal mode of physical activity for those who might have some initial reservations about engaging in activity for fear of injury. To deal with fear of injury, which was the case in one participant in the present study, there are programs in water such as aqua jogging that are recommended to gradually expose the individual to increasing amounts of exercise. Another one of the participants in the study cites swimming as one of the best types of exercise for him and possibly for others. Of the many types of physical activity mentioned by



participants in the current study including racquetball, tennis, hiking, jogging, and golfing, walking was the most consistent choice. Petering and Webb (2009) cite walking and the use of pedometers as a best practice mode of exercise for gastric bypass patients. Further, walking is one of the simplest and safest ways to introduce an exercise program for overweight or obese patients (Livhits et al., 2010).

Some of the participants in the current study relayed that they belong to a health club but they described more solitary forms of exercise while at the gym. Interestingly enough, the role of group exercise was not mentioned. However, one all-female qualitative study consisting of 11 participants, examined the impact of attending group exercise classes post-surgery (Groven, Raheim, & Engelsrud, 2013). The results indicate that class attendance fostered a better sense of community among the participants with weight control. Secondly, the researchers found that the women appeared to continue their efforts with regular attendance due to this sense of community. Establishing such a community might bode well for the men in the current study especially since it was suggested that male bariatric patients form a more supportive network. Classes like this are already in existence for women and men who prefer to exercise in a gender-specific environment perhaps due to comfort level. For example, such establishments include Curves® for women and Cuts for Men® which provide a circuit training format for their participants.

On the whole, all the participants in this study stated their preferences for a wide range of cardiovascular activities, but only two out of the 10 men admitted that they do not engage in resistance training. In light of this revelation, one of these two men acknowledged feeling weak which gives further impetus to the benefits of weight training in staving off strength deficits in addition to helping thwart muscle atrophy. In a prior study, it was found that adhering to both

aerobic and resistance exercise was implicated in not only improving weight loss outcomes but also in helping to increase the physical fitness profiles of patients after a 4-month period (Stegen et al., 2011).

In addition to traditional forms of activity, two of the participants in this study celebrated the fact that they try to engage in activities that lead to calorie burning while at work. With the increasingly popular ergonomic design of office furniture, one of the participants uses a stand-up desk in order to avoid the sedentary behavior of sitting for 8 hours while at work. He is able to adjust his desk for standing instead of sitting, which allows him to shift his body weight from side-to-side and reposition his stance, thereby affording him with some movement throughout the day. The second participant works in a building with a significant amount of floors so he constantly relies on using the stairwell as opposed to the elevator and admits that he spends a great deal of time at work due to his schedule. As such, he often does not get time to use his gym membership so he relies on the workplace in order to consistently obtain some physical activity. Aside from those who obtain physical activity in the workplace, only one of the participants admitted that he also includes leisure time activities such as gardening in order to encourage more movement.

**Eating behaviors.** The majority of the participants in this study acknowledged that adhering to proper eating behaviors including smaller portion size, emphasis on protein as their main macronutrient, as well as frequent snacks/meals was the most pivotal factor in their weight loss success after bariatric surgery. The portion sizes ranged from palm-sized amounts to one and one-half cups of food or in some cases sharing meals in order to curtail caloric content. Adherence to the significantly reduced portion sizes is believed to be an increasingly difficult challenge for many patients (Sarwer et al., 2008). In the present study, one participant reported

being consistently hungry and was disillusioned as to his understanding of prospective portion control according to the surgical directives.

In terms of the type of macronutrient most often consumed, emphasis on protein consumption was widely reported by the participants. Dietitians cite protein as one of the most important nutrients to monitor following bariatric surgery (Kenler, Brodin, & Cody, 1990). By following the recommended guidelines of increased protein intake for the gastric bypass protocol, these recommendations may also provide a guide to patients undergoing other weight loss procedures in the absence of more explicit guidelines (Freeman, Overs, Zarshenas, Walton, & Jorgensen, 2014). Greek yogurt was mentioned repeatedly as the food most often eaten per day with regard to the amount and to the frequency of consumption. Other foods most often mentioned included cottage cheese, fish, chicken, cheese, nuts, and protein shakes. Leite Faria et al. (2009) suggest that inadequate protein intake may compromise weight loss and lean musculature in postoperative patients. Moreover, the satiating quality of protein is crucial for bariatric recipients so they can avoid the temptation of eating foods deemed nutrient-empty as opposed to nutrient-dense. These recommendations highlight the important role that protein plays postoperatively. Further, patients are admonished to drink beverages after their meals so as to not fill up on liquid calories. Only two participants in the present study found this guideline to be challenging. When patients report weight gain with postoperative excessive eating, this includes binge eating, grazing, and snack eating (Chesler, 2012). In the present study, it should be noted that none of the participants had any issues with binge eating disorder either preoperatively or postoperatively. Three participants described an emotional eating pattern preoperatively revealing that social anxiety, depression, and stress from nursing school (when two of them were students) allowed them to turn to food for comfort. One participant explained

that his preoperative poor choices and requisite weight gain was due in part to snacking late at night, which is consistent with findings from Rusch and Andris (2007) that a large number of preoperative bariatric patients snack in response to stress and negative emotions. However, this participant did not repeat ill-advised behaviors postoperatively as mentioned in the literature. He revealed that he no longer continues his snacking behavior.

While certain medical conditions can be problematic in any situation, four of the participants had major debilitations which impacted their eating behaviors immensely and further compounded their obesity. The first of these four suffered with a severe anomaly called para-esophageal hernia which presents with the stomach migrating to the lungs. The participant reported that he was unable to process food properly and gained a massive amount of weight. It should be noted that this participant did not purposely follow any disordered eating patterns but was instead at the mercy of his condition. The second participant had a similar situation in that he too did not encourage weight gain of his own volition. This individual had major back surgery that was time intensive and 5 months later succumbed to infection. The infection required infusions of strong antibiotics which resulted in the destruction of the normal flora in his gastrointestinal tract eventually causing the person to gain a tremendous amount of weight. The third individual broke his ankle in two places eventually causing him to undergo four surgeries. At the end of this process he remained sedentary for 18 months and gained an extremely high amount of weight due to increased caloric intake as well as other challenges in his personal life namely his wife and kids. The last participant suffered with a degenerative hip that necessitated replacement but unfortunately took four surgeries before he could properly ambulate. Due to the length of recovery, this participant turned to food as a comfort measure and gained a large amount of weight. These last two examples are consistent with Chesler's

(2012) findings relative to increased weight gain as a result of grim emotional responses to life situations.

A total of three participants had marital issues ending in divorce; but two of these three, in addition to eating unhealthful, turned to alcohol as a coping mechanism for their situations. To that end, one of these two individuals explained that they are now in recovery. There appears to be emerging interest in understanding the inherent risks for alcoholism among bariatric surgery recipients (Odom et al., 2010). For example, the concept of “addiction transfer” (Odom et al., 2010) is a proposed notion that food may be used as a replacement for alcohol as a means of a coaddictive coping strategy. Aside from the two participants who revealed their struggle with alcohol, another participant in the current study chose to enact a strict one-drink minimum in the wake of how drinking made him feel afterward. Owing to the caloric content of alcohol at seven calories/gram, and given the sensitivity of bariatric patients with alcohol on the account of rapid absorption rates, most bariatric programs advocate extreme caution and abstinence from alcohol (Buffington, Daley, Warthen, & Marema, 2006).

The ability to exercise self-control over food urges is essential when it comes to weight loss maintenance. Once a person undergoes gastric bypass surgery, the procedure tends to evoke physiological mechanisms that change a person’s satiety centers and food urges would theoretically vanish. Nevertheless, some individuals still continue to have varied appetites along with unwanted eating urges after surgery (Odom et al., 2010). This may be the result of the hormonal response that occurs when one undergoes gastric bypass. In the current study, two of the participants expressed their hardship with having incessant food urges related to eating sweets. One of the men reported an intense connection with sweets and the other man cited being a chocoholic. Typically, if an individual eats sugar, there is a gastric physiological

phenomenon called dumping syndrome whereby one becomes acutely ill afterwards. Interestingly enough, both participants reported that they had not experienced dumping syndrome as of yet. This is surprising as those who have a penchant for sweets and who fail to refrain from sweets would be most likely to experience it. Aside from the fact that the chocoholic eats sugar-free chocolate, studies indicate that dumping syndrome occurs in 70% to 76% of patients who undergo gastric bypass surgery (Mallory, Macgregor, & Rand, 1996). Secondly, patients can exhibit a progressive tolerance for sweets throughout the postoperative period (Odom et al., 2010). The other eight participants in the present study stated that they were adamant about not consuming added sugar; therefore, they refrained from any type of desserts or sweetened beverages. Some even went as far to say that they feared dumping syndrome.

Findings from the current study are reflective of the practice of grazing in that all 10 participants frequently consumed a number of small meals and snacks per day in helping them to achieve successful weight loss. Saunders (2004) defines grazing as consuming small portions of food over time. However, the more current definition of grazing has a more problematic meaning. Colles et al. (2008a) describe grazing as consuming more than the individual considers best for themselves. The present study does not support the Colles et al. definition as participants described a more mindful and healthful approach to incorporating smaller meals and snacks into their daily nutrition plan. It should be noted that these more positive eating behaviors on the part of the participants are aligned with bariatric recommendations regarding this style of eating. It is equally important that patients discern the difference between mindful eating and mindless eating. For example, the ambiguity of grazing might conjure up thoughts of old or bad habits of eating to excess. Providing the patients with a clear definition of grazing and

suggested eating behaviors is something that can be further explained by the dietitian or bariatric program coordinator.

Personal accountability with one's diet was described by some of the participants and they found it extremely helpful to employ the use of a food diary as a way to schedule meals and document the food they consumed. The frequency and types of meals and snacks reported by the participants are consistent with recommendations provided by the nutritional pyramid for postgastric bypass patients (Moize, Pi-Sunyer, Mochari, & Vidal, 2010). The figure in Appendix E shows the bariatric food pyramid developed by Moize et al. and one of the guidelines provided by the bariatric pyramid is for patients to eat three well-balanced meals and two snacks daily. The majority of participants in this study reported eating three to five meals/snacks per day followed by a few individuals who consumed six meals/snacks and seven to eight meals/snacks, respectively. Participants in this study adhered to the recommended guidelines provided by the bariatric pyramid but others included more. The researcher posits that for those participants who revealed a higher frequency of meals/snacks per day, may have increased their physical activity. As such, this would necessitate a gradually higher number of calories in order to meet increased energy demands.

**Support groups.** The literature suggests that support group meetings are an integral part of a patient's success following bariatric surgery (Orth et al., 2008). In the current study, only three of the men attended monthly support group meetings. Prior to their scheduled surgery, all of the individuals in this study had the option to attend preoperative meetings. Eight attended at least one preoperative meeting and two attended more than once. As a best practice, Orth et al. (2008) emphasizes the importance of incorporating preoperative support group meetings so the patient has a chance to pose questions to those who have already undergone bariatric surgery.

Secondly, as pointed out by Song et al. (2008), evidence has suggested that support group attendance helps to establish a sense of connection among peers. One of the participants in the current study forged a connection with a woman in one of his support groups but then once he stopped attending, that connection was lost. The research states that having support systems in place may help to foster weight loss after bariatric surgery but it is still not well understood as to how social constructs influence behavioral changes (Song et al., 2008). After interviewing this participant, the researcher found him to be extroverted and highly social in terms of his demeanor. Thus, because this participant seems to be very social, it may be that it came natural to forge a connection with the female attendee. However, he may have also have perceived this connection as a means of establishing a different kind of connection away from the demands of his job and family life. Song et al. (2008) further contends that support group attendance might actually only have an indirect impact on weight loss due to the peer education and not directing on the physiology of weight loss success. In addition to merely gathering together in a room for a support group meeting, the researcher feels that it might be more constructive to advertise support group meetings that have a more active participatory component as opposed to attendees who passively listen to a facilitator. Secondly, it might be interesting to offer up incentives at future meetings such as gift card raffles for healthy meals or monthly drawings for a gym membership in order to help bolster attendance.

While participation in support group meetings has been linked to increased weight loss in gastric bypass patients (Hildebrandt, 1998), barriers to attending meetings were frequently noted among study participants. Challenges with attendance included the location of the meetings at the regional hospital and commute times in getting to the meetings. School activities with regard to the participants' children occurring in the evening further hindered attendance. These factors



are consistent with studies reporting travel distance and patients' family obligations as hardships for support group attendance (Hildebrandt, 1998; Orth et al., 2008). For others who were affiliated with the hospital as employees or who had reservations about being recognized at the meetings, this was a deciding factor in preventing them from attending. Still others reported that they had conflicts with the day and time of the meetings in that they overlapped with some of their other meetings such as clubs and organizations. Two others reported that they felt compelled to attend other types of meetings such as Weight Watchers® that would help to foster variety and a differing structure. Another participant is in recovery and opts to attend Alcoholics Anonymous in place of a weight loss support group. Participants detailed their attendance at other meetings out of fear of being recognized at a bariatric support group meeting and others had a history of attending meetings with a differing focus to allow for variation of topics. Lastly, one of the participants was matter of fact in that he explained that he is strong-willed and averse to attending support groups.

The benefits experienced by the few support group attendees revealed their deep enthusiasm and relaxed level of comfort with the facilitators, namely the bariatric nurse, the surgeon, and the dietitian. One individual spoke about learning helpful tips for cooking as well as other useful information about weight loss and weight maintenance. Several of the participants had very positive experiences with the nurse, and were enthusiastic about being able to interact with their surgeon in a more positive and relaxed venue as opposed to the operating room where their procedure took place. One participant noted that he attends support group meetings mainly for others so that he can act as a role model and be a voice of encouragement for those who are perhaps still undecided on whether to undergo weight loss surgery.

Traditional bariatric support groups may consist of ancillary members of the bariatric team acting as guest speakers or facilitators in addition to prospective patients considering weight loss surgery, preoperative weight loss surgery candidates, and those who are in the postoperative phase. However, consideration of other forms of social support may be helpful to ensuring successful weight loss in the postoperative patient. In this study, several of the participants noted that their support structure consisted of their spouse, immediate family members, roommates, colleagues, fellow church parishioners, male friends, gym friends, as well as the bariatric nurse and their surgeon. Ray et al. (2003) found that bariatric patients have an average baseline of four confidants and those who had up to nine or more confidants tended to have greater weight loss. The majority of the men in the present study revealed that they had fairly robust social circles which were evident in their quest for successful weight loss.

As a clinician, one of the participants stated that he meets regularly with a few of his colleagues who have also undergone gastric bypass and they have formed their own quasi-support group. He disclosed that they find it to be more beneficial because they know one another personally, and as such they find that the conversations are more focused and topic-centric which they find to be more advantageous. Moreover, they find greater benefit in the meetings as a small group instead of having a more heterogeneous group. Another participant finds that his close friends and fellow church parishioners help to keep him motivated and that the nature of a support group can often invite individuals who monopolize the conversation in which case he finds that to be counterproductive not only to himself but perhaps to others in the support group setting. A third participant felt like a group consisting of all men might better fill a niche for him as well as other guys. He feels like a homogenous gathering would allow him more latitude in expressing his struggles and also looking for solutions that other men might

have in terms of gastrointestinal distress that he feels unwilling to discuss in the presence of women support group attendees due to the potentially embarrassing nature of the discussion. This same individual also thinks that social media such as Facebook® should play a role in making the standard support group more accessible for those with schedules that cannot accommodate face-to-face meeting patterns due to job conflicts and child-care duties. He expounded upon the notion of an all-male support group structured outside the standard hospital meeting room in that he would like to see a location that is less clinical such as meeting at a restaurant to compare nutrition practices or perhaps even other outings such as sports-related venues.

In terms of the participants' notions of long-term success with weight loss, the results of this study indicate that eating behaviors were the most important followed by physical activity whereas physician follow-up ranked third in importance. Lastly, participants revealed that support group attendance was not important. Perhaps just as significant, were the accounts of participants who acknowledged the need to begin lifestyle changes in the preoperative phase. By following this strategy, the hope is to work toward adoption of improved relationships with food and physical activity when transitioning to the postoperative phase of the surgery.

### **Study Limitations**

One limitation in this study is the fact that there are fewer numbers of men who undergo bariatric surgery thus reducing the available pool of participants at the regional medical center. Secondly, nine of the participants were Caucasian and only one was Latino so an increase in participants of varying ethnic backgrounds such as African American, Native American, Asian

American, and Pacific Islander would have allowed for a more diverse subject population.

Third, a further limitation of this study is the small sample size may limit the applicability of the research findings to other medical practices. Lastly, this study was limited in that all of the participants came from the same medical practice which may suggest that the results are solely reflective of a single particular bariatric environment. For example, the participants began their preoperative component at the medical center later followed by their surgical procedure with continuing postoperative care including potential support group attendance, all of which were conducted within the same program and at the same facility.

### **Recommendations for Future Studies**

Future lines of research should be two-fold by exploring more qualitative methodologies (case studies and focus groups) and also increasing the number of men that are recruited into bariatric studies. This will ensure that researchers can better understand the experiences as to how and why certain behavioral factors foster successful weight loss in men due to the very limited number of studies that focus exclusively on men. In addition to including more male studies on bariatric weight loss outcomes, surgical procedures should be compared especially those that are newer and of which longitudinal data is lacking. For example, conducting studies on gastric bypass and gastric sleeve would serve to compare and contrast the effectiveness and efficacy across a larger range of patients. Subsequent studies should further take into consideration an individual's geography owing to patient demographics which would serve to ascertain patient outcomes at medical centers in the south, on the east and west coast, and in the Midwest. For example, researchers could study socioeconomic status, including education levels in the various regions of the United States, to see how patients present prior to undergoing bariatric surgery. By examining status, this may help researchers' better understand patient

outcomes. Secondly, researchers should examine the potential impact of race and ethnicity on patient weight loss outcomes by comparing regional underserved areas such as those who reside in rural or urban centers. Future studies examining lifestyle behaviors such as physical activity of a given region, cultural norms with regard to food preferences and methods of food preparation might assist bariatric centers with tailoring better patient education depending upon the target population of the surrounding area.

Based on the behavioral factors that were examined in this study, support group attendance bears further exploration. Few reports of studies that address the association of postoperative bariatric care and support group attendance have been published (Kaiser et al., 2011). Participants in the current study did not think that support group attendance was important to their successful weight loss but they did cite other sources or suggestions of support such as fellow gym members or colleagues as well as starting virtual support groups composed of males who have undergone bariatric surgery.

Examining the age of a patient may offer insights into how successful their surgical experience is with regard to weight loss. Motivation levels might differ in patients who are younger as compared to older patients. A participant in the current study was a middle-aged father who found it very difficult to attend support group meetings due to conflicts in his work schedule along with his children's afterschool activities. The literature supports the findings of this study in that age is not necessarily predictive of compliance at follow-up appointments (Lara et al., 2005). Participants readily looked forward to following-up with the bariatric coordinator and the surgeon.

Due to the lack of bariatric studies focused on male patients in general, it would be interesting to examine support group attendance as a singular factor in weight loss through

retrospective or prospective studies in order to compare the experiences and the impact of this line of support. A systematic review (Livhits et al., 2010) of support groups revealed that only one included a majority of males as compared to females. However, this study did not provide any further information as to the higher proportion of males used nor did it mention any discernable differences between males and females with regard to their perspective or how their attendance was received (Song et al., 2008).

## **Conclusions**

The findings of this study have brought to bear the importance of qualitative research in gaining a better sense of how and why specific behavioral factors lead to successful weight loss. Current research indicates that participants in qualitative bariatric studies are predominantly female (Gronning, Scambler, & Tjora, 2013; Knutsen, Terragni, & Foss, 2013). The researcher had a very limited pool of participants from which to recruit from (n =32) at the surgical practice at the focus of this study, so it is important that future research involving male patients thoroughly consider recruitment efforts to ensure adequate representation.. To provide greater representation in bariatric research, health-care professionals should reach out to men on a multitude of levels. For example, Wool et al. (2009) suggests that the Veterans Affairs population may widely benefit from bariatric surgery due to the predominant male demographic. By contributing to the qualitative bariatric literature, this study helps to inform other studies in a realm that is almost nonexistent—studies that exclusively examine the perceptions and experiences of obese males.

Males often seek out access to regular health care at a much later age as compared to females and these primary interactions with healthcare professionals are on an as-needed basis (Farinholt et al., 2013). The bariatric literature reports that males often present at a much later

age and are already disease-burdened which often can lead to poorer outcomes (Arterburn et al., 2009; Maciejewski et al., 2011). In the current study, there was a range of ages with men in their thirties and into their sixties. Being that some of these participants sought out the surgery in early to middle-aged adulthood may signal a shift in the urgency to seek surgical intervention sooner rather than later. This finding is an interesting divergence from what the current literature reports about men's ages when seeking out bariatric surgery. Identifying men at an earlier age is important in fostering a healthy lifestyle by making yearly doctor appointments starting in early adulthood. This earlier exposure to health-care professionals could facilitate conversations about achieving a healthy weight in a traditional sense but could then transcend to surgical means if necessary. This would establish a connection to male patients and may have an effect on retaining them and referring them for possible weight loss surgical procedures.

The evidence thus far reveals a gender-gap in that females have been found to obtain more bariatric consultations with their physicians compared to males (Wilkins, Payne, Granville, & Branney, 2008). A more recent study by Young, Phelan, and Nguyen (2016) found that males are significantly less likely to be referred by their family physicians to bariatric surgeons and that males were no less likely to consider bariatric surgery even if recommended by their doctor. Those study findings stand in direct contrast to the current study. In the present study, none of the participants described any significant hesitation in undergoing gastric bypass and in the end were amenable to having the procedure done. In fact, some explained in greater detail the path that led them to seeking out the surgery such as researching it ahead of time and talking to friends about which procedure to choose.

Males differ from females in that they do not necessarily have a designated clinician as in the case of an OB/GYN provider. As such, women might be more likely to schedule regular

appointments in keeping with a more proactive stance on their health and well-being. On the other hand, there are some instances in which male patients could be provided with practitioner services in a setting specifically geared toward addressing men's healthcare needs. For example, a health center that is aligned with the health-care interests of men. Such facilities are already in existence with locations in Richmond, Virginia Beach and Newport News, VA called Men's Wellness Centers which specialize in testosterone therapy, erectile dysfunction treatment, and weight loss. Such a facility could prove very beneficial by helping to refer men to bariatric surgeons should that be a last resort option. Additionally, Farinholt et al. (2013) suggest that obese males should be closely checked for certain characteristics that better define or identify the most optimal timing of weight loss surgery before they present with advanced stages of ill health. This includes pre-existing conditions such as sleep apnea which can impact surgical outcomes tremendously (Young, et al., 2016). The underlying risk in men with sleep apnea further underscores the need to treat them earlier through bariatric surgery (Romero-Corral et al., 2007). These solutions could perhaps improve men's access to surgical options and greater quality of life and improved longevity.

The current study offers awareness and further reinforces the importance of having a committed and caring bariatric team (including the surgeon, nurse and dietitian). More specifically, all of the participants in this study emphasized the integral role played by the bariatric nurse coordinator in terms of her stellar bedside manner in helping them to feel supported and ultimately successful. This garnered support from the nurse/coordinator has positive implications for practice in that this role could expand to include more scope of practice with regard to being more accessible to the patients for follow-up, thus freeing up the physician to focus more on the actual surgeries. For the most part, follow-up studies within the bariatric



literature largely examine compliance toward keeping appointments with surgeons along with time frame for the follow up such as the 1-year postoperative timeframe. Follow up in the sense of this study is unique in that it largely revolved around having the positive and unwavering support provided by the bariatric nurse coordinator. Interestingly enough, the literature reports that males are significantly more compliant than females at their 1 year postoperative visit (Lara et al., 2005) and in this study, follow up was seen as a very positive factor with regard to the bariatric team.

Secondly, while the results of this study did not indicate the importance of support groups, nonetheless support through other channels (in the non-support group sense) was described throughout the interviews. For example, spouse, fellow church parishioners, male friends, colleagues, family, and gym members were all identified as avenues of support after surgery. Equally important was the suggested ways in which support groups could be restructured in order to better meet one's expectations. Virtual support was offered as an alternative to traditional support groups. Also, all-male support groups were suggested as an adjunct to feeling more comfortable in speaking freely about issues that might plague other men equally.

Third, this study examines both the preoperative and postoperative phases of the weight loss journey of 10 patients compared with two exclusively all male quantitative studies that only examine the preoperative phase (Walfish & Brown, 2007, 2009). Moreover,, this study provides a detailed account of males with an age range between 30 and 60 whereas a Veterans Affairs study compares outcomes in men above age 60 with other males between 50-59 years old (Wool et al., 2009). This study sought to expand on the need to address behavioral factors such as eating habits and level of physical activity that are typically associated with weight loss in

individuals who undergo bariatric surgery but in the sense of a more in-depth perspective of hearing from patients in their own words and to learn how to better tailor future interventions for obese individuals. Such interventions might include increased contact with family practitioners early on and referral to bariatric surgeons to discuss weight loss treatment options.

Even when studies include males, the majority of the participant population tends to be female which is why the current study is a contrast with its all-male population. Moreover, in the limited amount of studies involving males, this study exclusively uses a qualitative approach compared to those which use quantitative methods or mixed-methods or a higher ratio of females to males in their participant pools. This is the case with one seminal study from Farinholt et al. (2013) which included 81.5% females; however, the study really makes a case for the disproportionate number of men represented within the literature and what can be done to address the situation. To the researcher's knowledge, the present case study is unique in that it is the only one of its kind to examine the perceptions and experiences with successful weight loss in American men as compared to only one other study (Natvik et al., 2015) examining Norwegian men albeit from a phenomenological framework.

Studies confirm that the rate of obesity and obesity-related comorbidities is similar in males and females. However, reports from the last decade suggest that the prevalence of obesity is increasing at an accelerated rate in males as compared to women (Flegal, Carroll, Kit, & Ogden, 2012). For this reason, it is crucial that researchers address and respond to potential barriers such as why men might be hesitant to consider bariatric surgery when recommended by their physician or in devising program indicators like compliance to lifestyle changes. Therefore, structuring well thought out procedural mechanisms will better serve males in their pursuit of a healthy lifestyle through this tertiary intervention of weight loss surgery. Interestingly enough,

studies indicate that males have been found to lose more weight than females in bariatric surgery in addition to various other behavioral and drug related treatments for obesity owing to metabolic differences between the genders (Wadden et al., 1992).

While this study did not examine comorbidities, extremely obese (BMI > 40) men have been found to be at an increased risk for coronary artery disease, congestive heart failure, and sleep apnea as compared to women who undergo weight loss surgery (Residori, Garcia-Lorda, Flancbaum, Sunyer, & Laferrere, 2003). From a clinical practice standpoint, these risk factors bring attention for the need to have more studies on men who undergo bariatric surgery and the implications for men who present with advanced age as this too is a commonality seen in the literature. Sugerma et al. (2004) found that bariatric surgery is effective for older patients at low risk for comorbidities and mortality. Sugerma further contends that due to increased illness in older patients who may be more sedentary, concerns remain that they may not tolerate bariatric surgery as well or lose an adequate amount of weight. For this reason, it is crucial that men be targeted for early intervention at a younger age when they may not be as afflicted or at such a high risk for comorbidities.

Barriers with regard to individual weight loss were described by some of the participants in this study. For example, speaking in front of female support group attendees was deemed uncomfortable which eventually led to the individual's decreased attendance. Also, fear of being recognized at support groups further caused some to avoid support groups. Others described trepidation with physical activities and the fear of being injured as a possible barrier to being active after surgery due to strength deficits. Having time to engage in physical activity due to increased work demands was also cited as a barrier to compliance and weight loss. In terms of barriers affecting eating behaviors, one participant described having a hardship in having to wait

to consume liquids after first eating a meal. He further described his inability to feel full after eating which caused him to want to consume more calories. Lastly, some of the participants described having issues with pre-existing conditions which acted as barriers in having the stamina to exercise.

By utilizing a semi-structured interview protocol, participants were able to express their perceptions and experiences of weight loss success captured in their own words as compared to information obtained from quantitative measures where participants are often asked to check boxes or answer closed-ended questions. As such, by obtaining more in-depth responses from the participants, the researcher was able to better document their weight loss journey. To that end, the study findings contribute to what is known about the potential barriers, benefits, suggestions, and other personal details that may assist researchers in better understanding male bariatric patients. As a result, this information will allow clinicians to better tailor bariatric programs accordingly.

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## Appendix A

### Pilot Study Recruitment Letter

March 2016

Dear Ms. \_\_\_\_\_:

You have been identified as a patient who has undergone gastric bypass surgery at the VCU Medical Center. You are being contacted by the bariatric practice in order to maintain the confidentiality of your personal contact information. The purpose of this letter is to let you know about a study about the experiences of female gastric bypass patients to learn more about how to support successful weight loss and maintenance.

This study is being conducted by a graduate student, Mr. Stephen Sowulewski, as part of his dissertation research. Mr. Sowulewski wishes to invite you to participate in a pilot project of his actual study so he can test out a set of interview questions that will be used on male patients in his study. The study focuses on male perspectives with weight loss outcomes post-surgery and is designed to learn more about these experiences and to better understand the factors that were associated with your success. Mr. Sowulewski hopes to gain insights into why fewer males seek out weight loss surgery and also provide recommendations for best practice for follow-up and how to ensure successful weight loss behaviors in men.

Participation in this study involves, completing an individual interview. The interview will last approximately one hour. During the interview topics such as eating habits, physical activity, role of support groups, and working with physicians and how your experiences in these areas contributed to your weight loss will be discussed. The information you share and your participation is confidential. All participants will receive a one week free pass to American Family Fitness (any of their 9 Virginia locations).

If you are interested in participating or have any further questions, please contact either Mr. Stephen Sowulewski by e-mail (sowulewskisp@vcu.edu ) or phone (804-523-5528).

Sincerely,

Guilherme, M. Campos, MD

## Appendix B

### Male Gastric Bypass Recruitment Letter

March 2016

Dear Mr. \_\_\_\_\_:

You have been identified as a patient who has undergone gastric bypass surgery at the VCU Medical Center Bariatric Program. This letter is being sent to you by the VCU Medical Center Program so as to let you know of a research study which goal is to better understand the experience and the journey of gastric bypass patients and to learn more about how to support successful weight loss and maintenance. We would like to invite you to participate in the study (details are below) and this invitation letter serves to maintain the confidentiality of your personal contact information, and you will only contact the study coordinator if you wish to participate.

This study is being conducted by a graduate student, Mr. Stephen Sowulewski, as part of his dissertation research. The study focuses on the perspectives of male patients and weight loss outcomes post-surgery and is designed to learn more about these experiences and to better understand the factors that were associated with your success. Mr. Sowulewski hopes to gain insights into why fewer males seek out weight loss surgery and also provide recommendations for best practice for follow-up and how to ensure successful weight loss behaviors in men.

Participation in the study is voluntary and involves completing an individual interview. The interview will last approximately 30 minutes. During the interview, topics such as eating habits, physical activity, role of support groups, and working with physicians and how your experiences in these areas contributed to your weight loss will be discussed. The information you share and your participation is kept confidential. All participants will receive a one week free pass to American Family Fitness (any of their 9 Virginia locations).

If you are interested in participating or have any further questions, please contact either Mr. Stephen Sowulewski by e-mail (sowulewskisp@vcu.edu ) or phone (804-523-5528).

Sincerely,

Guilherme, M. Campos, MD, FACS  
Professor of Surgery  
Chairman, Division of Bariatric and Gastrointestinal Surgery  
Nutter Eminent Scholar Endowed Chair in Surgery  
Virginia Commonwealth University  
Department of Surgery  
Medical College of Virginia  
1200 East Broad Street. PO Box 980519  
Phone: (804) 827-0045  
Richmond, Virginia 23298

## Appendix C

### Pilot Study Interview Protocol

Interview Date \_\_\_\_\_

#### Demographics

1. Gender

- Male  
 Female

2. Race/Ethnicity

- African American  
 Asian American  
 Caucasian/White  
 Hispanic/Latino  
 Other

3. Insurance

- Group (employer-based)  
 Personal Health Care  
 Medicare  
 Out-of-Pocket

#### Opening Script

Thank you for taking the time to speak with me today about your one year post-op experience with gastric bypass surgery. My name is Stephen Sowulewski and I am a VCU doctoral candidate working on my dissertation research study. The purpose of this interview is to learn about your experiences with weight loss post-surgery. I hope that the findings from the interviews will help better inform prospective patients and their physicians about how to best support successful weight loss post-surgery. I can assure you that your identity and your responses will be kept confidential. No names will ever be reported in the final dissertation of papers and presentations that may result from this study. With your permission I would like to record this interview. The duration of the interview should last between one and 1.5 hours. The audio recording will be transcribed to facilitate data analysis; no names will be included in the transcription. You will have an opportunity to review the transcription as part of this study.

#### Introduction

1. Can you tell me a little bit about why you decided to undergo gastric bypass?

*Listen and probe for reasons pertaining to individual decision or advice from family or friend or clinician*

2. What were you're eating and exercise habits like when you were growing up?

*Probe for information related to upbringing or sibling habits in addition to parental guidance on healthful eating and/or physical activity*

3. Can you tell me when your weight gain began? Was there a pattern that emerged over time or event that contributed to weight gain?

*Probe if weight loss ever leveled off or reached a plateau or did it steadily increase over time*

## **Presurgery and Recovery**

4. Tell me about how you felt before surgery?
  - a. physically?
  - b. emotionally?
  - c. mentally?
5. What was going through your mind immediately following surgery? What thoughts were coming to mind?

## **Behavioral Factors Affecting Weight Loss Success**

6. What kinds of support were important to you during the first year post surgery?  
*Probe for examples such as spouse, immediate family members, relatives, friends or colleagues*
7. What types of support are most important to you now?
8. Are you physically active? How does your current level of activity compare to your activity level before surgery? How has your level of activity influenced your current weight?
9. Can you describe your eating behaviors, in particular, your typical portion size? The number of meals you consume per day? What types of foods do you eat? Have these behaviors changed since the surgery?
10. Do you attend support groups? How often do you attend? Have you experienced any benefits from attending a support group?  
  
*Probe to see if a particular group facilitator may provide any more benefit to the group experience as a whole (i.e.) surgeon, nurse, dietitian, counselor or fitness professional*
11. Out of the different topics that we discussed (eating behaviors, physical activity, support groups and physician follow-up), how would you rank them in order of importance for your successful weight loss?
12. Was there ever a time where you felt like the surgery was not a good decision? Can you describe the situation or circumstance?

## **Closing**

13. What recommendations or suggestions would you give to individuals considering this surgery about how they can be successful and maintain good health?
14. Is there anything you would like to add that we haven't discussed that you feel is important to successful weight loss?

### **Closing Script**

Once again, thank you for taking the time to speak with me today. Should you have any further questions please feel free to contact me at the following phone number: (804)-523-5528. If you wish to speak to my committee chair, please contact Dr. Lisa Abrams in the VCU School of Education at [REDACTED].

## Appendix D

### Participant Interview Protocol

Interview Date \_\_\_\_\_

#### Demographics

1. Gender

- Male  
 Female

2. Race/Ethnicity

- African American  
 Asian American  
 Caucasian/White  
 Hispanic/Latino  
 Other

3. Insurance

- Group (employer-based)  
 Personal Health Care  
 Medicare  
 Out-of-Pocket

#### Opening Script

Thank you for taking the time to speak with me today about your one year post-op experience with gastric bypass surgery. My name is Stephen Sowulewski and I am a VCU doctoral candidate working on my dissertation research study. The purpose of this interview is to learn about your experiences with weight loss post-surgery. I hope that the findings from the interviews will help better inform prospective patients and their physicians about how to best support successful weight loss post-surgery. I can assure you that your identity and your responses will be kept confidential. No names will ever be reported in the final dissertation of papers and presentations that may result from this study. With your permission I would like to record this interview. The duration of the interview should last between one and 1.5 hours. The audio recording will be transcribed to facilitate data analysis; no names will be included in the transcription. You will have an opportunity to review the transcription as part of this study.

#### Introduction

15. Can you tell me a little bit about why you decided to undergo gastric bypass?

*Listen and probe for reasons pertaining to individual decision or advice from family or friend or clinician.*

16. What were you're eating and exercise habits like when you were growing up?

*Probe for information related to upbringing or sibling habits in addition to parental guidance on healthful eating and/or physical activity.*

17. Can you tell me when your weight gain began? Was there a pattern that emerged over time or event that contributed to weight gain?

*Probe if weight loss ever leveled off or reached a plateau or did it steadily increase over time.*

#### Presurgery and Recovery

18. I am going to ask you a few questions about how you felt before surgery.

- a. How did you feel physically?
  - b. How did you feel emotionally?
  - c. How did you feel mentally?
19. What was going through your mind immediately following surgery? What thoughts were coming to mind?

### **Behavioral Factors Affecting Weight Loss Success**

20. What kinds of support were important to you during the first year post surgery?  
*Probe for specific types of support: Examples such as spouse, immediate family members, relatives, friends or colleague.*
21. What types of support are most important to you now?
22. How are you physically active? How does your current level of activity compare to your activity level before surgery? How has your level of activity influenced your current weight?
23. Can you describe your eating behaviors, in particular, your typical portion size? The number of meals and snacks you consume per day? Keeping in mind the types of food groups, which type of foods do you eat? Have these behaviors changed since the surgery?
24. Do you attend support groups? How often do you attend? Have you experienced any benefits from attending a support group?  
*Probe to see if a particular group facilitator may provide any more benefit to the group experience as a whole (i.e.) surgeon, nurse, dietitian, counselor or fitness professional.*
25. Out of the different topics that we discussed (eating behaviors, physical activity, support groups and physician follow-up), how would you rank them in order of importance for your successful weight loss?
26. Was there ever a time where you felt like the surgery was not a good decision? Can you describe the situation or circumstance?

### **Closing**

27. What recommendations or suggestions would you give to individuals considering this surgery about how they can be successful and maintain good health?
28. Is there anything you would like to add that we haven't discussed that you feel is important to successful weight loss?

### **Closing Script**

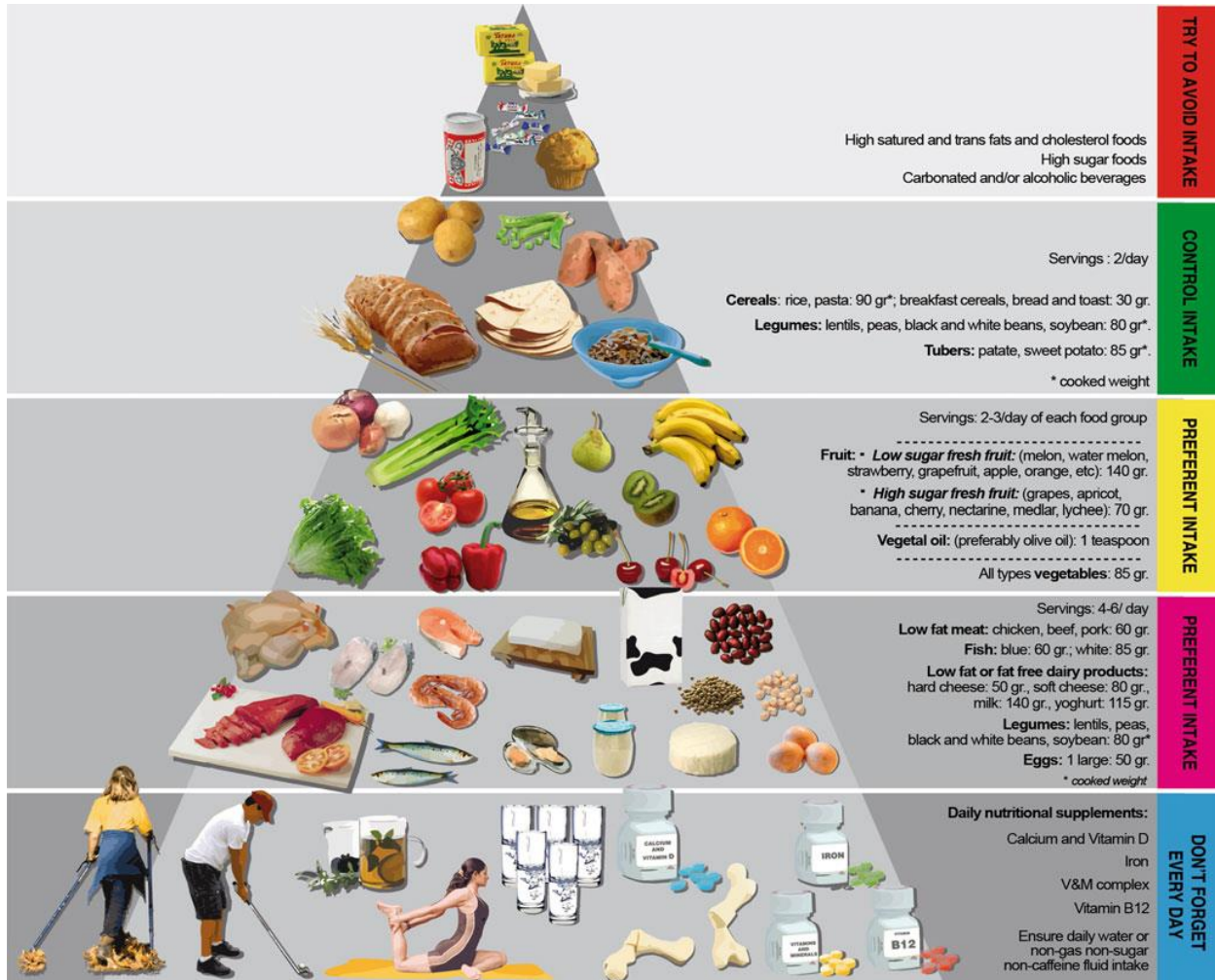
Once again, thank you for taking the time to speak with me today. Should you have any further questions please feel free to contact me at the following phone number: (804)-523-5528. If you



wish to speak to my committee chair, please contact Dr. Lisa Abrams in the VCU School of Education at [REDACTED].

## Appendix E

### Nutritional Pyramid for Postgastric Bypass Patients



Source: "Nutritional Pyramid for Post-gastric Bypass Patients," by V. Moize, X. Pi-Sunyer, H. Mochari, & J. Vidal, 2010, *Obesity Surgery*, 20, 1133-1141.

## Vita

Stephen P. Sowulewski was born June 26, 1973 in Saginaw, Michigan. He is the son of Steve and Stephanie Sowulewski and the brother of Jill Sowulewski. Stephen attended Delta College in Bay City, Michigan and Lake Superior State University in Sault Ste. Marie, Michigan and graduated with a Bachelor's degree in Exercise Science. He earned his Master's degree in Health Promotion and Program Management from Central Michigan University in Mt. Pleasant, Michigan. Stephen matriculated into the Virginia Commonwealth University Urban Services Leadership Track Ph.D. program in the School of Education and is currently an Associate Professor and Department Head of Health in the School of Allied Health and Nursing at Reynolds Community College in Richmond, Virginia.